GTAconsultants

City of Campbelltown Bicycle Plan

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City of Campbelltown

Bicycle Plan

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Quality Record

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A	6/02/2018	Final	Lydia Kairl	Paul Froggatt	Paul Froggatt	

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Table of Contents

Appendices

Figures

Tables

1. Introduction

1.1 Background

GTA Consultants has been engaged by the City of Campbelltown to conduct a review of the 2007 Strategic Bicycle Plan, including review of the local street network, future arterial road links and crossings and connecting opportunities to trails to provide complete network connectivity. Furthermore, strategies for community engagement and education with respect to cycling are required to promote and encourage an increase of cycling levels into the future.

The overall bicycle network, once complete, will provide a local bicycle network suitable for all types and levels of experience of cyclists utilising a variety of bicycle treatments, with emphasis on connectivity to schools, jobs and local facilities. This will be supported by actions and activities to promote and encourage cycling for specific journey purposes and recreational cycling.

The recommendations within the 2007 Strategic Bicycle Plan have been reviewed to identify a comprehensive network of signed routes on the local street network, and connecting shared use paths that will improve, strengthen and establish connections within and between the existing residential communities, open spaces and reserves and adjoining Council areas.

The proposed bicycle network links key origin and destination nodes such as retail and commercial centres, institutional facilities, community centres, schools and recreational areas. The network provides access to public transport to encourage multi-modal transport use. Where the final network relies on the need to provide links or connections along or across the arterial road network, these are identified as future actions for Council to progress in conjunction with DPTI to support and encourage a safe, accessible city with a well-defined and properly connected network of streets and paths. Approximate costs of implementation of each aspect of the Bicycle Plan are incorporated within the updated plan to allow for initial prioritisation and progressive implementation of the recommendations within the plan in a cost efficient manner.

Further to the 2007 Strategic Bicycle Plan, non-infrastructure based strategies are required to continue to address several key areas:

- Improve cyclist safety, especially for vulnerable cyclists such as children;
- Increase the range of people who cycle in the area;
- Facilitate healthy communities through increased physical activity and fun;
- Improve the liveability of neighbourhoods and increase social connections;
- Increase opportunities for local cycling trips that support Campbelltown's economy (e.g. cycling to shops, reserves, schools etc.).

A review of existing marketing programs and suggestions for further small scale pilot projects to assist behaviour change and a shift to cycling as a viable transport mode has also been addressed.

1.2 Vision

The City of Campbelltown's vision for cycling is to **increase the number of Campbelltown City Council residents who ride for recreation, education, shopping, travel to work or any other purpose.**

This vision is focused on the target group of 'interested' but not currently cycling residents, who would likely start as casual leisure cyclists but with appropriate facilities and encouragement could be expected to gradually include cycling as a means of transport for some trips.

The target is to increase the number of residents, including vulnerable groups (children, women and older residents), cycling at least once a week. As such the proposed Bicycle Plan will need to consider the capabilities and preferences of cyclists who are inexperienced and less confident and cater accordingly for their needs to provide an integrated and connected network.

The following Bicycle Plan will provide a network plan and framework for achieving this vision of an increase in cyclists in the Council area.

1.3 Bicycle Plan Report Structure

The Bicycle Plan Report (this document) is structured in several sections as follows:

- **Section 2: Context**

  This section provides the policy and planning context within which the Bicycle Plan is considered and which it should reflect

- **Section 3: Cycling in Campbelltown**

  This section looks at the cycling community, existing cycling routes and facilities, cycling levels and demographic, traffic volumes and speeds and cyclist crash records within the City of Campbelltown.

- **Section 4: Bicycle Network**

  This section covers the proposed updated bicycle network and recommended route and crossing treatments to create a coherent and safe network.

- **Section 5: Supporting Facilities**

  This section covers the supporting facilities needed to support the proposed network, with identified locations for new or additional bike parking and coherent and appropriate signage to create a useable network.

- **Section 6: Bicycle Culture**

  This section looks at the principles behind behaviour change to increase cycling levels within Campbelltown and the events, promotion, marketing, education and encouragement schemes that can be used to boost an uptake in cycling.

- **Section 7: Monitoring and Evaluation**

  This section looks at methods of monitoring cycling levels and uptake, as well as evaluating the various elements of the bicycle network, supporting facilities and events/schemes that aim to create a cycling culture.

2. Context

2.1 Campbelltown City Council

The City of Campbelltown is a medium sized Council of approximately 51,350 residents (ABS ERP 2014), having an area of 22 sq. km, located in Adelaide's inner eastern suburbs, 8 km from the Adelaide CBD. The City is bounded by the River Torrens and the City of Tea Tree Gully in the north, the Adelaide Hills Council in the east, the City of Burnside in the south, the City of Norwood Payneham & St Peters in the west and the City of Port Adelaide Enfield in the north-west.

The Council area is therefore well located to allow for the encouragement of commuter cycling into and out of the Adelaide CBD, and across the metropolitan area into adjoining Council areas and for recreational riding along the Torrens Linear Park and other proposed recreational paths.

2.2 National Cycling Strategy

The proposed vision, priorities and actions contained in the National Cycling Strategy (NCS) are pertinent to the City of Campbelltown Strategic Bicycle Plan. The Australian National Cycling Strategy 2011-2016 (September 2010) was the subject of a national consultative process in 2010. The National Cycling Strategy has a vision for 'more cycling, to enhance the well-being of all Australians'.

It is expected that overarching priority areas and actions within the National Cycling Strategy will lead to the vision becoming a reality. The priority areas for action are documented below, together with some discussion on the relevance to Council.

Priority 1 – Cycling Promotion

Promote cycling as both a viable and safe mode of transport and an enjoyable recreational activity.

Showing leadership and raising the profile of cycling as a sustainable and legitimate mode of transport, by providing a Strategic Bicycle Plan and committing to ongoing engineering and encouragement programs, is likely to foster a positive view towards cycling.

Priority 2 – Infrastructure and facilities

Create a comprehensive and continuous network of safe and attractive routes to cycle and end-of-trip facilities.

The goal of the National Cycling Strategy is to accelerate the provision of infrastructure and facilities for cycling. It is expected that this review will highlight areas for further development for the provision of cycling networks, end trip facilities, sign posting and maps that together will promote and encourage cycling.

Priority 3 - Integrated planning

Consider and address cycling needs in all relevant transport and land use planning activities.

In order to encourage cycling, mechanisms other than hard engineering treatments will be required.

Such aspects will include:

- Ensuring cycling is considered in all relevant Council Planning and Infrastructure delivery activities and into transport and land use policy and strategies.
- Development of guidance to ensure planning for cycling is considered in planning schemes, in on and off road facilities, for end trip activities and as part of new sub-divisions and redevelopments.
    - Ensuring the benefits of cycling are promoted.
    - Developing a cycling resource centre web-site for users planning trips through and within the City of Campbelltown.

Priority 4 – Safety

Enable people to cycle safely.

Provision of a safe environment for cycling is paramount towards breaking down perceptions that the road environment is an unsafe place for cyclists. Facilities and provision of networks and routes for all skill levels are therefore essential. A key aspect of this plan is to ensure that there is a choice of cycle route dependent upon experience. Other important aspects will be to promote awareness of cycling within the road environment.

Priority 5 – Monitoring and evaluation

Improve monitoring and evaluation of cycling programs and develop a national decision-making process for investment in cycling.

While this aspect rests mainly with State and Federal Governments, Council should continue to support cycling programs, and monitor their success.

Priority 6 – Guidance and best practice

Support the development of nationally consistent guidance for stakeholders to use and share best practice across jurisdictions.

While this aspect rests mainly with State Government, Council should continue to support such programs as Bike Ed and Safe Routes to School.

2.3 State Context

2.3.1 *The Integrated Transport and Land Use Plan*

The Integrated Transport and Land Use Plan (ITLUP), released in October 2013, outlines several priorities for Greater Adelaide relating to cycling. The priority solutions will include:

- continued extension and improvement to cycling and walking networks.
- encourage more cycling, walking and public transport use.
- prioritise public transport, cycling and walking connections in and around the CBD and suburban activity centres.

Investigations in to the potential opportunities along specific corridors extending in to Campbelltown have commenced, with works on the Beulah Road corridor through Norwood and Burnside commencing in 2015. Specific corridors are discussed as part of the proposed bicycle network in section 5.

2.3.2 *South Australia's Strategic Plan*

In 2011, the Government updated the Strategic Plan for South Australia, and in 2014 the Strategic Infrastructure Plan for South Australia, both of which include a range of elements to support cycling in South Australia.

The plan outlines the Government's commitment to creating a transport system that is integrated, sustainable, efficient and safe and one that meets the current and future demands of industry, business, tourism and the general community.

Targets for transport include doubling the number of people cycling in South Australia by 2020 and increasing the use of public transport to 10% of metropolitan weekday passenger vehicle kilometres travelled by 2018.

Under the framework, the Government's strategic objectives (as outlined within these documents) are defined as:

- Growing prosperity
- Improving wellbeing
- Attaining sustainability
- Fostering creativity and innovation
- Building communities and
- Expanding opportunity.

Council's Strategic Bicycle Plan Review is an important element in assisting in the realisation of these objectives. Council has also adopted specific Transport Plan objectives which are addressed in Section 2.4.3.

2.3.3 *30 Year Plan for Greater Adelaide*

The 30 Year Plan for Greater Adelaide, published in 2010 by the Government of South Australia, presents policies relating to cycling in a number of sections. The policies as they are defined in these sections are as follows:

Transit corridors

- *Policy 17:* Ensure transit corridors contain a network of cycle ways, walkways and greenways to provide cooling and to create liveable and attractive locations for a diverse population.

Communities and social inclusion

- *Policy 9:* Give priority to pedestrian, wheelchair, gopher and cycle movement in neighbourhoods, which will ensure greater access for people with less mobility, particularly children, the elderly and people with prams.

Health and wellbeing

- *Policy 1:* Design pedestrian- and cycle friendly areas in growth areas and existing neighbourhoods to promote active communities.

Transport

- *Policy 12:* Provide and extend a connected bicycle network across Greater Adelaide, using bike lanes and cycle ways.
- *Policy 13:* Integrate into Structure Plans for major transit corridors off-road shared-use paths, on-road bicycle lanes, footpaths and cycling friendly streets to promote walking and cycling.
- *Policy 14:* Provide direct and safe cycling links to public transport stations and interchanges.

The City of Campbelltown's decision to undertake this plan represents a commitment to supporting the Government's planning strategies for metropolitan Adelaide for cycling.

2.3.4 *LGA Metropolitan Local Government Group Cycling Strategy*

The Metropolitan Local Government Group (MLGG) Cycling Strategy was published in September 2015 by the Infrastructure and Health Department of the Local Government Association (LGA) of South Australia. The purpose of the Strategy is to assist the establishment of a coordinated, consistent and attractive cycling network across the Metropolitan area, including strategic priority routes.

St Morris Bikeway is identified as the highest priority strategic route within the City of Campbelltown Council area in the document, followed by the O-Bahn Bikeway.

The three key actions outlined in the MLGG Cycling Strategy are:

- *Increased connectivity of cycling infrastructure across Council boundaries*
- *Grant Funding*
- *Encouraging children to cycle to school.*

The Strategy also outlines some of the funding programs available for Local Government to help improve cycling outcomes.

2.4 Local Context

2.4.1 *Strategic Plan 2010 – 2020*

The Strategic Plan for the City of Campbelltown is the over-arching document which paves the way for the direction of growth and development. The Vision of the Plan is:

“Caring for what we have, creating what we need.”

The Strategy focuses on the following key areas:

- Quality Living
- Leadership
- City Planning
- Environmental Responsibility
- Local Economy

Part of Quality Living Strategy number 1.5.1 “Improve infrastructure to support and promote a healthy lifestyle” is to review the Bicycle Plan.

2.4.2 *City of Campbelltown Development Plan*

The Development Plan for the City of Campbelltown was last consolidated on 31 July 2014. The Development Plan is a detailed document listing the various objectives for development control and covers different aspects of development including Transportation, Public Utilities, Conservation, Heritage, Open Space and Urban Design.

The Development Plan specifically underlines the need for safe and eco-friendly transport, for example cycling and walking. Several relevant objectives from the ‘Transportation and Access’ section are outlined below:

“**OBJECTIVE 1:** A comprehensive, integrated, affordable and efficient air, rail, sea, road, cycle and pedestrian transport system that will:

a) provide equitable access to a range of public, community and private transport services for all people;

b) ensure a high level of safety;

c) effectively support the economic development of the State;

d) have minimal negative environmental and social impacts;

e) maintain options for the introduction of suitable new transport technologies."

"**OBJECTIVE 4:** Provision of safe, pleasant, accessible, integrated and permeable pedestrian and cycling networks that are connected to the public transport network."

2.4.3 *City of Campbelltown Plan (Transport Action Plan) 2006 – 2016*

This Plan provides a vision, objectives and benchmarks for transport within the City. It addresses issues, identifies opportunities and sets out various individual component actions. The Plan envisages a safe and eco-friendly approach to providing a sustainable transport network.

The main ongoing objectives of the Plan which relate to the cycling strategy are:

- Safety for pedestrians and other vulnerable road users;
- Accessibility to public places, recreation areas, and services;
- Accessibility to businesses and residences;
- Transport systems must be designed to promote social interaction and maintain the cultural heritage of the City.

The Strategy also identifies a lack of cycling facilities as one of the main issues. The actions directly relevant to cycling which follow these issues include:

- Support walking and cycling by providing safe, direct, and convenient routes for users and attractive precincts to encourage these activities.
- Develop and implement a Cycling Plan for the city co-ordinated with Bikedirect.

Other actions, which are less directly relevant, include:

- Maintain and develop roads, footpaths, and tracks including parking and shelters at appropriate standards.
- Provide adequate lighting for streets, parks and buildings.
- Develop and implement a streetscape theme ensuring business and community involvement.

2.4.4 *Open Space Strategy (June 2012)*

The Campbelltown Open Space Directions and Strategies Report provides a strategic framework to guide the future provision, development and management of open space across the City of Campbelltown.

One of the objectives of the Open Space Strategy is to "strengthen the physical and visual open space connections across the City" of Campbelltown, using the following strategies.

"Strategy 3.1.1 Over time potentially acquire parcels of land to improve open space connections (e.g. private land backing onto creeklines or corridors). Place a particular emphasis on building the connections along Fourth Creek to provide a central spine and along other creeklines and drainage areas that provide links to the River Torrens Linear Park and connect natural areas.

Strategy 3.1.2 Improve road crossings, signage and landscapes to strengthen the physical and visual connection between parcels of open space.

Strategy 3.1.3 Improve the connection between open space and urban development through the appropriate location and design of the open space. This could require some land acquisition or redesign where open space is located behind housing or has poor entrance points and profile.

Strategy 3.1.4 Improve the connections to key conservation and nature based open space such as Wadmore Park / Pulyonna Wirra, Black Hill Conservation Park and Morialta Conservation Park. This includes landscape connections and signage that direct people to these areas and pathway networks and amenities within the natural areas that support activity.

Strategy 3.1.5 Improve way finding linked to key parks and facilities, conservation parks and tourism attractions such as the' Flavours of Campbelltown Food Trail', through improved signage and interpretive information."

2.5 Social Plan 2020

The Campbelltown City Council's Social Plan is primarily a 'people plan' which identifies the strengths, aspirations, hopes and gaps within the Council area that influence people's quality of life.

The Social Plan identifies that the Council will consider the following in relation to cycling:

- Promote walking and cycling trails in Campbelltown
- Signage to promote safe cycling and walking routes
- Places for children to learn to ride safely and without training wheels

2.6 Pedestrian Access and Mobility Plan

The Pedestrian Access and Mobility Plan (PAMP, August 2014) focuses on the needs of pedestrians. The PAMP provides a local context for the International Charter for Walking, with particular regard to local opportunities, barriers and walking infrastructure.

The PAMP Strategies are as follows:

- Increased inclusive mobility
- Well designed and managed spaces and places for people
- Improved integration of networks
- Supportive land-use and spatial planning
- Reduced road danger
- Less crime and fear of crime
- More supportive authorities
- A culture of walking

2.7 Disability and Inclusion Plan

The Disability and Inclusion Plan (2014-2018) outlines the following objectives:

- ***Outcome 1:*** *Inclusive and accessible communities*
- ***Outcome 2:*** *Economic security and employment*
- ***Outcome 3:*** *Rights protection, justice and legislation*
- ***Outcome 4:*** *Personal and community support*
- ***Outcome 5:*** *Learning and skills*
- ***Outcome 6:*** *Health and wellbeing*

2.8 Child Friendly SA Campbelltown Community Plan

The Child Friendly SA Campbelltown Community Plan (September 2015) is a 'blue print' to guide the work of the Child Friendly SA Campbelltown Steering Group which was established in 2013 to drive the Child Friendly SA pilot initiative.

The initiative strives to achieve a community where "children and young people are thriving and have a strong sense of wellbeing."

2.8.1 *Other Relevant Local Area Plans*

Chain of Trails Master Plan

The Chain of Trails Master Plan outlines plans to upgrade Third Creek, Fourth Creek and Fifth Creek trails through the City of Campbelltown. While the Master Plan outlines recommendations that are primarily focused on walking treatments, the plans for road crossings, additional sections of paths and path upgrades are relevant to the consideration of the potential of these routes for cycling. Treatments proposed in the Bicycle Plan on these trails have sought to align with the Master Plan.

River Torrens Linear Park Management Plan

The *River Torrens Linear Park – Eastern Section Management Plan* (URPS, 2011) provides management and maintenance strategies to be considered with regards to trail management and upgrades. Any treatments on the trail by the adjoining Councils should be in alignment with the Management Plan.

Campbelltown Urban Village Master Plan

The Campbelltown Urban Village Master Plan (December 2010) provides a framework to guide Council and private developers in the planning and implementation on of new works within the precinct. As a guiding document, the Master Plan outlines the over-arching vision and identifies concepts, projects and indicative costs for forward budgeting and directing capital works.

The Master Plan confirms the previous Bicycle Plan (2007) recommendation of a cycle refuge in Lower North East Road is implemented.

The Master Plan includes the following recommendations in relation to cycling;

- *Enhance links and connections*
  - D.17: Colour cycle lanes at intersections and any conflict points and provide bike stands in strategic locations within the precinct.

Magill Village Master Plan

The Magill Village Master Plan is a collaboration between the City of Burnside and the City of Campbelltown identifying the potential of the Magill Centre. Third Creek runs through the study area identified in this Master Plan, and several route opportunities to connect Magill Road with the Third Creek Trail are presented in the Master Plan. The Master Plan identifies the continuation of bicycle lanes and speed limit reduction on Magill Road as key strategies to encourage and increase the safety of cycling. Increased/improved bicycle amenities (e.g. bike parking) are also noted as essential to encourage users to stay in the precinct.

Local Area Traffic Management Plans

Several suburb specific Local Area Traffic Management (LATM) Plans are current within the City of Campbelltown. LATM Plans for the suburbs of Paradise and Campbelltown propose traffic calming measures that are expected to be implemented into the future in these suburbs. In order that these LATM plans are consistent with the objectives of the Strategic Bicycle Plan, the proposed LATM treatments should be reviewed to ensure that they are suitable for cyclists. No specific measures have been identified in the LATM plans as approved that would require amendment, although this should be monitored as both the LATM plans and the proposed bicycle network are developed and implemented.

Campbelltown Memorial Oval Sporting Hub Master Plan (August 2014)

The Campbelltown Oval Master Plan identifies the recommended future direction, layout and design of the proposed facilities for the reserve. It provides the direction on how it may look and how it may be managed to ensure optimal use for a number of active and passive pursuits.

Campbelltown Leisure Centre

While no formal master plan has been prepared for Campbelltown Leisure Centre, it is an identified local destination within the Council area. It is currently being completely redeveloped and will provide bicycle parking to complement its proximity to Linear Park.

OPAL Projects/Aims

The OPAL (Obesity Prevention And Lifestyle) program is a Government initiative for schools that seeks to raise awareness and implement programs and activities across a range of lifestyle factors that encourage healthy and active living. The development of active travel opportunities is a key part, with specific objectives to achieve:

- Increase in 4 to 12 year old children regularly walking, scooting or cycling to and from school, shops and parks and
- Increase in independent mobility of upper primary children regularly walking, scooting or cycling to and from school, shops and parks.

Specific environmental[1] impacts within the OPAL sphere of influence that would relate to the Bicycle Plan include:

- Increase the **acceptability** of park and walk/ride behaviour around school sites.
- Increase the **acceptability and desire** of active travel of families and children to and from school, shops and park sites and around streets. (i.e. ***Social/cultural environment*** – 'normal' behaviours, perceived and real safety issues, friendliness of neighbourhoods.)
- Increase **access** to family friendly social ride programs.
- Ensure family friendly social ride programs are of high **quality.**
- Improve the **quality** of policy decisions that impact on the cycling environment (i.e. speed restrictions, school policies)
- Improve the quality of the ***physical environment*** (natural and built) - generally refers to the facilities such as footpaths, bike lanes, traffic flows, distances travelled, public transport, bike direct signage, pleasant routes to local destinations.

There are also individual impacts identified as objectives which can be achieved through specific programs and activities.

- Re-build the ***skills and confidence*** of children and families to cycle in Campbelltown.
- Increase the desire for cycling by creating opportunities for social connection through cycling.
- Increase the desire for cycling through a Campbelltown marketing campaign that targets 'contemplators'.

[1] Environment is defined broadly to include the Physical, Social/cultural environment and Policy/regulatory environment.

State Government Mountain Bike Strategy

The State Government has developed a strategy ‘Establishing the Adelaide Mount Lofty Ranges Region as an international mountain bike destination’ (July 2015). The basis for this report is investigating the potential for the Adelaide Mount Lofty Ranges as “an international mountain bike destination offering world class experiences for a range of cycling markets.” The City of Campbelltown is located perfectly to support these goals.

3. Cycling in Campbelltown

This section discusses the Campbelltown cycling community, existing cycling routes and facilities, cycling levels and demographic, traffic volumes and speeds, and cyclist crash records within the City of Campbelltown.

3.1 The Cycling Community

When developing cycling facilities, the different types of cyclist, their level of confidence and ability to safely mix with traffic have to be considered. Research has typically grouped cyclists in to 4 categories when cycling for transport purposes, although this can also be applied to recreational cycling.

Figure 3.1: Different Types of Cyclists

<1% *strong & fearless*	The 'strong and fearless' ride regardless of road conditions: riding is a strong part of their identity and they are undeterred by road conditions.
7% *enthused & confident*	The 'enthused and confident' are and could be attracted to more regular riding by continuing to address the barriers to cycling: shorter trip distances, better bicycle facilities, better end-of-trip facilities.
60% *interested but concerned*	The 'interested but concerned' hear messages about how easy it is to cycle, but they are afraid to ride. They don't like the cars speeding down their streets. They get nervous thinking about what would happen to them on a bicycle when a driver runs a red light, or passes too fast and too close.
*33***%** *no way, no how*	The 'no-way, no-how' group are not interested in cycling at all, for reasons of topography, inability, or simply a complete and utter lack of interest.

(Original source: Geller R, Four Types of Cyclist Portland Bureau of Transportation, 2010)

The Austroads Guide "Cycling Aspects of Austroads Guides" (herein referred to as Austroads Cycling Guide) further groups cyclists into seven categories, each with specific riding characteristics and network requirements. There may be a need to cater for more than one group in any corridor. The groups are set out in Table 3.1 below.

Table 3.1: Characteristics of Bicycle Riders and their Environments

Category	Rider characteristics	Riding environment
Primary school children	Cognitive skills not developed, little knowledge of road rules, require supervision	Off-road path, footpath (where permitted) or very low volume residential street
Secondary school children	Skill varies, developing confidence	Generally use on-road facilities or off-road paths where available
Recreational	Experience, age, skills vary greatly	Desire off-road paths and quiet local streets, avoid heavily trafficked routes, more experienced will prefer to use road system for long journeys
Commuter	Vary in age, skill and fitness, some highly skilled and able to handle a variety of traffic conditions	Some prefer paths or low-stress roads, willing to take longer to get to destination, others want quick trips regardless of traffic conditions, primarily require space to ride and smooth riding surface, speed maintenance
Utility	Ride for specific purposes (shopping), short length trips, and routes unpredictable	Not on highly trafficked roads, needs include comprehensive, low-stress routes, appropriate end of trip facilities
Touring	Long distance journeys, may be heavily equipped, some travelling in groups	Often route is similar to that of other tourists
Sporting	Often in groups, two abreast occupying left lane, needs similar to commuters	Travel long distances in training on arterials, may include challenging terrain in outer urban or rural areas, generally do not use off-road routes because of high speed and conflict with other users

Source: Table 2.4 of Austroads, Cycling Aspects (2014)

3.2 Network Principles

The City of Campbelltown has an existing road and open space network that is generally conducive to cycling as it comprises an accessible grid network, within close proximity to the Adelaide CBD and, apart from the areas immediately adjoining the Adelaide Hills, a relatively flat topography. Many destinations within the Campbelltown area are within a 2.5 kilometre, 10 minute cycling trip. The area has many features and activity nodes that are consistent with the concept of a city for cycling and would benefit from a cycling focus.

In developing a bicycle network that meets the needs of all potential cycling trips, there are consistent principles that all facilities should provide. The Austroads Cycling Guide identifies the principles for cycling networks which are set out in Table 3.2 below.

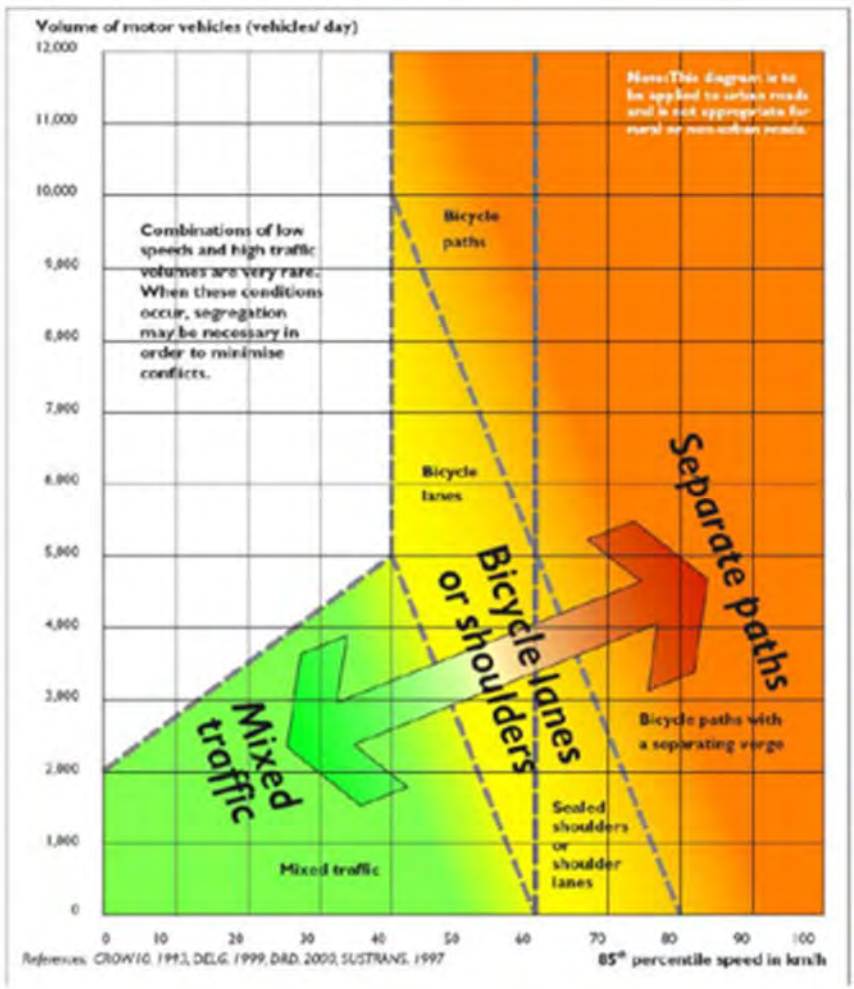
Table 3.2: Bicycle Network Features

Route Feature	Comments
Safety	Minimal risk of traffic-related injury, low perceived danger, space to ride, minimum conflict with vehicles
Coherence	Infrastructure should form a coherent entity, link major trip origins and destinations, have connectivity, be continuous, signed, consistent in quality, easy to follow, and have route options
Directness	Route should be direct based on desire lines, have low delay through routes for commuting, avoid detours and have efficient operating speeds
Attractiveness	Lighting personal safety, aesthetics, integration with surrounding area, access to different activities
Comfort	Smooth skid-resistant riding surface, gentle gradients, avoid complicated manoeuvres, reduced need to stop, minimum obstruction from vehicles

Source: Austroads Aspect of Cycling (2014) Table 2.2

On streets with generally low traffic volumes and speeds, advisory pavement markings (logos and arrows) and directional signage will usually be sufficient. As traffic volumes and speeds increase the need for dedicated space to be provided for cyclists increases. At very high traffic volumes and speeds, the cyclists should be fully separated from vehicles. The Austroads Cycling Guide provides guidance on when separation should be considered, based on Figure 3.2.

Figure 3.2: Separation Requirements for Cyclists and Vehicles



Source: Figure 2.2 Cycling Aspects of Austroads Guides, Austroads, 2014

3.3 Existing Routes and Facilities

Existing cycling provision in the Campbelltown area is mainly based around arterial road bike lanes and the identified Bikedirect network, which is only indicated on street through small blue arrow signs. The recommended routes as defined in the 2007 plan proposed a number of additional routes to extend the Bikedirect network and provide links to local destinations, including schools, shops and recreation areas.

Most arterial roads have bicycle lanes, however they are generally operational only during the AM and PM peak hours. Some off street cycling routes are provided through the Council, such as Linear Park and the O-Bahn along the northern Council border.

Some bicycle parking is present throughout the Council area, generally at new developments and large shopping centres, such as at Newton Village Shopping Centre.

3.3.1 *Bikedirect Network*

Bikedirect is a network of cycling routes developed by the State Government to encourage cycling by providing a variety of options for cyclists with different needs and abilities. The network includes main roads, secondary roads, and off-road paths throughout the Adelaide metropolitan area.

Bikedirect routes are shown on Bikedirect and CycleInstead journey planner maps covering metropolitan Adelaide. Where more than one route exists, only one will usually be designated as a Bikedirect route. The maps also identify main roads with bicycle lanes, although these are not identified by Bikedirect route signage. Arterial roads complement the Bikedirect network in providing an overall cycling network appropriate for the different types of cyclists.

The secondary cycling routes generally cross arterial roads near existing signalised pedestrian crossings and median refuges, or where there is scope for refuges to be provided. There are however a number of locations where safe crossing facilities are required across main roads. In some locations on and off road treatments and shared use paths will be required to help cyclists access crossing opportunities easily and safely.

3.3.2 *Arterial Roads*

All arterial roads within the City of Campbelltown are classified as main road cycling routes by the Bikedirect network, with the many of these routes providing on-road bicycle lanes. Existing arterial road bicycle lanes are shown on Figure 3.3 below. However, they are sometimes discontinuous around intersections and in other mid-block locations (Figure 3.4) and generally operational only during the AM and PM peak hours (Figure 3.5).

Figure 3.3: Existing Arterial Road Bicycle Lanes

Figure 3.4: Example of Bicycle Lane Ending

Figure 3.5: Example of Bicycle Lane Time Restrictions

The 2014 Citizens Jury considerations of the opportunities for cyclists and motorists to share the street identified a need to provide additional dedicated bicycle facilities on arterial roads to help encourage cycling, especially for commuter trips. “Disappearing” bike lanes at intersections and mid-block was identified as a particular concern by both cyclists and motorists. The State Government, in responding to the Jury recommendations, is working to deliver improved facilities on the arterial roads and this is reflected in the considerations of the existing bike lane provision on the arterial road network noted below. Given the proximity of the council area to the Adelaide CBD and

locations that could attract recreational cyclists, improvements to the network would offer potential to significantly increase the number of cycling trips.

3.3.3 *Major Collector and Local Roads*

In the City of Campbelltown, some of the major collector and local roads are designated as bike routes by the Bikedirect network. Limited cycle facilities are provided although there are clear locations on the secondary network that lack supporting infrastructure such as crossing treatments.

The Bikedirect routes may be signed but are not generally supported by other advisory treatments (e.g. sharrows) or traffic calming techniques. Crossing facilities and other supporting infrastructure is more limited than on arterial roads. Improved crossings and other treatments on cycling routes on some major collector and local roads will help improve links between routes and improve safety. Identifying best treatments along non-arterial road routes and implementing improvements should be undertaken at the same time as other works such as pavement renewal.

3.3.4 *Off Road Routes*

Linear Park

River Torrens Linear Park (RTLP) connects Athelstone through the edge of Adelaide CBD to Henley Beach. The shared-use pedestrian and cycle path generally runs on both sides of the River Torrens, and connects with the O-Bahn bicycle route.

A Linear Park Coordinating Committee was formed in 2012 comprising of State and local governments, including the City of Campbelltown. The Committee aims to promote a cooperative approach to the management and development of the entire RTLP. Incremental upgrades to the shared use path trail, as well as management and maintenance plans, are encompassed by the *River Torrens Linear Park – Eastern Section Management Plan* (URPS, 2011).

Linear Park is a well-used bicycle route for both commuter and recreational cycling. Whilst the format and function of the shared use path offers good facilities, there is limited directional signage, particularly for intermediate destinations and there are no bike parking facilities at any of the intermediate playground and amenity facilities. Lighting is also limited which raises concerns over commuter use in winter evenings. The popularity of the route does give rise to conflicts between pedestrians and cyclists, particularly where cyclists are travelling above the desirable speed for a shared use path.

O-Bahn

The O-Bahn runs through the Council area between the Adelaide CBD and Westfield Tea Tree Plaza Shopping Mall. The O-Bahn Paradise Interchange is located near Darley Road in the north of the Council area.

The O-Bahn provides fast and high frequency bus services with a bicycle path running alongside the majority of the route. The bicycle route connects Linear Park between Darley Road and Felixstow, south of Paradise Interchange. Bicycle storage cages and bicycle parking are provided at Paradise Interchange and the Klemzig stop which is close to the western edge of the Council area.

In this Bicycle Plan, (unless specified otherwise) Linear Park and the O-Bahn bicycle route are referred to collectively as Linear Park.

3.3.5 *Local Destinations*

Schools

All primary schools have previously been surveyed regarding their travel patterns as part of the Safe Routes to School project. There has also been involvement in Way2Go projects which has included formal bicycle education within the participating schools through the BikeEd program. Despite this there remain relatively low levels of cycling to school with little evidence of linked school and cycling commuting trips.

Paradise Skate Park

Paradise Skate Park is located off Darley Road with access from Linear Park. The 2007 Strategic Bicycle Plan advised upgrading the park including provision of bicycle racks, benches and water fountains.

Third, Fourth and Fifth Creek Walking Trails

Third Creek, Fourth Creek and Fifth Creek provide signed walking trails in the City of Campbelltown area. These trails are a mix of sealed and unsealed paths, running alongside the respective creeks. Examples of the trails are shown in Figure 3.6 and Figure 3.7. Sections of these trails have potential to be upgraded and provide an off street cycling option in the City of Campbelltown, primarily along Fourth Creek. The '*Chain of Trails Master Plan'* (Swanbury Penglase for the City of Campbelltown Council, September 2014) outlines the master plan and future opportunities for upgrades along the trails.

Figure 3.6: Fourth Creek Trail Creek Crossing

Figure 3.7: Third Creek Trail

3.3.6 *End of Trip Facilities*

Some bicycle parking is present throughout the Council area, generally at new developments and large shopping centres, such as at Newton Village (Figure 3.8).

Figure 3.8: Bicycle Parking at Newton Village

3.3.7 *Neighbouring Council Bicycle Plans*

The City of Campbelltown is bordered by Port Adelaide Enfield, Burnside, Norwood Payneham & St Peters, Tea Tree Gully, and Adelaide Hills Councils. Port Adelaide Enfield, Burnside, Norwood Payneham & St Peters, and Tea Tree Gully Councils have published bicycle plans or strategies which include network maps. Adelaide Hills Council has a draft bicycle plan in preparation.

Appendix A includes more details on the respective neighbouring Council Bicycle networks and where they link with the City of Campbelltown.

3.4 Current Cycling Activity

3.4.1 *Cycling Volumes*

There is currently very little data available on cycling activity within Campbelltown City Council. There is a permanent counter in place on Linear Park located immediately east of the Adelaide CBD (in the vicinity of Hackney Bridge) however this would not provide a reliable indication of volumes entering or leaving Campbelltown. There are however current cycling volumes available at DPTI intersections across the City of Campbelltown and these are shown on Figure B.1 in Appendix B. These indicate that Magill Road and sections of Glynburn Road generally attract the most cyclists.

3.4.2 *Demographic Data*

It is important to understand the demography of the Council area, as this reveals a broader understanding of the current and future level of usage and infrastructure to be provided.

The Australian Bureau of Statistics (ABS) puts the current estimated resident population (ERP) of the City of Campbelltown at around 51,350. The total population of Campbelltown in 2011 Census was 48,162, of which about 25% was above the age of 60, while about 17% was below 14. This suggests that cycle tracks with safe and easy access will be important and must accommodate the needs of both older road users and young children.

3.4.3 *Cycle to Work Data*

2011 Census data indicates that around 0.8% of journeys to work were made by bicycle in the City of Campbelltown. This is an increase overall from 2001 (0.6%) but a decrease from 2006 (0.9%). Tranmere was the suburb in the City of Campbelltown with the highest percentage of people cycling to work (1.3%) in 2011, with Newton (0.5%) having the lowest, which is likely to reflect distances from the CBD and topography. The cycle to work census data from 2011, 2006 and 2001 for the suburbs partly or wholly within the City of Campbelltown are summarised in Table 3.3.

Table 3.3: The City of Campbelltown Cycle to Work Census Data

Suburb	Total Cycle to Work (2011)	Working Population (2011)	Percentage Cycling to Work (2001)	Percentage Cycling to Work (2006)	Percentage Cycling to Work (2011)
Athelstone	28	4,823	0.4%	0.5%	0.6%
Hectorville	14	1,575	0.6%	1.2%	0.9%
Newton	11	2,216	0.3%	0.7%	0.5%
Rostrevor	21	3,350	0.6%	0.7%	0.6%
Campbelltown	27	3,050	0.9%	1.4%	0.9%
Magill	38	3,775	1.0%	1.3%	1.0%
Paradise	23	2,982	0.4%	0.6%	0.8%
Tranmere	23	1,770	1.4%	1.5%	1.3%
The City of Campbelltown (Council)	**174**	**22,224**	**0.6%**	**0.9%**	**0.8%**

Overall, the level of regular commuter cycling activity in Campbelltown is less than the equivalent of the “strong and fearless” group identified in Section 3.1 and shown in Figure 3.1. To increase this level to include larger proportions of the next two groups; “enthused and confident” and “interested but concerned” will require the implementation of facilities that meet their cycling needs and safety requirements.

3.5 Transport Networks

3.5.1 *Traffic Volumes*

To understand the operation of the road network on the area, the State Government and the City of Campbelltown measure traffic flow and growth and the types of vehicles using the roads. The data collected about how the road networks are performing can be used to provide an indication of the suitable routes for use by cyclists and the format of the cycling infrastructure that should be provided. The most recent local street daily traffic volume data that is available within the Council area is shown on Figure C.1 in Appendix C.

The Austroads Cycling Guide identifies the combination of traffic volume (vehicles per day (vpd)) and speed (85th percentile in km/h[2]) above which roads would generally require bicycle lanes. Below these thresholds cyclists can be considered to safely share the road. For traffic volumes, the threshold for separation can be up to 5,000 vpd depending on the associated speed environment. The provision of separate on-road bicycle facilities should be investigated on all roads that form part of the bicycle network, with traffic volumes exceeding 3,000 vpd.

The most recent traffic data provided by the City of Campbelltown indicates that there are eight roads that form part of the bicycle network with traffic volumes greater than 3,000 vpd. These are:

- Arthur Street
- George Street
- Glen Stuart Road

[2] Defined as the speed exceeded by 15% of the total traffic recorded on a street.

- Graves Street
- Maryvale Road
- Reid Avenue
- Silkes Road
- Stradbroke Road.

The volumes on these streets are considered in conjunction with their recorded traffic speeds in Appendix C.

3.5.2 *Traffic Speeds*

The general urban speed limit in built-up areas in South Australia is 50 km/h. Where the speed limit is higher or lower than 50 km/h roads are clearly marked with speed limit signs, including many arterial roads, road work zones, 25 km/h school zones and children's crossings within the City of Campbelltown. Within The City of Campbelltown the local street network is generally 50 km/h with the exception of Stradbroke Road, George Road, Lower Athelstone Road, Coulls Road and Maryvale Road. 25 km/h school zones are in place adjacent to the schools other than on the arterial road frontages.

The Austroads Cycling Guide notes that where 85th percentile traffic speeds are below 40 km/h, bicycles and motor vehicles may share the road without special provisions. This would provide a speed difference between a bicycle and motor traffic of less than 20 km/h with the average speed of cyclists in an urban area typically around 20 km/h. Separation between bicycles and motor vehicles is desirable where the speed difference will be higher, i.e. at vehicle speeds above 40 km/h depending on the associated traffic volumes.

The most recent available local road traffic speed data is shown on Figure C.2 in Appendix C, indicating the range of both the average and 85th percentile speeds recorded.

The format of on-road bicycle facilities should be investigated on all roads that form part of the bicycle network with 85th percentile traffic speeds in excess of 50km/h. The most recent traffic data provided by the City of Campbelltown indicates that there are a number of roads that form part of the bicycle network with recorded 85th percentile speeds of greater than 50km/h.

Streets with 85th percentile speeds over 50km/h and volumes that approach the threshold shown on Figure 3.2 of the Austroads guidance may require segregation between cyclists and vehicles or the implementation of traffic calming measures that reduce the traffic speeds. Further investigation of the traffic speed and volume data available indicated many roads on the bicycle network where 85th percentile speeds higher than 50 km/h and high volumes were recorded.

Based on this Table C.1 and Table C.2 in Appendix C have been prepared summarising the streets that approach or exceed the threshold where under the current street environment, advisory treatments may not be appropriate.

On these streets separation of cyclists and vehicles may be required in the form of bicycle lanes or shoulders. Alternatively, management of vehicle speeds may be required so that advisory treatments are appropriate, particularly as road widths on the majority of streets are unlikely to allow the provision of on street bicycle lanes.

3.5.3 *Crash Data*

Crash data involving cyclists for the period from 2009 to 2013 in the City of Campbelltown was obtained from State Government records.

It is difficult to compile a complete analysis of all cyclist crash data due to the lack of reporting of crashes. Many crashes involving cyclists will not be reported as there are no injuries resulting from the crash and the level of property damage is low. Locations where such incidents occur can be difficult to identify.

Between 2009 and 2014 cyclists have accounted for 3.3 per cent of road deaths and about 7.7 per cent of serious injuries throughout South Australia. In 2014 cyclists aged under 16 years accounted for 6.8% of serious injuries and fatalities with 65% of serious injuries and fatalities being aged between 30 and 59 (*Source: 2014 Road Fatalities and serious Injuries in South Australia, DPTI).* This is a significant change from previous analysis where those aged under 16 accounted for the greatest proportion (almost half) of those seriously injured (*Source: The Australian Transport Safety Bureau, 2004*).

Figure D.1 in Appendix D shows the reported crashes in the City of Campbelltown involving cyclists that resulted in an injury or significant level of property damage. A total of 120 crashes involving cyclists were reported within the City of Campbelltown between 2009 and 2013. In the 2007 Strategic Bicycle Plan 64 cyclist accidents were recorded between 2000 and 2005. This is an increase of 56 crashes.

Appendix D includes a closer analysis of crash types and locations within the City of Campbelltown.

4. Bicycle Network

4.1 Introduction

The main aim of the proposed local bicycle network is to create an integrated network which links all the activity centres within the Council area and also links to the major exit points to the surrounding council areas.

The rationales behind the Local Network were:

- Local access to existing Bikedirect network
- To break the Bikedirect network into smaller blocks for easier, flexible and convenient access
- Comprehensively linking all the activity generating land uses such as commercial centres, educational centres, institutional centres
- Provide a safe and convenient network for recreational cycling
- Provide cycle access to certain areas within the Council which are not served adequately by the existing Bikedirect network such as some north eastern and eastern neighbourhoods located near Gorge Road
- Promote cycling as a viable mode of transport.

Land use plays an important part in the structuring and networking of any transport activity. More specifically, there are activity generators which can be identified to provide a logical base for understanding and explaining movement patterns.

The main generators of bicycle traffic are typically:

- Educational centres including schools, colleges, universities:
- Recreational centres including sports fields, clubs, tennis courts, parks:
- Commercial centres including neighbourhood centres, local shopping precincts:
- Institutional centres such as civic centres and libraries
- Commuter routes through the Council area; and
- Recreational/leisure routes (i.e. Linear Park).

The proposed City of Campbelltown bicycle network will comprise a range of routes from local streets with advisory treatments through to on-road separated bike lanes, including potential routes on arterial roads to provide a network linking land use generators and likely destinations.

This will also include identified arterial road crossing locations or upgrades to ensure that the arterial road network does not compromise the overall connectivity and safety of the bike network.

The proposed network also identifies a series of locations for the implementation of suitable levels and format of bicycle parking, commensurate with the anticipated level and nature of demand.

The City of Campbelltown bicycle network should be incorporated into development plans and planning conditions to encourage and cater for infrastructure that supports and encourages safer cycling. Future asset renewal, LATM studies and development applications should continue the improved provision of infrastructure and facilities for safer cycling, by addressing the relationships between land uses and the nature of the road environment in these areas.

The recommendations for the proposed bicycle network are shown in Figure G.1 in Appendix G.

4.2 Bicycle Facilities and Treatments

4.2.1 *Route Treatments*

The hierarchy of routes defined as part of the Bike Network requires some form of road treatment to allow cyclists safe and easy access on the network. As most streets that form part of the secondary/local bicycle network have low traffic volumes and speeds, on road bicycle lanes are not necessary, because it is considered that cyclists and motorists can share the road. However, some form of advisory treatment, as well as signage, is still desirable to indicate to cyclists that they are on a cycling route and to remind motorists that cyclists are likely to be present.

The provision of appropriate crossing treatments along the local bicycle network should also be considered. Depending on the nature of the road to be crossed, a simple median refuge may be sufficient (which may also be shared with pedestrians) for a local or collector road, through to a controlled and prioritised facility to assist with crossing arterial and busy collector roads.

Appendix F provides more detail and examples of all the different potential bicycle lane and path treatments that can be considered for implementation within Australia.

In general, Australian Standards and the Austroads Guide provide principles and technical details regarding the treatments detailed in Appendix F. Shared use path options require the needs of pedestrians to be considered as well as cyclists.

The road width requirements for the most commonly used on-road bicycle treatments are also identified in the Austroads Guide. The road widths identified are typically considered as minimum with the lanes for traffic recommended at being 3.0 metres wide. Where traffic volumes and speeds are low or desired to be reduced, lane widths below 3 metres can be safely used where cyclists and vehicles will share the lane.

Where future changes to the road network are identified then subject to feasibility, use of existing road width with advisory treatments or bike lanes is preferred as the most cost-effective means for providing for cyclists on roads. If safe cyclist provision cannot be achieved using the existing road width, then options for providing additional road width (and what this can achieve) should be examined.

Options to gain additional road width are:

- Prohibit parking on one side of the street
- Prohibit parking on rarely used stretches of the street: adjust lane positions (with line marking)
- Indent car parking
- Remove a traffic lane
- Make a two-way road one-way with a contra-flow bicycle lane or contra-flow cycling permitted through advisory treatments on low speed roads
- Reduce width of the median island.

Road widening is not generally cost effective unless provided as part of a road upgrade or reconstruction. The requirements and provision of facilities for cyclists and pedestrians should be considered in any road reconstruction or upgrade project.

4.2.2 *Bicycle Facilities*

The provision of mid-journey and end of trip facilities will support cyclists and encourage more people to cycle. These facilities should include provision of secure bicycle parking, drinking fountains, signage and toilet facilities in appropriate locations.

Activity generators which can act as transit hubs could be provided with bike lockers or cages, where bikes can be locked safely.

In order for the Bike Network to be safe and secure, appropriate street lighting should be available to ensure that bike paths can be used after hours, and to promote a safer and secure environment.

The provision of supporting facilities for cyclists is discussed in more detail in Section 5 of this plan.

4.3 Local Street Network

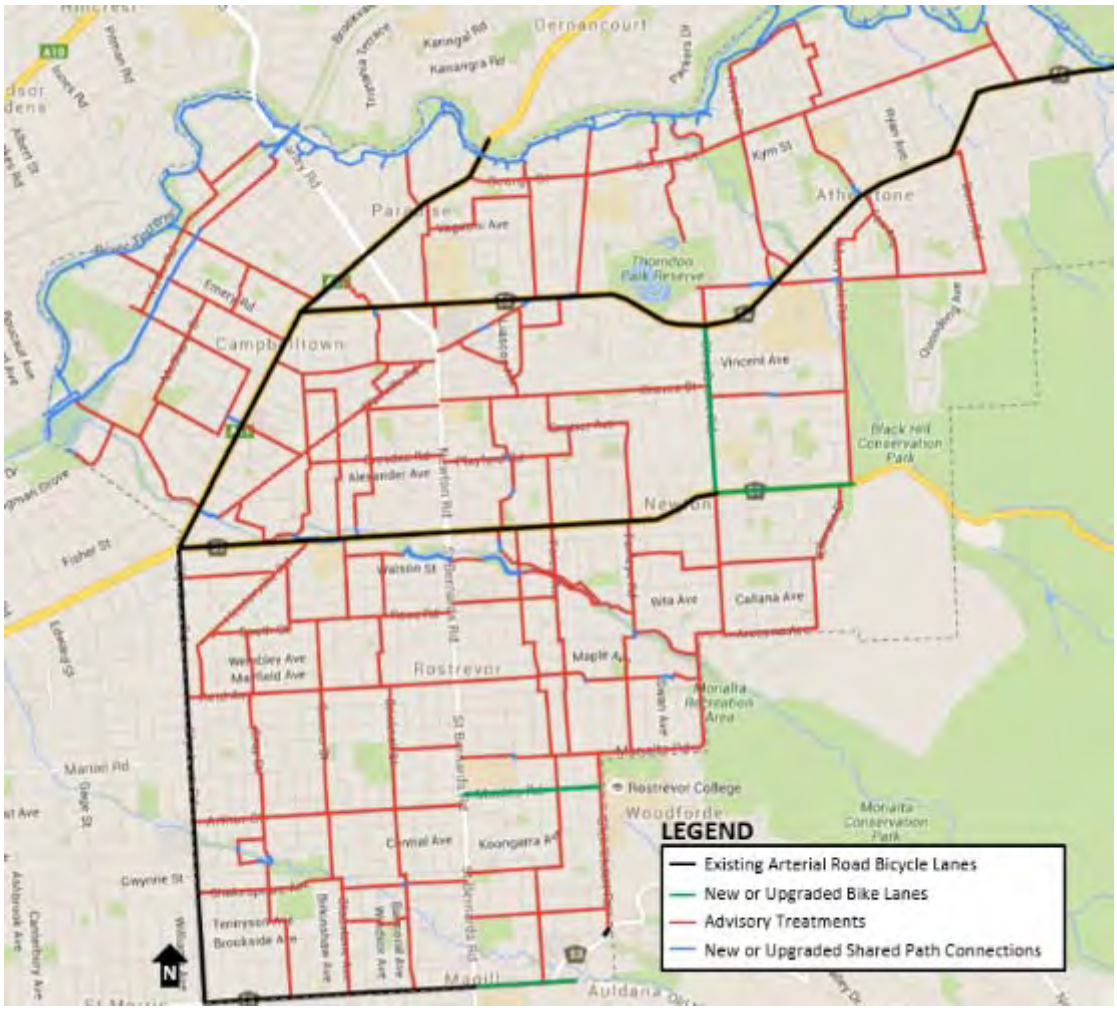
The 2007 Strategic Bicycle Network identified a proposed network for implementation as an area wide network, extending the coverage of the existing Bikedirect network providing cycling routes for regional and local access. This proposed network has been reviewed and is recommended for implementation within the City of Campbelltown.

Local routes were identified and assessed based on various criteria namely:

- Average Speed of vehicles on the street
- Average daily volume on the street
- Number of crashes on the street
- Strategic location of the street in context with the overall bicycle network.

The recommendations for the proposed local bicycle network, including off street bicycle routes, are shown on Figure 4.1 below and discussed in the following sections. The route recommendations are discussed in more detail in Appendix G.

Figure 4.1: Proposed Bicycle Network



(A larger version of the above Proposed Bicycle Network figure is included as Figure G.1 in Appendix G)

The above proposed bicycle network map highlights two particular gaps on the network:

- **Thorndon Park:** No route through Thorndon Park is recommended as currently cycling is not permitted within the Park. Routes have been identified to provide access to the park by cyclists. This does however result in a gap in the network in this area, which should be considered as part of reviews of the Thorndon Park Master Plan.
- **Magill UniSA Campus:** No route is designated through the UniSA Campus between St Bernards Road and Lorne Avenue, however it is noted that there is pedestrian access through this route, creating an informal cyclist link across the campus. Council should seek to formalise agreement for cyclist access through the University campus.

4.3.1 *Local and Secondary Streets*

The local and secondary streets that make up the proposed bicycle network include streets with very low traffic volumes and streets with high traffic volumes. As such the proposed bicycle network considered the most appropriate treatment for the existing traffic volume and speed environment in each street.

A number of roads that form part of the existing and proposed bicycle network were identified with traffic volumes and 85th percentile speeds that would indicate a requirement for bike lanes, as per Figure 3.2. However, many of these roads would not be able to accommodate bicycle lanes without significant removal of parking.

The available road reserve width may not allow for the implementation of bicycle lanes, and as such traffic calming measures (combined with advisory treatments) may be the most appropriate and suitable treatment to provide a safer cycling environment. Further monitoring of these streets with traffic calming treatments is advised to ensure low enough speeds are provided for a safe cycling environment.

Advisory treatments are recommended for all other local streets. These treatments will signify that the street forms part of a bicycle route, warn motorists to expect the presence of cyclists on these streets and provide direction for cyclists using those routes.

Those streets with speed environments above the current recommended threshold for advisory treatments will need to be monitored in the future and suitable treatments considered to create a more appropriate speed environment as the Bicycle Plan is implemented and cyclist numbers increase.

Table G.1 in Appendix G summarises the streets included in the local bicycle network with a recommended treatment that is considered most appropriate given the volumes, speeds, road configuration and widths.

Cyclist Friendly Traffic Calming Strategies

Traffic calming strategies to reduce speeds on roads where the differential speed between cyclists and vehicles is likely to be high enough to pose a risk to cyclists (i.e. streets with 85th percentile speeds over 50km/h) should be designed to cater for cyclists as well as to reduce vehicle speeds. Traffic calming devices that may be suitable for streets on the local bike network and should be considered on the streets outlined in Table G.1 (Appendix G) are as follows:

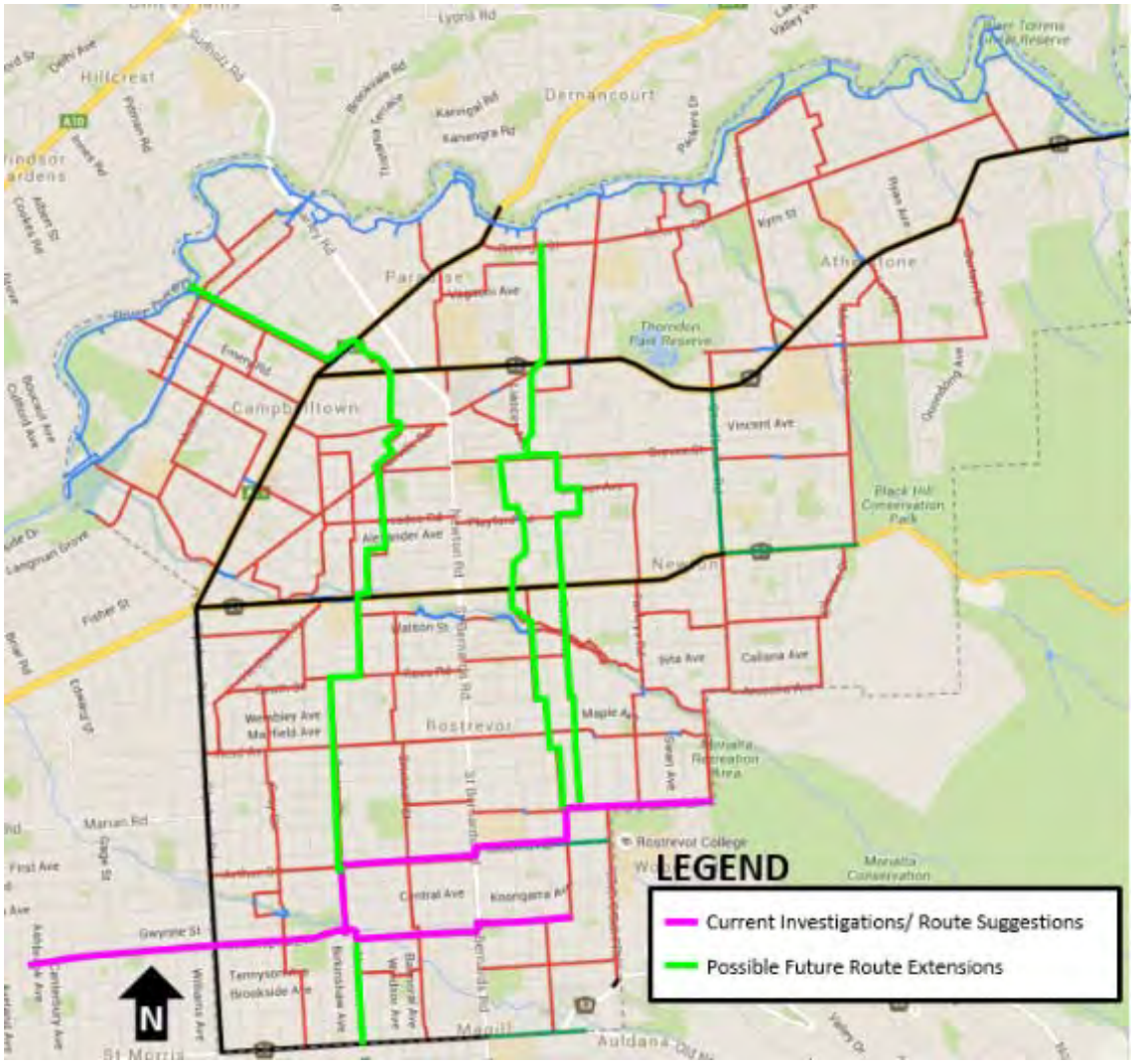
- Speed cushions
- Road humps which do not extend to kerb to allow cyclists to bypass them
- Raised intersection or mid-block tables
- Road narrowings with bicycle bypass lanes

- Kerb build outs to the edge of the bicycle corridor to reduce the visual perception of road width
- Distinctive pavement treatments; and
- Median refuges that do not impact on the bicycle corridor.

4.3.2 *Bicycle Boulevards*

The Council should continue to work with the Department of Planning, Transport and Infrastructure, the City of Norwood Payneham & St Peters, and the City of Burnside to implement the planned citywide bicycle boulevards within the City of Campbelltown. Currently an east to west route is being investigated on Shakespeare Avenue and Church Street, with a potential alternative on Arthur Street and Moules Road as shown on Figure 4.2. Possible future north to south routes are also highlighted on Figure 4.2 for investigation under this project.

Figure 4.2: Future Bicycle Boulevards through the City of Campbelltown



4.3.3 *Sections of Shared Use Paths*

Shared Use Path (SUP) facilities are required in some locations to provide connectivity within the network. Many of these locations are existing footpaths that may require upgrades or signage to be formal SUPs as part of the bicycle network. The locations

where SUP connections require further investigation are shown on the network map (Figure G.1) as well as in more detail in Appendix G.

Further SUP connections may be required as part of off street bicycle route connections and arterial road crossing treatments.

4.3.4 *Off Street Bicycle Routes*

The proposed bicycle network includes several off street bicycle routes. These include:

- **Linear Park**
  Shared use pedestrian and cycle path generally runs on both sides of the River Torrens along the northern boundary of the City of Campbelltown. Issues with lighting and wayfinding signage should be addressed through the River Torrens Linear Park Coordinating Committee as part of the management and upgrades to Linear Park. Signage upgrades should be integrated within the Councils proposed Wayfinding Strategy to be developed as recommended by the Pedestrian Access and Mobility Plan.
- **Third Creek Trail**
  3.2km of walkways connecting to Glynburn Road and Magill Road, recommended maintained and upgraded as per Chain of Trails Master Plan as a walking route and not identified as a bicycle route. Exception of the proposed bridge connection between Moore Street and Freeman Avenue. This bridge should be a shared pedestrian and cyclist facility with connecting shared use paths.
- **Fourth Creek Trail**
  6 km of walkways, in a northwest – southeast orientation between the River Torrens/ Linear Park and Morialta Recreation Area. The route offers significant opportunities to be upgraded as a cycling route. It is considered that in many locations, a suitable route can be developed in close proximity to Fourth Creek using advisory treatments on adjoining streets, except for three sections that will require Shared Use Path connections. In the longer term, proposed upgrades to paths and new sections of paths (including new bridges) could be designed to be suitable as an advisory or formal Shared Use Path for pedestrians and cyclists.
- **Fifth Creek Trail**
  4.4 km of walkways, in a northwest – southeast orientation between the River Torrens (Linear Park) and Black Hill Conservation Park. It is recommended that the trail be implemented as a pedestrian oriented trail as identified in the Chain of Trails Masterplan. At the northern end of Fifth Creek, advisory treatments along Tracy Avenue and Heather Court will parallel Fifth Creek and provide local bicycle connectivity to Linear Park.

Each off street bicycle route is discussed in more detail with proposed treatments in Section G.3 of Appendix G.

In addition to the formal off street routes, around schools (primary schools in particular) high levels of footpath cycling could be expected. Even where the local streets carry very low traffic volumes, most children would be expected to cycle on the footpaths. As part of the bicycle network improved footpaths around schools in locations of high pedestrian and cyclist volumes will create a safer cycling environment for young cyclists, as well as other less confident cyclists.

With the changes to cycling laws from 25 October 2015 cyclists of all ages are allowed to ride on footpaths. Footpath cycling therefore allows less confident and inexperienced cyclists to cycle where they feel safer. Where off street footpaths are noted in the Bicycle Plan to be included as part of the bicycle network they are marked for upgrade

to a signed and appropriate Shared Use Path facility, with appropriate widths for shared pedestrian and cyclist use.

4.4 Arterial Roads

Arterial roads are the responsibility of the State Government, Department for Planning, Transport and Infrastructure (DPTI). This includes the routes that are identified in the Bikedirect network as main road cycling routes, which are all main roads through and bounding the City of Campbelltown area.

Main roads carry large volumes of higher speed and freight traffic and provide motorists with regional access. They are therefore (usually) direct, well maintained, well lit, form continuous routes, have priority over minor roads and are regulated at intersections with major roads by traffic signals.

The key characteristic that makes a main road a poor cycling environment is a lack of defined space. This is particularly important as cyclists are less visible than motor vehicles and it can be difficult for motorists to judge how much space is required for cyclists. In a high traffic volume, high speed environment, crashes are more likely to result in injury than in local streets, as identified in Table D.1 (in Appendix D).

Main roads also form barriers for active transport activity, creating severance between suburbs and safe crossings from local streets. Where this movement may be prohibited for motorists, these barriers may be physical and prevent access for cyclists and pedestrians. A balanced approach is needed ensuring appropriate provision for the safety and convenience of cyclists and pedestrians around main roads.

The recent Government response to the Citizens Jury on cyclists and motorists sharing the road has confirmed the need for a detailed review of bicycle facilities on main roads. The provision of facilities on main roads, in particular “disappearing” bike lanes at intersections, is to be reviewed and priority recommendations made for the State Government to implement. This includes a number of the arterial roads within the City of Campbelltown.

Further to this, bicycle lane operating times on arterial roads should be reviewed for continuity of operation hours. Standardisation of bicycle lane operating times will aid drivers in being more aware of and less confused by when they can and can’t park in bike lanes, as well as aiding cyclists in understanding at which times vehicles are allowed to park in bike lanes. Opportunities for bike lanes to be permanently available should also be considered, particularly where cycling demand could be expected or encouraged outside traditional peak periods.

There are a number of locations where bicycle lanes disappear at intersections and reappear afterwards. Figure 4.3 shows an example of “disappearing” bicycle lanes within the City of Campbelltown, and Figure 4.4 shows an example of bicycle lanes only being present at a crossing, and not elsewhere on the road. With the exception of the short section of bicycle lane on Moules Road, all arterial road bicycle lanes in Campbelltown are time limited.

Figure 4.3: Bicycle Lanes on Montacute Road

Figure 4.4: Bicycle Lanes on Moules Road

Figure 4.5 shows the locations of all existing arterial bicycle lanes in the City of Campbelltown, including locations where bicycle lanes are discontinuous through intersections, as well as the recommended new bicycle lanes (on arterial roads or otherwise) included as part of the Proposed Bicycle Network (Figure 4.1).

Figure 4.5: Existing and Proposed Bicycle Lanes

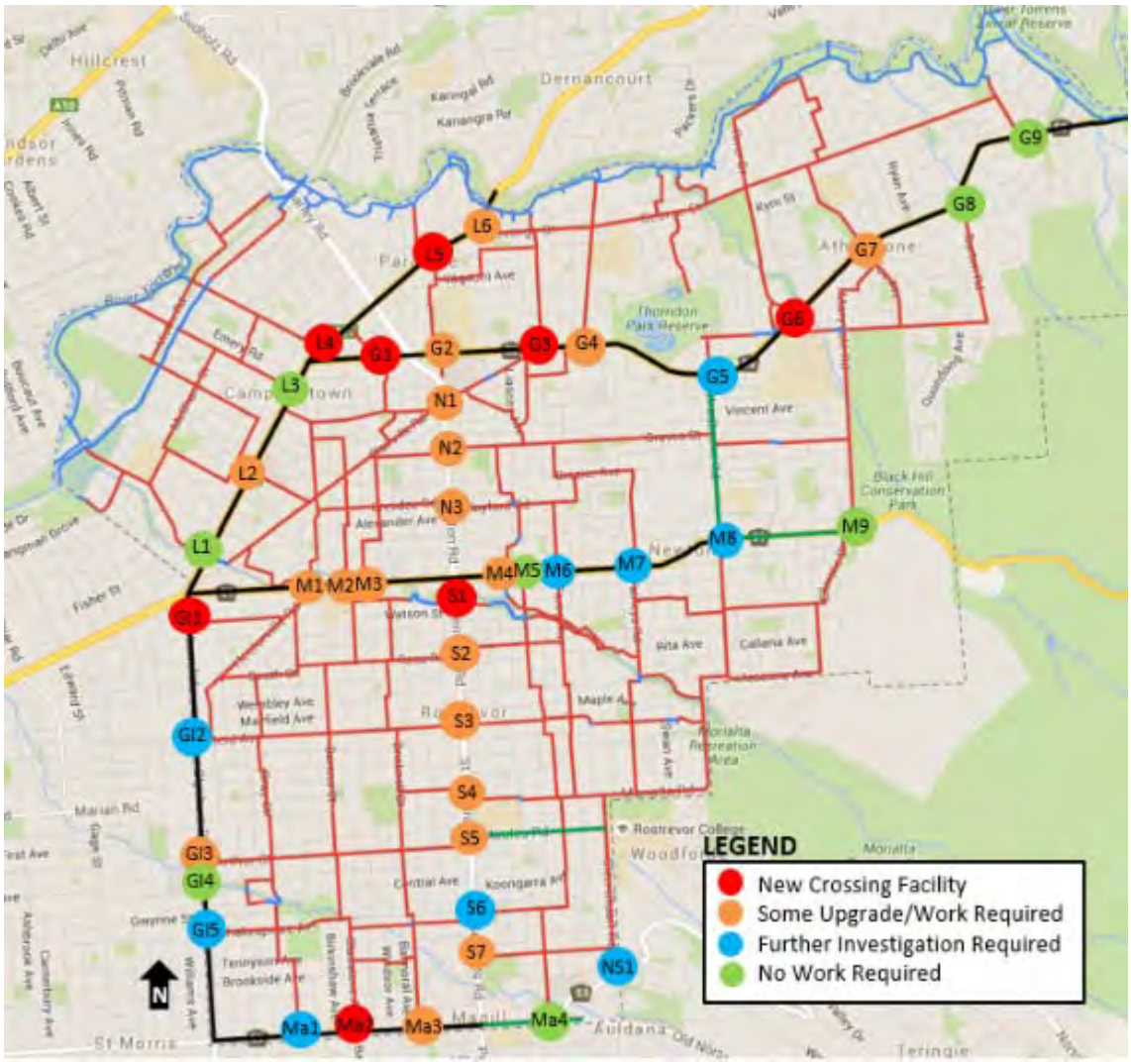
DPTI is seeking to rectify (where possible) the continuity of bicycle lanes on all the arterial roads within and bordering the Council area as a key action from the Citizens Jury. Furthermore, the Magill Village Master Plan highlights the continuation of the bicycle lanes on Magill Road to the east of St Bernards Road as a critical part of the Master Plan (as marked on the figure above). The carriageway of Magill Road will be narrowed to allow for a dedicated and uninterrupted bicycle lane. This will be implemented in conjunction with DPTI as part of the Master Plan.

The 2007 Strategic Bicycle Plan highlighted several different locations for crossing treatments to provide safer opportunities to cross Arterial Roads within the council area. Most locations affect both Council and DPTI roads and a collaborative approach is required with regard to approvals, funding and public promotion.

Based on the recommendations and further investigation of the 2007 Strategic Bicycle Plan, as well as investigation of other locations where the local bicycle network crosses arterial roads, Tables G.2 to G.8 in Section G.4 of Appendix G summarise the crossing locations and recommended treatments for the arterial roads within the Council area. Many of the crossing formats proposed would not be required by existing, confident cyclists, who will generally complete the crossings using the traffic routes. However, for the routes to be suitable for all cyclists, particularly children and older cyclists, safe crossing provision separated from traffic is considered essential.

The locations of the proposed bicycle network main road crossings are shown in Figure 4.6 below. The figure highlights where new crossing facilities, some upgrade or work (i.e. Shared Use Path connections) is required, locations where further investigation and option consideration is necessary, and where the existing facilities are satisfactory. The detailed list of recommendations is set out Section G.4 of Appendix G. In all cases, the actions will require the support and approval of DPTI.

Figure 4.6: Main Road Crossings



5. Supporting Facilities

5.1 Bicycle Facilities

The provision of suitable supporting facilities is key to influencing an individual's decision on whether or not to use a bicycle for a specific trip. Supporting infrastructure includes in particular bike parking, lighting and clear signage to enhance the use and safety of bicycle routes and trips.

Some facilities (street lighting, wayfinding signage etc.) will benefit both cyclists and other road or path users, including walkers and drivers. Signage of bicycle routes (particularly bicycle lanes and painted sharrows) can also reinforce the presence of cyclists and awareness to other road users.

5.2 Bicycle Parking

Secure bicycle parking is a critical factor in an individual's decision whether or not to use a bicycle. If safe and secure bicycle parking is not available, other means of transportation will often be substituted. Suitable bicycle parking should be located at all major destinations for bike trips such as commercial areas and schools. For the most part these are provided at major centres throughout the Council, but are lacking at smaller centres.

As a longer term proposal, all new commercial and office developments and redevelopments, as well as high density, multi-occupancy residential developments, should be required to provide bicycle parking and access for bikes as a mandatory measure.

Activity generators which can act as transit hubs could be provided with bike lockers or cages, where bikes can be locked safely. This would encourage cycling to public transport hubs, particularly where cycling the full journey to a destination is (or is perceived as) a long distance. One of the principal Transit Hubs is the Paradise Interchange which should be reviewed for the provision of lockers, cages and cycle racks.

Figure H.1 (Appendix H) identifies major activity centres to guide existing and proposed locations for supporting bicycle parking.

The locations within shopping areas, council facilities, schools, reserves, ovals, parks and transport hubs shown as Activity Generators on Figure H.1 should be investigated to locate secure, visible and preferably sheltered bicycle parking appropriate to the nature of the destination. Table H.1 (Appendix H) distinguishes between the following locations:

- existing bike parking that is considered satisfactory
- additional or upgraded bike parking is at least desirable
- bike parking is required where none is currently provided

The majority of these activity generators are connected to the existing or proposed bicycle networks but few of them have bicycle infrastructure, such as bike racks or lockers. The presence, quality and quantity of the bicycle parking at schools has not been investigated as it is not generally visible from the public road network. However, all schools are assumed to have at least a basic provision.

Cyclist parking can be categorised into three types:

i All day parking, typically for employees and students
ii Medium-term/part-day parking, typically at public transport stations; and
iii Short term parking, typically in shopping areas and other short-stay destinations.

Longer term parking requires a high level of security to prevent theft and include areas that have a locked gate and rails for individual parking and locking internally. Individual parking rails are adequate for short term parking.

5.3 Development Plan Requirements

The Council's current Development Plan specifies several Principles of Development Control relating to the provision for cyclists which are reproduced in Section H.2 of Appendix H.

The Development Plan requirements would only cover new developments and therefore Council should seek to engage with existing developments, and in particular large employers, to encourage voluntary arrangements to provide adequate bicycle parking as well as changing facilities, showers, lockers etc. In many cases grants are available towards the provision of such facilities.

The Development Plan sets out requirements for the provision of bicycle parking within the Suburban Activity Node Zone and the Urban Corridor Zone in *Table Cam/3*. The bicycle parking rates specified in *Table Cam/3* only cover multi-storey residential, office, shop and tourist accommodation uses, and only within the aforementioned two zones.

Consideration should be given to broadening the areas where these bicycle parking rates are applicable. Furthermore, providing rates for different types of developments (e.g. recreation, schools, medical facilities, cafes etc.) should also be considered. The Austroads Guide provides recommendations on suitable levels of bike parking for a wide range of land uses (Austroads Guide Appendix H, page 165).

5.4 Lighting

In order for the Bike Network to be safe and secure, appropriate street lighting should be considered. Good lighting levels enable bike paths to be used during hours of dark and promote a safer and secure environment.

This provision is of greater importance in local streets where cycling on the footpath is now permitted. Lighting levels should at minimum be adequate for cycling at dusk in the non-daylight saving months, to support cycling home after work. Furthermore street lighting can improve the visibility of cyclists and in particular pedestrians on the footpath or street.

Solar lighting could be considered as a more environmentally sensitive lighting method where traditional street lights are not available or appropriate (e.g. sections of Fourth Creek, links to/from local streets and Linear Park).

5.5 Signage Strategy

5.5.1 *Directional Signage*

The advisory treatments are generally recommended to use the "sharrow" format (shown in Figure 5.1) as the majority of the routes require a number of changes in direction at local street intersections, for which the arrows are ideally suited in providing directional assistance. Sharrows should be complimented by destination signage to direct cyclists where there are alternative destination opportunities, including at arterial road crossings.

Figure 5.1: Example of Sharrow Treatment

Another simple and effective route signage option is to paint bollards an identifying colour (linking to maps of that route) so there is an easy and visual trail to follow. This is anticipated to be trialled on the Geoff Heath Bike Loop in Lochiel Park, combined with ground stickers to assist wayfinding. Ground stickers can be an effective communication method of routes and destinations for off road shared use paths.

Ground stickers can also be used (as used in the Unley Council area on the Mike Turtur Bikeway) to remind cyclists to give way to pedestrians and use their bells when approaching pedestrians and other cyclists from behind.

5.5.2 *Destination Signage*

Signage indicating particular destinations (e.g. Local Suburbs, Fourth Creek Trail, Linear Park, Shopping Centres etc.) should be considered to provide further direction for cyclists travelling to particular destinations. Signage could be as simple as shown in Figure 5.2 with an arrow, bicycle logo, destination, distance and estimated cycle time to destination.

Figure 5.2: Example Bicycle Route / Destination Signage

This style of signage is visible but unobtrusive, and can generally be located on existing street sign poles, which is the logical place for cyclists (and motorists) to look for guidance. Critical locations for directional signage are where local routes intersect (i.e. a north-south route crosses an east-west route) and where there are key destinations on the routes (i.e. shopping centres, Linear Park, recreation areas etc.).

Furthermore, Council could consider sponsored destination signage for some locations (i.e. sponsored in full or part by private businesses). This signage could be similar to the example style presented above, with the use of a business or shopping centre name/logo as the destination. An example of brand specific signage is shown in Figure 5.3 below.

Figure 5.3: Example Sponsored Bicycle Route / Destination Signage

(Adapted from Cycle Route Directional Signage Example, Department of Infrastructure, Energy and Resources, Tasmania).

Sponsored signage should be limited to avoid over signing, and restricted to simple, clearly identifiable logos or business/shopping centre names. This type of signage should generally be placed at an intersection with an arterial road or where the bicycle route continues straight towards the destination. For example, signage to Firle Shopping Centre (Coles, Kmart etc.) could be appropriate at the intersection of Reid Avenue and Glynburn Road, directing cyclists south on Glynburn Road. Further investigation into appropriate locations for sponsored signage should be conducted in conjunction with individual businesses/centres.

The overall wayfinding and signage strategy to support the Bicycle Plan should be developed in conjunction with the Wayfinding Strategy that was recommended as part of the Pedestrian Access and Mobility Plan. In many cases the directional signage, particularly to access the Linear Park can be combined.

5.5.3 *Warning Signage*

The implementation of warning signage, particularly at significant road crossings, may be necessary at some locations to improve vehicle awareness of the likely presence of cyclists. In some locations where shared paths intersect with significant road crossings warning signage combining pedestrian and cyclist symbol may be more appropriate to indicate the presence of both pedestrians and cyclists.

The applicable cyclist warning signage is set out in the Australian Standards.

6. Bicycle Culture

6.1 Safe Cycling around Schools

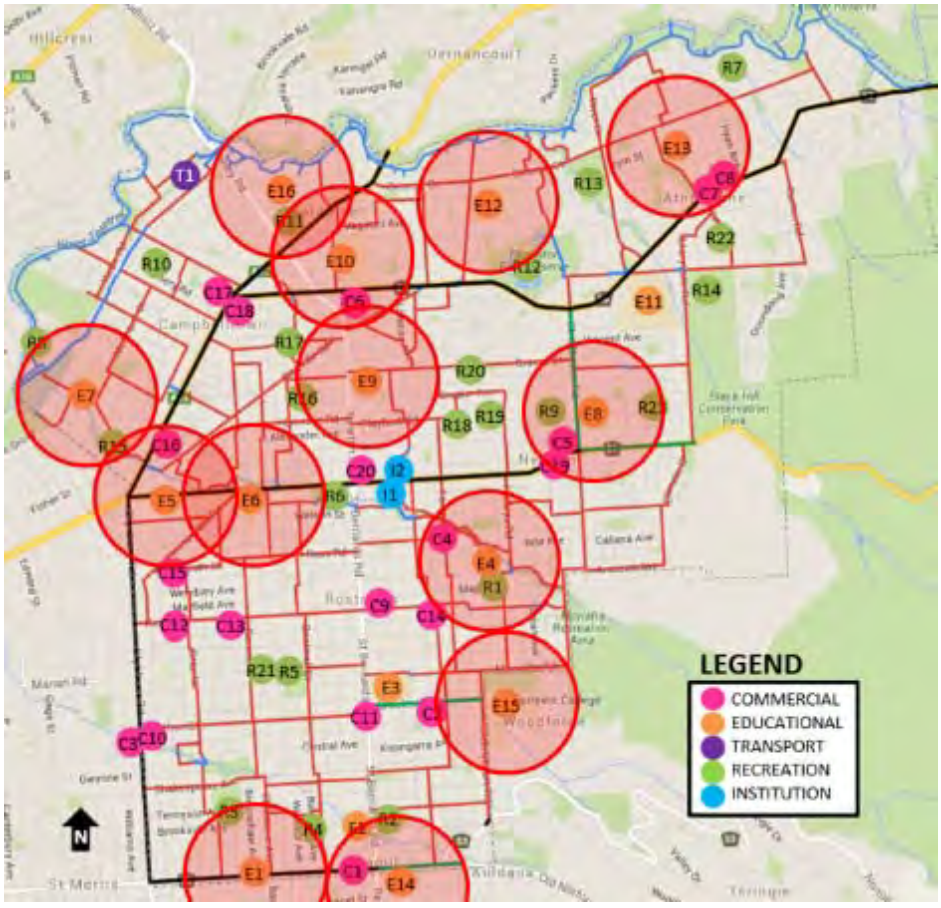
6.1.1 *Cycling on Footpaths around Primary Schools*

School children, particularly primary school children, need special consideration in the provision of safe, preferably off-road, routes and crossing points. The provision of bicycle facilities around schools will improve access opportunities and encourage more cycling. Unless the local streets carry very low traffic volumes, notwithstanding the presence of bike lanes or advisory treatments, most children would be expected to cycle on the footpaths.

Footpaths around schools (primary schools in particular) should therefore be of appropriate width and quality to facilitate young cyclists. Where possible, the local street environment around schools should cater for young and inexperienced cyclists by encouraging low vehicle speeds. A review of footpaths and speed environments within a 500m radius of all primary schools (shown on Figure 6.1) should be completed to develop an improvement plan. For some schools, this review should be conducted in conjunction with adjacent council areas.

Improvements to footpaths may include provision of a sealed footpath, repair of existing footpath and footpath widening. A minimum width of 1.5m should be provided, increasing to 2 or 2.5m closer to the school (subject to suitable width being available) where a higher number of pedestrians and cyclists would be expected. Subject to the layout of individual schools, separation of pedestrian and cyclist access routes is also desirable.

Figure 6.1: Primary School Safe Cycling Review Locations (500m Radius)



In the future this radius could be increased to 1 km, particularly if the level of demand for walking and cycling can be shown to extend beyond 500m on particular routes. Furthermore, as footpath cycling is now legally permitted (unless otherwise signed) improvements should be extended to high schools within and adjacent the Council area, as well as adjacent highly used commercial and recreational areas such as shopping centres where high numbers of pedestrians and footpath cyclists may be expected.

The catchment area for students for each school should also be taken into consideration when identifying key areas for footpath upgrades.

6.1.2 *Exemplar Cycling School*

Council has an opportunity to work with a local school as a case study for increasing cycling and creating an exemplar cycling school. Ideally a case study school should start with strong existing active travel levels and a localised catchment area, to give a solid base to improve upon. Where there are many children already cycling to school footpath width improvements should be considered as above to allow for a safe environment and reduce potential conflicts.

There is particular opportunity to focus on increasing cycling levels to public primary schools, due to the localised catchment zone and likely interest (i.e. high school students are less likely to see cycling as ‘fun’ and ‘cool’). Schools that are already engaged in the Way2Go program and/or with other nearby routes and local destinations that would also benefit from an improved local walking/cycling environment are likely to provide the best opportunities. This could include East Torrens Primary School and Thorndon Park Primary School (E6 and E8 on Figure 6.1).

6.2 Behaviour Change

6.2.1 *Psychological and Cultural Barriers*

As well as the physical barriers on the networks there are also psychological and cultural perceptions that inhibit people’s ability to see cycling as a viable transport option. In many cases these barriers are not as significant as people perceive them to be and can be readily overcome with suitable information, education and training programs.

Research in NSW has identified four dominant barriers to cycling:

- The negative image of cyclists and cycling amongst non-cyclists;
- The perceived danger of cycling, and commuter cycling in particular, due to perceived or actual lack of safe places to cycle, and the fear of being hit by a motorist;
- The lack of facilities to store or lock up bicycles; and
- Little or no understanding or acknowledgement of the benefits of cycling.

This is supported by Heart Foundation and Cycling Promotion Fund surveys in 2013 aimed at helping women ride more. From over 1000 responses, over 75% cited greater concern of traffic speeds and volumes and 42% a lack of confidence. 80% of women would cycle more if there were more separated bike paths.

6.2.2 *Influencing Behaviour*

Whilst the provision of a connected network and attractive streets is a key part of increasing levels of cycling, the infrastructure needs to be supported by promotion, education and encouragement programs to make people aware of the opportunities available and the benefits that can be achieved.

The State Government Way2Go is a program collaborating with local councils and schools to encourage safer, greener and more active travel and focus on school travel routes within the local government area. The City of Campbelltown has previously been involved with Way2Go and should maintain a commitment to the program.

The development of wide ranging travel plans is now occurring at major employment sites in Sydney and Melbourne with the Macquarie Park and North Ryde Travel Management Association in Sydney a leading example that is achieving successful active travel and modal change. A significant destination with Campbelltown that may offer opportunities for a similar approach would be the UniSA Magill campus. Measures and actions that are typically implemented to support modal shift at these locations that would relate to cycling include:

- Identification of poor or missing infrastructure to support alternative modes (which would include bike lanes, routes and crossings);
- Develop a Bicycle User Group within the campus to encourage ride sharing and partnering experienced with less confident cyclists;
- Support for the purchase of bicycles and bicycling equipment through low cost loans or payment plans through salary payments;
- The provision of pool bicycles for use on local business trips and meetings;
- Implementation of safe, secure and covered bicycle parking; and
- The provision of suitable end of trip facilities including showers, change rooms and lockers.

Cycling related measures would typically be complemented by other programs such as changes to public transport routes and timetables, walking infrastructure, car sharing and parking management.

In the UK, research from the Cycle Demonstration Towns program showed that targeted infrastructure improvements combined with education and activity programs could achieve noticeable and sustained increases in cycling levels, including within groups that have traditionally been hard to engage and would derive most benefit. The 55+ age group was shown to respond particularly positively, where time is less pressured, the need to continue being active is heightened and the confidence and experience levels are likely to be low.

6.2.3 *Policy Support*

Significant changes in cycling activity have typically been achieved where the policy requirements are embedded throughout the organisation, with a high profile champion leading by example.

Since 2009, the City of Yarra has had a bicycle strategy that sets out a series of strategies to ensure that the existing network was developed and enhanced in a co-ordinated way, considering the needs of all potential cycling groups. Yarra now has a specific council policy that requires all council infrastructure works to include bicycle facilities, a policy which was voted for unanimously. The policy is concise, with its implementation managed by a “champion” officer who monitors its implementation across all council divisions. The implementation of the strategy contributes to Yarra continuing to have the highest level of non-car use for travel to work in Melbourne.

6.2.4 *Council Walking and Cycling Group*

Establishing a Council Walking and Cycling Group would allow for the input and consideration of the multiple facets of Council. The Group could monitor, review and advise on Walking and Cycling opportunities and outcomes for Council. The Group would provide a distinct point of contact for cycling projects, issues and opportunities

within the Council, and be useful for integrating cycling provision with other projects, events, maintenance and planning.

Furthermore, the Council Walking and Cycling Group could be developed with adjoining Council's and other external stakeholders to promote and implement joint walking and cycling infrastructure, advocacy and events.

6.2.5 *Safety Awareness*

As well as encouraging more people to cycle, there are also benefits in encouraging existing cyclists to cycle more safely and considerately. The provision of shared use paths can often give rise to conflicts between pedestrians and cyclists with cyclists travelling too fast and without due consideration for other path users. Regular "share the path" messages, signs and campaigns, supported by enforcement if necessary, should be use to encourage cyclists to be aware and considerate of all path users. An example of such signage in ground sticker format on the Mike Turtur Bikeway is shown on Figure 6.2 below. The Unley Council has also installed similar signage reminding cyclists to slow down.

Figure 6.2: Give way to pedestrian signage on Mike Turtur Bikeway

The shared path campaigns should also ensure that pedestrians are equally aware of the presence of cyclists and are observant, do not obstruct paths unnecessarily and ensure that dogs and small children are not in a position to run out in front of cyclists.

Similarly, on the roads, better awareness and co-operation between motorists and cyclists should be highlighted through promotion and education, although this is more likely to be at a State than local Council level. Correct understanding and observance of road rules relating to cyclists by both drivers and cyclists are key components of this, as well as improved infrastructure that enable the cyclists to remain within suitable width and well maintained bike lanes.

6.3 Events and Promotion

The promotion of cycling as a travel mode as well as for recreation through events can aid the mental shift to making cycling a more attractive option. Events can take many forms and include community events to mark completions of major new cycling facilities, or cycling promotion stands in conjunction with other community events. Activities such as bike training or taster sessions for adults or children, bike safety checks, route planning and lead rides could be included. The Tour Down Under has regularly passed through the City of Campbelltown and brings with it high profile cyclists, tourists (including avid cyclists) and the opportunity to tap into the community 'buzz' around cycling.

There are also many existing regular events that take place, including Bike SA rides and training sessions. These events should also be promoted through Council and regular reporting received from the organising groups to monitor the level of attendance, the motivators for attendance and how the attendees found out about the events, to inform and refine future promotion. The City of Salisbury partnered with Bike SA to develop the “Cycle Salisbury” program of introductory and training rides to encourage local residents to take up cycling for leisure or transport purposes. The rides program has won a number of awards and proved very popular with local residents (http://www.salisbury.sa.gov.au/Our_City/Community/Healthy_Living/Living_Well/Cycle_Salisbury). A similar scheme could be considered for Campbelltown.

Participation in events is a valuable measure of program success. Any events should be reviewed regularly through a monitoring strategy.

The promotion of cycling at non-cycling related events such as markets, craft fairs, library events and other community events should be done in conjunction with marketing strategies. For example, the promotion of local events (not just cycling related) should communicate availability of bicycle parking/facilities. This would be similar to events advertised as “dogs allowed” or “dog friendly”. Simply notifying of bicycle parking availability at the events location could be incorporated into different forms such as flyers, website pages, posters and Facebook posts. Directions to an event when travelling by bicycle could also be included.

The Unley Council flyer for the Unley Gourmet Gala for January 2016 (Figure 6.3) is an example of encouraging cycling to an event (food and wine event, albeit the day before the Tour Down Under stage), with vouchers for free smoothies offered to the first 200 cyclists at the event. This strategy can also be used to monitor cycling levels to events, as counting the vouchers handed out (or remaining at the end of an event) can give an indication of the level of cycling to the event.

Figure 6.3: Example of Cycling Promotion to an Event

A larger strategy could incorporate marketing events aimed at getting people to cycle to attend. This could include encouraging event organisers to sign bicycle facilities, provide additional convenient bicycle parking, and offer incentives such as reduced entry fees or free raffle entry. This is particularly relevant to events funded, supported or organised by the City of Campbelltown. Providing bicycle parking at events and encouraging attendees to cycle may also assist in alleviating car parking demand, for example at events such as the Campbelltown Moonlight Markets.

At some events, the opportunity could be provided for adults and children to try riding bicycles to test their confidence where they have not ridden previously or for many years. These short free taster sessions could be followed with structured lessons or local guided rides, which could be lead by organisations such as Bike SA, Ride a Bike Right, Heart Foundation or local cycling clubs. These options could be tailored to suit tourists (local, national and international visitors) wishing to give cycling in Campbelltown a go, and could be done in conjunction with bike hire opportunities.

6.3.1 *Social Rides*

A social ride scheme (such as Cycle Salisbury mentioned above) is a great way to encourage social, recreational cycling. A social ride scheme requires a 'champion' (potentially a member of the Council Walking and Cycling Group) to organise and oversee regular rides. Social ride groups generally operate from an advertised start location at an advertised time, and then follow a route led by a ride leader. People who wish to attend would be anticipated to make their own way to the ride location, and should be encouraged to cycle to the organised ride start point where possible. Social ride groups can be aimed towards leisure cyclists of all ages, and rides should follow locations where inexperienced and unconfident cyclists will feel safest such as shared use paths or very quiet back streets.

Rides could be conducted along the River Torrens using Linear Park's shared use paths, or along Fourth Creek with the implementation of the recommendations of this Bicycle Plan, as suitable (generally off road) leisure rides. Loop routes included in the "*Life looks brighter outside*" pocket guide to Fourth Creek Trail developed by the Campbelltown Opal team includes loops that could be used for group or family rides.

6.4 Marketing and Education

The availability of cycling information and maps on the Council website should be considered a priority, as ease of access to information forms a valuable part of encouraging interested parties. A mobile app could be used to provide route information, however should be considered in conjunction with the broader Adelaide bicycle network.

Bicycle Network maps, showing distances, routes and destinations, should be located at major commercial centres, clubs, churches, sports fields, schools and bus stops, similar to the South Parklands signage shown on Figure 6.4 below. Maps should be provided free of charge at the Council chamber and at libraries and sports clubs. This may encourage people to cycle as a transport mode as they would be better informed about the local network and the various linkages. This would also help people in planning their trips in advance.

Figure 6.4: South Parklands wayfinding signage example

The benefits of cardiovascular exercise are widely documented and 30 minutes of low intensity exercise per day reduces the risk of heart attacks and strokes and increases a feeling of well-being. Cycling is an ideal means to exercise and commute. The health benefits of cycling should also be promoted on route literature.

Council should also monitor visits to the cycling pages of the Council website and downloads of relevant cycling maps from the website to gauge the interest in cycling as part of a monitoring and evaluation process.

Council should establish a communication opportunity for reporting comments in relation to cycling, identifying specific locations of concern and poor provision through the Council website and in writing. A website portal should provide an opportunity for people to specify locations on a map where concerns are raised, as well as providing detail of the plans for future upgrades within the Council area.

6.4.1 *Marketing Programs*

'I Bike I Like' Campaign

'I Bike I Like' is a Government of South Australia Facebook page with around 2,500 'likes'. The page links to the Department of Planning, Transport and Infrastructure's 'Cycle Instead' *Bikedirect* journey planner and provides updates on recent infrastructure changes and future plans and events relevant to Adelaide cyclists.

This page should continue to be used to promote events and education programs, route upgrades and changes into the future as an ideal platform for communicating with a younger internet based generation.

6.4.2 *Education Programs*

OPAL Bike Skills at Campbelltown Leisure Centre

OPAL Campbelltown supported 'Ride-a-Bike Right' to provide a learn to ride program for children 'still on training wheels'. The program generally runs over 3 days in a school holiday period and is free to attend.

School Programs

The Citizens jury flagged the potential to continue education in primary schools and high schools beyond the initial BikeEd program. The opportunities and implications for this are being considered through DPTI and Way2Go. It is considered that an ongoing program of bicycle education, including associated education for bike maintenance and repair, would be beneficial in maintaining interest in cycling as children get older and thereby increasing the rates of cycling to schools.

Learn to Ride Park

Providing a dedicated park with facilities to aid inexperienced riders in becoming more confident cycling on a road environment will not only aid cyclist confidence, but such a facility could also be used to provide existing OPAL Bike Skills programs at a potentially more suitable location.

The City of Tea Tree Gully has a Road and Cycle Safety Centre which has a miniature road network to assist in teaching children road safety skills including how to:

- Read traffic signals
- Walk across railway and school crossings
- Negotiate roundabouts and gutters
- Recognise traffic signs and line markings
- Cycle on roads or footpaths.

The Tea Tree Gully Centre provides instructors, loan bicycles and helmets and runs programs for school class groups, school holidays and birthday parties.

Developing a similar facility that provides a controlled environment for children (and potentially adults) to learn to cycle without the presence of vehicles would be a valuable asset to the community, particularly if provided in conjunction with other recreational facilities to form a local recreational destination within the Council.

Further research and assessment will be required, but the following locations have been identified as potentially suitable location for further consideration as a Learn to Ride Park:

- Between Lochiel Park and the Lochiel Park Golf Course a section of no-through road (shown on Figure 6.5) could potentially be used as a Learn to Ride site. It is an existing underutilised space providing connection to several walking and cycling trails including the River Torrens Linear Trial, the O-Bahn trail and the Fourth Creek Trail. It is close to Lochiel Park Golf Course with car parking, cafe and toilet facilities, and is easily accessible to/from Lochiel Park.

Figure 6.5: Potential Learn to Ride Site between Lochiel Park and Golf Course

- Alongside Linear Park there are a number of areas where the width of the corridor provides extensive grassed areas, some of which include trees. One such location is behind Campbelltown Memorial Oval at the end of Elsinore Drive where the area could be integrated in to the Oval masterplan. It is on the edge of the Council area but would immediately adjoin Linear Park.
- Dennis Morrissey Park provides another potential option for a central location for a Learn to Ride Facility. Dennis Morrissey Park is a small park located between the no-through road section of Binnswood Street and Montacute Road along Fourth Creek. Space may be limited at this location and there are no existing facilities that could be adapted and utilised.

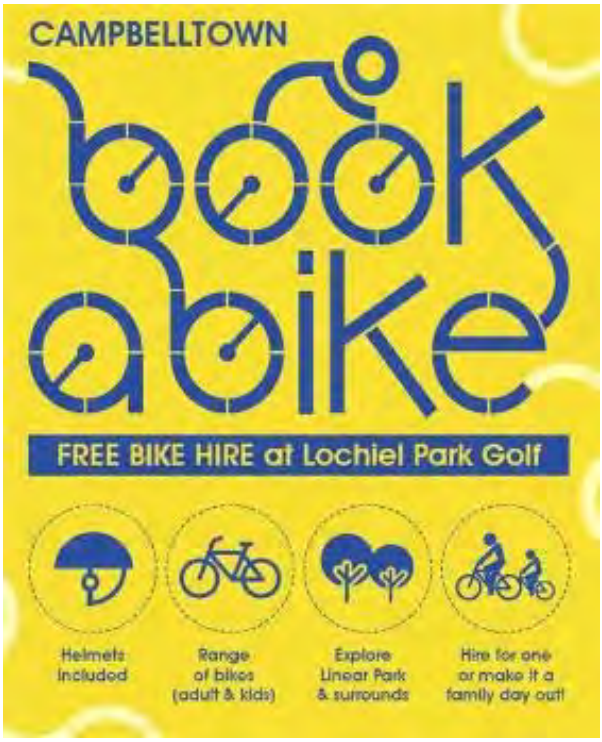
6.5 Encouragement

6.5.1 *Bikes on Loan*

Many people do not ride because they do not have cycles and perceive the start-up costs to be high. Around 25% of the City of Campbelltown's population is above the age of 60. Many people at this age might prefer not to spend money on cycling, but if loan cycles were provided at no personal cost, people may be then be encouraged to try cycling for the first time, which may then lead to further cycling. Cycle route maps and safety advice should be offered in conjunction with loan bicycles, and include instruction of appropriate bell usage, as well as the loan of high visibility vests and helmets.

Free bike hire including helmet has recently been implemented by Campbelltown City Council at Lochiel Park Golf for exploring Linear Park by bike. The 'Book a Bike' free bike hire service is available to the public with bikes suitable for both adults and children available. This pilot scheme could be expanded with locations such as the UniSA campus, Campbelltown Library etc. using existing manned sites to manage the free bikes. Figure 6.6 below shows the flyer containing the relevant information distributed by Council.

Figure 6.6: Campbelltown Book a Bike Flyer



There are other options for providing loan bicycles to residents or providing start-up assistance for those looking to purchase their own bicycle. The Council could provide bikes to be loaned to residents for free for up to a period of 3 – 4 days subject to identification and deposit from Council facilities such as the Campbelltown Library. The maintenance and the initial cost of bikes on loan could be borne by advertising. Large companies could be approached to bear the cost and in return, all loan bikes could have small advertisements which would be a marketing benefit to companies. The Brisbane 'CityCycle' bicycle hire scheme is currently sponsored by Lipton so all bikes bear Lipton logos as shown in Figure 6.7.

Figure 6.7: Example of Advertising on CityCycle Hire Bikes in Brisbane

Salisbury Council has successfully implemented a bicycle loan scheme as part of 'Twelve25' Salisbury Youth Enterprise Centre programs. The interest free loan scheme is designed to provide a loan for Salisbury Council residents aged between 12 and 25 that are low income earners or on Centrelink to purchase their own bicycle, helmet and lock. A similar monetary loan scheme could be considered in the City of Campbelltown to encourage bicycle ownership levels to be increased, particularly for students who may otherwise not be able to afford a bicycle of their own.

6.5.2 *Signage*

The use of the recommended pavement logos and sharrows provides localised navigational assistance to cyclists to ensure that they remain on the recommended route. These would typically be placed every 50 to 100m according to intermediate intersections and changes of direction. They should be supported by local directional signage at all locations where paths diverge or different destinations are available. For example at the end of each section of the bike network there should be directions to the nearest suburb or activity generator, showing cycle time and distance. This would make trips more convenient and less time consuming by flagging the most direct routes, potentially making cycling more appealing.

Recommendations on signage were outlined in Section 5.4. Caution is recommended to avoid over signing, and destination signage should only be used at decision points where sharrows on their own would be insufficient. The signage for the bicycle network should be developed in conjunction with the Council wayfinding strategy recommended as part of the Pedestrian Mobility and Action Plan and a strategy for signing Linear Park. This will ensure consistent route and destination signage across the Council area, which can readily be adapted for pedestrians and cyclists through the use of small logos on the signs.

6.5.3 *Infrastructure Design*

The opportunity exists for the design of a distinctive suite of bicycle infrastructure, for example bike racks, lockers and information boards, which could become easily recognisable symbols of the provision for cyclists. The visibility of cycling infrastructure in turn may encourage cycling, as well as increase the aesthetic appeal of facilities.

There is potential with infrastructure design to engage local artists, schools and community groups in the design and construction of infrastructure such as bike racks and lockers. For example, the bicycle rack shown in Figure 6.8 was designed by school students in conjunction with a local artist in Mannum. Figure 6.9 shows an artistic bicycle parking solution on Rundle Street in Adelaide as part of the Adelaide City Bike Art Trail. Art projects not only provide visual and memorable reminders of bicycle facilities, but can become destinations in their own right, encouraging cycling within the community to visit interesting bicycle related sculptures.

Figure 6.8: Artistic Bicycle Rack Designed by Students in Mannum

Figure 6.9: Artistic Bicycle Racks on Rundle Street

The City of Campbelltown could run design competitions or sessions for school children and/or local artists to design bicycle racks for implementation at Council owned locations such as libraries, parks, recreation centres etc. This allows for community engagement in the design stage, increased awareness of bicycle facilities through advertising competitions or design sessions, and highly visible and unique bicycle facilities within the Council.

Furthermore, artistically designed bicycle repair stations that could be installed at key locations (e.g. on key bicycle routes such as Fourth Creek and Linear Park or key destinations such as Paradise Interchange) similar to one installed on the Mike Turtur Bikeway shown on Figure 6.10. These stations are not only practical to assist bicycle repairs and adjustments (e.g. adjusting seat height or brakes) but can be designed in an appealing manner, similar to bike racks, promoting cycling while providing a service to cyclists.

Figure 6.10: Bicycle Repair Station on the Mike Turtur Bikeway

Other facilities such as information boards (e.g. on Fourth Trail or Linear Park to provide route information) and bicycle lockers (such as at Paradise Interchange) could facilitate artwork designed by local schoolchildren and/or artists.

7. Monitoring and Evaluation

7.1 Introduction

Regular monitoring should be used to evaluate the success of the Bicycle Plan during the implementation timeframe and should continue once fully established. The administrative and performance indicators recommended should be formally established and measured regularly, for each of the plans, strategies and actions. At a minimum, an annual review of the Bicycle Plan should assess what actions, infrastructure and programs have been implemented, the uptake and outcomes of these initiatives and recommend any changes for subsequent plans and future monitoring.

7.1.1 *Strategy Delivery*

When implementing a Strategy of this nature and over a long period of time, it is essential to monitor the delivery and actions of the Strategy. This ensures that the Strategy delivers against identified timescales and is meeting the vision and objectives. This review should be undertaken on an annual basis as a minimum to ensure the timely delivery of actions and that the outcomes are meeting the targets. This enables the strategy to be amended to reflect changes to priorities and timescales and to incorporate lessons learnt from early stages of the strategy. This will ensure that successful actions and outcomes can be transferred elsewhere and that less successful outcomes can be amended for future strategies and actions.

7.2 Infrastructure Usage

As a key objective of the Strategy is to increase the levels of cycling within The City of Campbelltown, suitable data should be obtained to enable regular and consistent comparison of infrastructure usage and cyclist volumes.

7.2.1 *Permanent Bicycle Counters*

It is recommended that bicycle counters should be included as part of new bicycle infrastructure works. The counters currently available can be used for shared use path or on road bicycle facilities (other than advisory treatments). Permanent bicycle counters installed in shared use paths monitor use of the shared use path network by cyclists and supplement the existing count locations available. As well as providing data on the level of cyclist use, this monitoring can also be used to assess the need for any future upgrades, for example to improve physical separation between cyclists, pedestrians and vehicles.

Installing permanent bicycle counters in new bicycle infrastructure provides a robust platform to demonstrate regular bicycle use and peak period demand and seasonal variation not typically captured by occasional counts. Cost-effective and unobtrusive counters are available with installation targeted at major cordon locations or near entry/exit points.

Permanent counters could be located along Fourth Creek Trail, for example near sections that may require upgrades with increased cyclist use. Similarly locations on Linear Park, particularly key links into the Council area could also be considered.

7.2.2 *Cycle Count Programs*

State and Council organised bicycle count programs have proven to be beneficial for monitoring infrastructure usage. Super Tuesday and Super Sunday count programs provide additional monitoring evidence on usage, although they can be subject to variations from weather conditions. It is recommended that the City of Campbelltown seeks to participate in these counts.

In addition to any existing permanent count sites, non-permanent count locations in The City of Campbelltown should be considered along popular cyclist routes such as Linear Park, Fourth Creek Trail (and others with known bicycle activity), around schools and identified popular routes of the local bicycle network.

DPTI records cyclists at all intersection counts which are undertaken. These can be used to inform cycle usage on major arterial bike routes and also the presence of cyclists on routes without existing bike lanes.

It is recommended that Council includes cyclist counts in any turning movement surveys that it commissions. A program of cyclist and pedestrian counts is also recommended for existing pedestrian/cyclist crossing facilities. This will assist in identifying locations where improved facilities may be justified, locations where the existing facilities do not meet desire lines, resulting in uncontrolled and unsafe crossing movements and locations where new facilities are required.

7.2.3 *Bicycle Parking*

The lack of end of trip bicycle parking has been identified as a barrier to cycling for many trip purposes and the Development Plan now requires new developments to provide bike parking, which will assist in addressing this over time. Monitoring the use of bike parking will assist in targeting new or expanded provision where it will be most used and ensuring that the Development Plan specifications reflect current demand levels and future growth, resulting in appropriate levels of provision.

Bicycle parking audits of existing council bicycle parking infrastructure should be conducted at least quarterly, in order to assess the use of the parking and inform the provision of additional bicycle parking facilities. When bicycle parking provision is observed to be at least 75% full on a regular basis, additional racks should be provided. Through consultation with major destinations and bike parking audits opportunities to increase provision can be identified. Areas with significant, observed bicycle parking demand should inform the future program of bicycle parking provision. A feedback opportunity should be provided to enable the community to identify locations where bike parking provision is required and would be utilised.

During audits, areas with abandoned bicycles should be noted. Abandoned bicycles should be ‘tagged’ for removal with a handlebar notice and removed within a fortnight.

7.3 Road Safety

DPTI collates crash data on traffic incidents in SA. To be reported, a crash must result in $500 worth of damage, lead to a police call out or a hospital visit. Analysis has shown that the reported bicycle crashes in the database generally result in a casualty injury, as most minor incidents are unlikely to result in a police call out or significant damage. As a result, crash blackspots in the database reflect areas of serious concern. The DPTI database should be interrogated regularly to establish bicycle (and pedestrian) crash blackspots in order to prioritise responses.

As minor incidents and near misses would not raise a crash record, online local cyclist forums can be used as a means of sourcing locations with high incidences of near misses and minor incidents, enabling a more thorough investigation to be undertaken.

7.3.1 *Traffic Volumes and Speeds*

It is recommended that roads identified with an 85th percentile speed over 50km/h in Section 3.5.2 undergo monitoring of speeds and volumes following the implementation of treatments outlined in the Bicycle Plan. Monitoring of speeds and volumes on these roads should identify whether the treatments outlined in this Bicycle Plan are appropriate. Those streets in Table C.2 (Appendix C) are approaching the threshold

where advisory treatments may not be appropriate given the combination of speed and volume data available. Further treatments to reduce vehicle speeds or provide separation between vehicles and cyclists may be required on some streets to provide a safer cycling environment, depending the advised treatment (Table G.1, Appendix G) impacts.

7.4 Participation

7.4.1 *Intercept surveys*

It is recommended to conduct intercept surveys with cyclists at major desire lines and activities regularly as well as following the launch of new infrastructure or routes. Intercept surveys could be held in conjunction with the established Super Tuesday or Super Sunday count programs. The results from the intercept surveys can be used to understand levels of new riders or riders attracted to the facility from a previous route, origins and destinations and any comments or concerns with the facilities on the route.

7.4.2 *Events*

Participation in events is a valuable measure of program success. All events that include some aspect of cycling participation or access should be reviewed regularly through this monitoring strategy. Sample indicators could be collected through registrations and confirmed through completed feedback forms in order to gauge participant response patterns. Given the gender imbalance between men and women in cycling participation, the monitoring strategy should gauge participation by women and children to differentiate if the target market is increasing.

7.5 Communications Plan

Reporting on the successes of the various initiatives and the increasing rates of cycling will assist council to leverage interest and funding for future bicycle projects. Council should establish a communication opportunity for reporting comments in relation to cycling, identifying specific locations of concern and poor provision. Assembling this anecdotal and evidence based data will identify locations with repeatedly raised concerns to prioritise further assessment and investment. Council should also monitor visits to the cycling pages of the Council website and downloads of the relevant Adelaide cycling maps from the website to gauge the interest in cycling.

7.6 Evaluation and Reporting

Results of monitoring activities should be reported regularly with subsequent dissemination of the activities and outcomes around wider Council teams and on external newsletters, website and local and social media outlets. Where data demonstrates performance, inform internal and external stakeholders regarding the outcomes, levels of bicycle use and areas of concern and report the response to successful programs.

Reporting on successes provides a positive news story to encourage others to investigate. Media outlets can be used to inform on future studies or locations for assessment to encourage further reporting in relation to those sites.

Monitoring should also inform evaluation strategies to assess less successful initiatives to increase future effectiveness.

8. Implementation Plan

Implementation of the Bicycle Plan is focused on developing three major areas;

i. Bicycle Network
ii. Supporting Facilities
iii. Bicycle Culture

Appropriate monitoring and evaluation underpins all three focus areas.

8.1 The Bicycle Network

Cycling networks must be considered during planning, design and construction of new or existing infrastructure. Education, promotion and encouragement then need to occur to support the provision of infrastructure and create a cycling culture in the community.

Itemised in the implementation plan are the following components of the Bicycle Network within the City of Campbelltown. This includes the local street network under the care and control of Council and the arterial roads and arterial road crossings under the control of DPTI.

8.1.1 *Bicycle Network Completion*

Details of the local street network routes were set out in Section 4.3 above. The majority of the local bicycle network has been identified for advisory treatments and as a cost effective measure could be suitable for implementation by the City of Campbelltown over a relatively short time horizon, which is understood to start from Financial Year 2016-2017.

There are a number of locations that will require connectivity, design, consultation, approval and funding processes that will extend over a number of financial years. The levels of priority should therefore reflect both the need for the scheme and the realistic timescales within which it can be achieved taking account of design, consultation and approval processes.

- High priority/timescale would be considered within financial years 2016-17 and 2017-18.
- Medium priority/timescale would be considered within financial years 2018-19 and 2019-20.
- Low Priority/timescale would be beyond financial year 2019-20.

Where possible and practical the local street treatments should be included in any road renewal or reseal projects, including advisory treatments (sharrows etc.), destination, directional and warning signage and other traffic calming treatments.

8.1.2 *Bicycle Network Priority*

Based on the current most popular locations for cycling activity, wider initiatives that are being pursued, particularly by State Government, and Council's own priority schemes, the following actions are recommended to be taken forward as the highest priority:

- Development of a bicycle route in conjunction with the Fourth Creek trail utilising on road advisory treatments where there are suitable adjacent roads, connecting shared use paths as required and road crossing implementation/upgrade as identified.
- Implementation of improved access to Linear Park and O-Bahn bikeway from the immediate local streets through advisory treatments, shared use path connections and directional signage.

- Development of Bicycle Boulevard network within Campbelltown City Council to connect to the proposed Norwood-Magill and St Morris Bicycle Boulevards being developed by neighbouring Councils and the State Government.
- Upgrade of the footpath network around primary schools to encourage increased levels of cycling from the local catchment areas.

The implementation plan should also retain sufficient flexibility to respond to opportunities or specific projects that would facilitate individual sections of the network. This could include road renewal/reseal projects, development projects and cycling related promotion and education activities, particularly if they can provide funding opportunities.

In addition to the above measures on the Council road network, Council should continue to advocate to and work with DPTI on the following:

- Increasing operational times for existing arterial road bike lanes.
- Completing missing sections of arterial road bike lanes, particularly around intersections.
- Development of an upgrade scheme at Norton Summit Road/Glen Stuart Road intersection as a black spot project to resolve the cyclist crash issue.
- Improvements to all arterial roads to improve safety for cyclists.

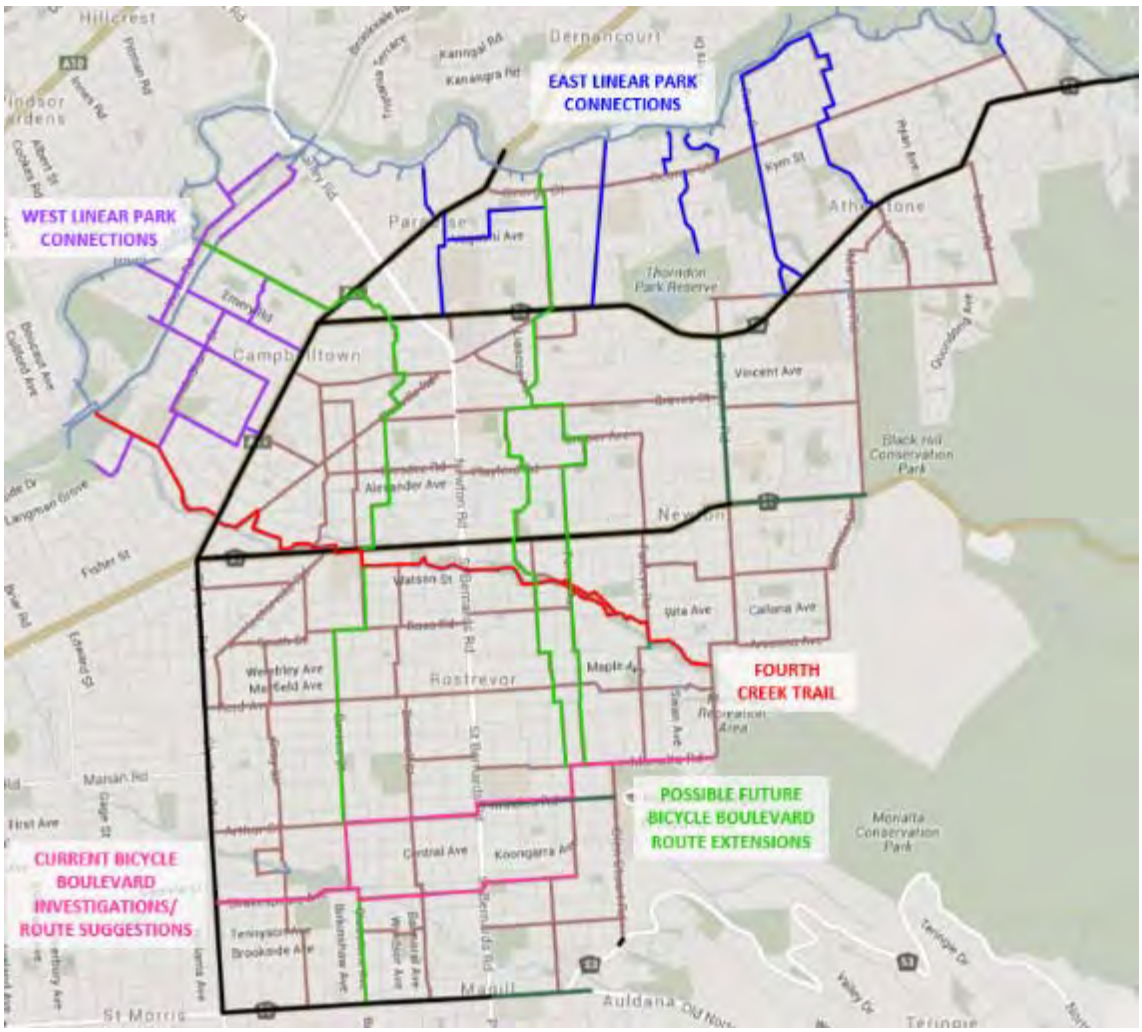
8.1.3 *Bicycle Network Priority Implementation*

As each of the above-listed network actions link to existing programs or projects with which Council is involved they have not been assigned any specific priority orders, and are all considered equal priority. This is discussed further in this section, relating to each action.

Figure 8.1 shows the sections of the network which are recommended as the initial priorities for Council, primarily using Advisory Treatments with some Shared Use Path connections.

Table G.1 in Appendix G highlights the streets priorities in relation to Figure 8.1. It is noted in Table G.1 that where only short sections of a street falls within a priority area (e.g. part of Fourth Creek priority) but the street forms a link to an activity generator or other completed part of the network it would be ideal to complete these connections at the time of the priority implementation.

Figure 8.1: Network Priority Implementation



Linear Park Connections

Figure 8.1 highlights routes that are considered priority for providing connections to Linear Park:

- *West Linear Park Connections*
  - Approximately 8.5kms of Advisory Treatment streets
  - 90m Shared Use Path connecting Lower North East Road (opposite Heading Avenue) to Deans Road
- *East Linear Park Connections*
  - Approximately 8kms of Advisory Treatment streets
  - Shared Use Path connection upgrade La Scala Court to Linear Park (upgrade existing 25m, 2m wide footpath link)
  - 20m Shared Use Path connection upgrade Schulze Court to Gorge Road
  - 75m Shared Use Path connection upgrade Brookside Road to Gorge Road

Generic cost estimates for advisory treatments and associated directional and warning signage would be between $8,000 and $12,000 per kilometre. The cost will vary according to the number of changes of travel direction, intermediate intersections, traffic volumes/speeds, existing signage location opportunities and integration with other projects.

Fourth Creek Trail

To facilitate Fourth Creek Trail as a cycling route, upgrades to the following would be considered high priority:

- Approximately 4.4kms of Advisory Treatment streets adjacent Fourth Creek
- Montacute Road crossing (crossing M1 discussed in Section G.4.2 of Appendix G)
- Lower North East Road crossing (crossing L1 discussed in Section G.4.2 of Appendix G)
- New St Bernards Road crossing (crossing S1 discussed in Section G.4.2 of Appendix G, and included in Chain of Trails Master Plan)
- Priority Shared Use Path connections/upgrades:
  - Shared Use Path upgrade connecting Leabrook Drive and Rostrevor Avenue
  - Shared Use Path upgrade connecting St Bernards Road and Binnswood Street
  - Shared Use Path upgrade connecting Clairville Road and Lower North East Road.

The upgrades to Fourth Creek Trail for it to be a suitable route for both pedestrians and cyclists are discussed in detail in Section G.3 in Appendix G, including maps, and discussion of longer term upgrades. All Fourth Creek Trail upgrades should be conducted as part of the Chain of Trails Master Plan, including cycling provision as mentioned above. The upgrade of bridge crossings and shared use paths should be assessed based on use by both pedestrians and cyclists.

Bicycle Boulevard Routes

The investigation and implementation of the Bicycle Boulevard routes (discussed in Section 4.3.2/shown on Figure 4.2) is considered a priority to implement sections of the network. The Bicycle Boulevard network in Campbelltown Council area is anticipated to form extensions of the Bicycle Boulevard network in the neighbouring Norwood Payneham & St Peters and Burnside Council areas, shown on Figure 8.2.

Figure 8.2: Bicycle Boulevards – Connections to Neighbouring Councils

The above measures would be expected to take between 3 and 5 years to implement, subject to internal and external funding availability and related Bicycle Boulevard project timescales. These would cover the high and medium priority timescales identified in Section 8.1.1 above.

Following completion of each of the above, additional adjoining sections of the overall bicycle network that have been identified can be implemented to gradually complete the overall network connectivity. Additional sections could be determined based on identified cycling activity and responding to specific opportunities (e.g. planned road maintenance or line marking).

School Footpath Upgrades

To support encouraging increased cycling activity to schools, Council should develop an upgrade program for the footpaths around local schools. This reflects both the change in cycling laws and the long-standing ability for primary school children to cycle on footpaths. It is recommended that this focuses on state primary schools as they are likely to have a largely local catchment and are more likely to respond to cycling opportunities. Council will need to identify a timescale for review and implementation which will cover a number of years given the number of schools within the Council area. Initial priorities based on existing activities, Way2Go engagement and other identified schemes are East Torrens and Thorndon Park Primary Schools.

Bicycle Network Priority

Table 8.1 summarises the timescales anticipated for development of the Bicycle Network priorities.

Table 8.1: Bicycle Network Priority

Actions	Timescale	Comments
Improvements to Linear Park	Ongoing	Path width and facilities with Linear Park Coordinating Committee
Access improvements to Linear Park	2-3 years	Advisory treatments and signage on local streets
Upgrade Fourth Creek Trail to bike route	As per Chain of Trails MP	Advisory treatments, upgrades to path widths, bridges etc.
Bicycle Boulevards	2-3 Years	In accordance with the priority route investigations and subject to funding availability and delivery of adjoining Councils sections
Implementation of appropriate treatments, signage and crossings as part of other Council improvements	Ongoing	During regular scheduled resurfacing, reline marking etc. incorporate Bicycle Plan treatments (as appropriate) during works
Improve arterial road crossing locations	Based on delivery of connecting network	In conjunction with DPTI
Improve continuous cycle lanes	TBA with DPTI	In conjunction with DPTI
Detailed assessment of Norton Summit Rd/Glen Stuart Rd intersection treatment	2 years	In conjunction with DPTI. Seek funding as a Bicycle Black Spot
Install permanent bicycle counter/s on Linear Park/Fourth Creek trail	2 Years	Regular monitoring of cyclist levels. Permanent bicycle counter/s on Fourth Creek installed when Fourth Creek Trail upgraded sufficiently
Improve footpaths and widths adjacent primary schools	Establish ongoing program	Footpath improvements should be considered in conjunction with school feedback as to locations of high walking/cycling demand.

8.2 Supporting Facilities

Table 8.2 summarises the timescales anticipated for development of supporting facilities that will support the use and development of the bicycle network.

Table 8.2: Supporting Facilities Priority

Action		Timescale	Comment
Prepare and Distribute Promotional Material for Existing Learn to Ride Spaces		1 Year	
Implement Learn to Ride Park		3 Years	
Development Plan review and changes		1 Year	Specify bike parking for all land uses
Install directional signage (Sharrows, coloured bollards/stobie poles, signs etc.)		Based on network timescales	Implemented in conjunction with bicycle network
Install local destination signage		Integrated with existing programs	Linear Park, Fourth Creek Trail etc. and with PAMP
Improve lighting on bike paths		Integrated with existing programs	e.g. Linear Park (with Linear Park Coordinating Committee)
Bike Parking	**Review all Council sites**	1 Year	
	Upgrade Council sites	2-5 Years	Seek to maximise existing light infrastructure
	Engage with other sites	2 Years	Seek 5 upgrades/year

8.3 Bicycle Culture

Table 8.3 summarises the timescales anticipated for development of the promotion actions that will assist in creating a bicycle culture.

Table 8.3: Bicycle Culture Priority

Action	Timescale	Comment
Exemplar Cycling School	1 Year	Identify and understand existing routes and catchment
	2-5 Years	Establish activities and implement supporting infrastructure including a signage strategy
Establish a Bicycle User Group (BUG)	2 Years	Within Council area
Voluntary UniSA Travel/Cycling Plan	2 Years	Seek to implement with UniSA
Establish Cycling and Walking Group that works collaboratively with similar groups from surrounding Councils to integrate cycling promotion, planning and events	1 Year	Internal
	2 Years	External
Review existing activities/events for cycle friendly/cycling opportunities	1-2 Years	
Establish Social Ride Group	2 Years	Potentially as part of BUG
Way2Go - Liaise with all schools	2 Years	Understand opportunities at schools
Education of sharing space between vehicles, cyclists and pedestrians	Ongoing	In conjunction with MAC and DPTI campaigns.
Promote cycling to events	Ongoing	Provide bike parking at these events
Accessible wayfinding maps and supporting signage	Ongoing	Online and hardcopy maps should be easily accessible.
Monitor and extend bike loan scheme	1-3 Years	If feasible
Creative / visible infrastructure design	Ongoing	Supporting infrastructure designed by/with local artists or students

8.4 Monitoring Implementation

As discussed in Section 7 monitoring and evaluation is an ongoing requirement for the success of the vision of Council to increase cycling numbers. Section 7 outlines suggestions for ongoing monitoring and evaluation in relation to event participation etc. while the following has been identified as priority monitoring steps to implement:

- Permanent Linear Park / O-Bahn monitoring site/s with cyclist counters within 2 years.
- Participation in annual Super Tuesday/Sunday counts from 2016.

8.5 Funding Resources

It is envisaged that the City of Campbelltown will seek funding assistance to implement measures identified in the Bicycle Plan from the following sources:

- State Government (DPTI) the Office of Cycling and Walking
- State Bicycle Fund
- Private developers
- Department of Recreation and Sport
- Regional Open Space Funding, Planning SA
- Metropolitan Open Space Funding, Planning SA
- Smarter and Safer Routes to Schools programs
- TravelSmart SA
- Federal Government "Black Spot" funding for hazardous locations;

- State Government "Black Spot" funding for hazardous locations; and
- Public fundraising, contributions and sponsorship, community groups for end-of-trip facilities such as bicycle parking and drinking fountains.

9. Initial Comments

GTA Consultants has updated the 2007 Strategic Bicycle Plan to develop a comprehensive network of identified and signed routes on the local street network, and connecting shared paths that will improve, strengthen and establish connections within and between the residential communities, local destinations, open spaces and reserves and adjoining Councils. Strategies for community engagement and education with respect to cycling have been included in the updated Bicycle Plan to promote and encourage an increase of cycling levels into the future.

The City of Campbelltown has a great opportunity to increase cyclist numbers with many strengths to the Council area for developing a bicycle network, including:

- Linear Park cycling route
- Existing routes that can be developed (Fourth Creek)
- Existing accessible grid road network
- Local streets with generally low traffic volumes and speeds
- Proximity to Adelaide Hills cycling routes
- Relatively flat topography of Council area

The overall bicycle network, once complete, will provide a local bicycle network suitable for all types and levels of experience of cyclists utilising a variety of bicycle treatments, with emphasis on connectivity to schools, jobs and local facilities. This will be supported by actions and activities to promote and encourage cycling for specific journey purposes and recreational cycling.

The implementation of the network will be staggered to allow for more manageable and affordable sized priority projects to be tackled as appropriate for the Council and in conjunction with other Council projects and funding opportunities.

The Bicycle Plan provides a network plan and framework for achieving Council's vision of an increase in the number of residents who ride for recreation, education, shopping, travel to work or any other purpose.

Appendix A

Neighbouring Council Bicycle Plans

Port Adelaide Enfield

The *City of Port Adelaide Enfield: Local Area Bicycle Plan 2015-2020* (dated 25 November 2015, prepared by InfraPlan), incorporates bicycle routes which meet the City of Campbelltown along Linear Park. In the short term this plan outlines extension of a Shared Use Path along the western side of Sudholz Road to the Council boundary at the River Torrens. Furthermore, the Bicycle Plan outlines longer term routes that approach the boundary of the City of Campbelltown, as shown in Figure A.1, with the routes within the City of Campbelltown that meet the council border highlighted.

Figure A.1: Excerpt of the City of Port Adelaide Enfield Long Term Cycling Network

(Image adapted from City of Port Adelaide Enfield Local Area Bicycle Plan Draft, prepared by InfraPlan).

Burnside

The *City of Burnside Bicycle Strategy* (dated May 2012, prepared by Hub Traffic and Transport) incorporates bicycle routes which meet the City of Campbelltown along Magill Road. The routes within the City of Campbelltown that meet the Council boundary are shown in Figure A.2.

Figure A.2: Excerpt of the City of Burnside Bicycle Network

(Image adapted from the City of Burnside Bicycle Strategy, prepared by Hub Traffic and Transport).

Norwood Payneham and St Peters

The *Norwood Payneham and St Peters City-Wide Cycling Plan 'Plan to Cycle'* (dated December 2013, prepared by InfraPlan) incorporates bicycle routes which meet the City of Campbelltown along Glynburn Road and Wicks Avenue. The routes within the City of Campbelltown that meet the Council boundary are shown in Figure A.3.

Figure A.3: Excerpt of the City of Norwood Payneham and St Peters Future Cycling Network

(Image adapted from City of Norwood Payneham and St Peters City-Wide Cycling Plan, prepared by InfraPlan).

Tea Tree Gully

The *City of Tea Tree Gully Local Area Bicyle Plan* (2006 Plan Revision, prepared by Tonkin) incorporates bicycle routes which meet the City of Campbelltown along Linear Park. The routes within the City of Campbelltown that meet the Council boundary are shown in Figure A.. The two north-south routes that are outlined in the City of Tea Tree Gully that are able to be continued in the City of Campbelltown are bicycle lanes on Lower North East Road and wide kerbside lanes on Reids Road which connects to Silkes Road within the City of Campbelltown.

Figure A.4: Excerpt of the City of Tea Tree Gully Bicycle Network

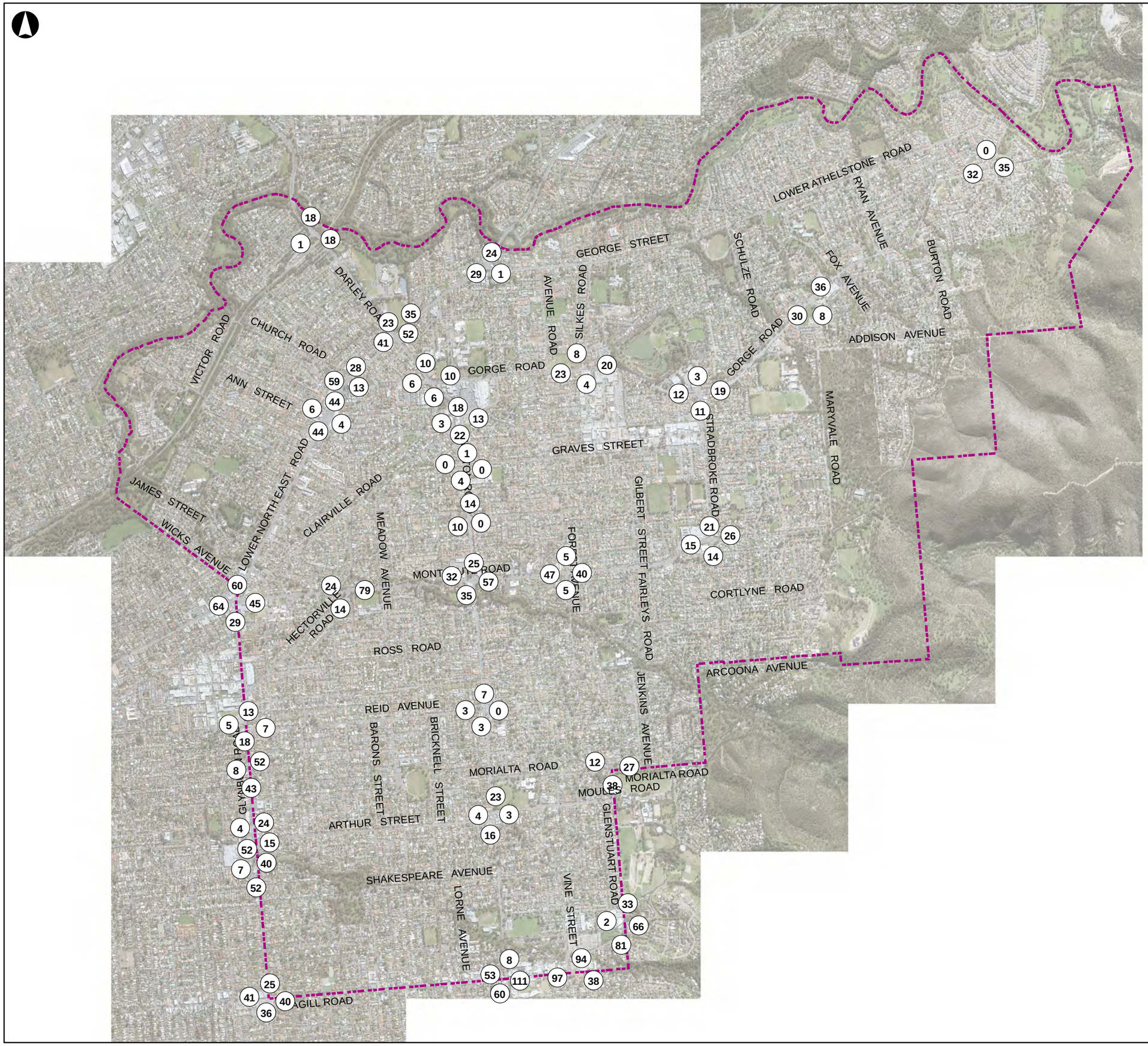
(Image adapted from City of Tea Tree Gully Enfield Local Area Bicycle Plan 2006 Revision, prepared by Tonkin).

Adelaide Hills

The Adelaide Hills Council does not currently have a bicycle plan or network, with their first Bicycle Plan remaining under preparation. Several walking trails exist in the vicinity of the City of Campbelltown boundary, including the Black Hill Conservation Park Trail and Morialta Walks.

Appendix B

Bicycle Volumes



Legend

- XX — Total Number of Bicycles on Each Approach (Two-way 12 Hour)
- LGA Boundary

Issue	Date	By	Chkd	Appd
Final	23-01-17	LK	PF	PF

Metres
0 300 600 1,200

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Client
The City of Campbelltown

Job Title
Campbelltown City Council Bike Plan

Drawing Title
Figure B.1 Bicycle Counts

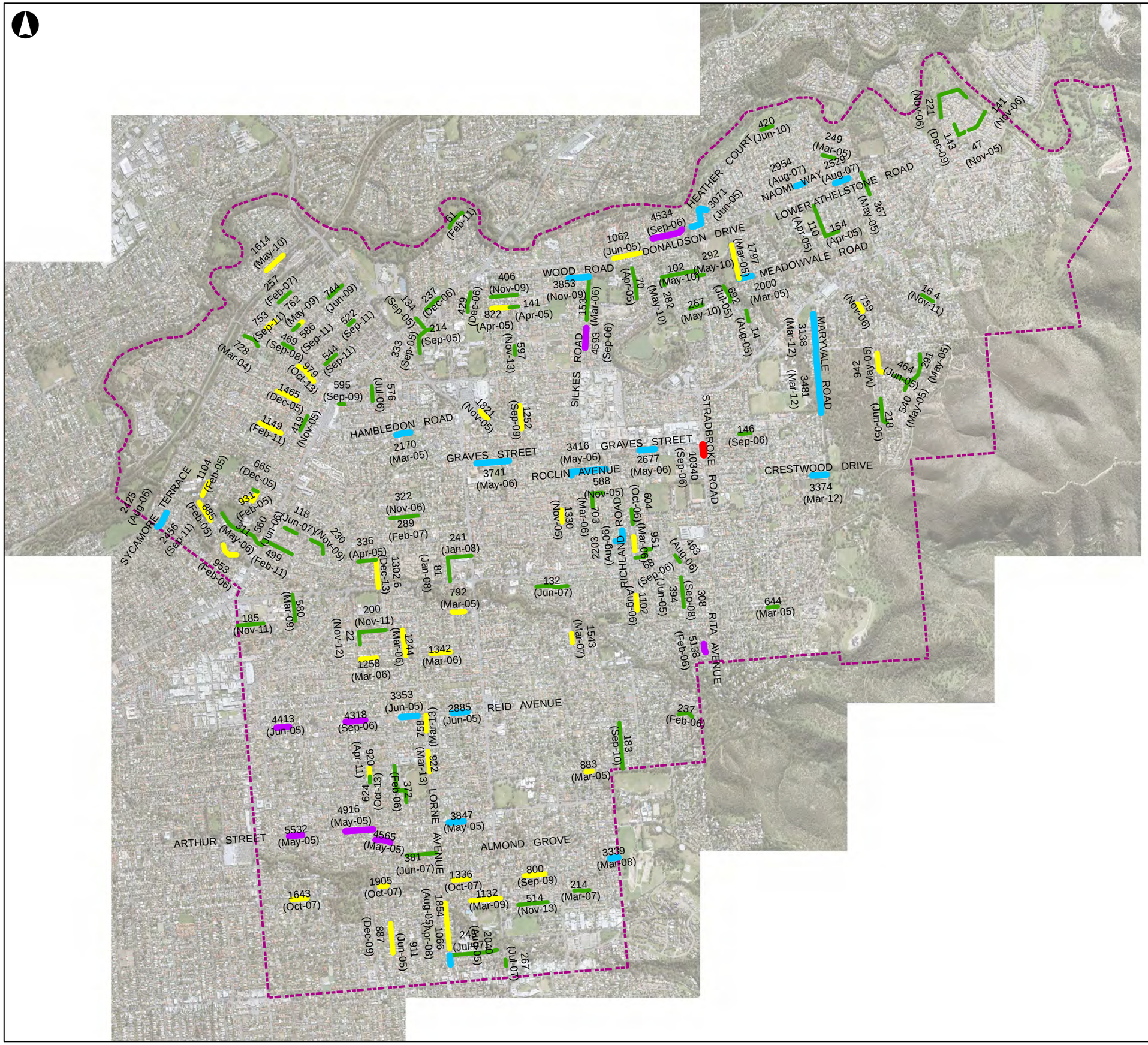
Scale at A3
1:25,000

Drawing Status
Final

Job No	Drawing No	Issue
15A1111000	001	A

Appendix C

Traffic Volumes and Speeds



Legend

Daily Traffic Volume (Vehicles)

- > 750
- 750 - 2000
- 2000 - 4000
- 4000 - 6000
- 10000 +

Issue	Date	By	Chkd	Appd
Final	23-01-17	LK	PF	PF

Metres
0 340 680 1,360

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Client
The City of Campbelltown

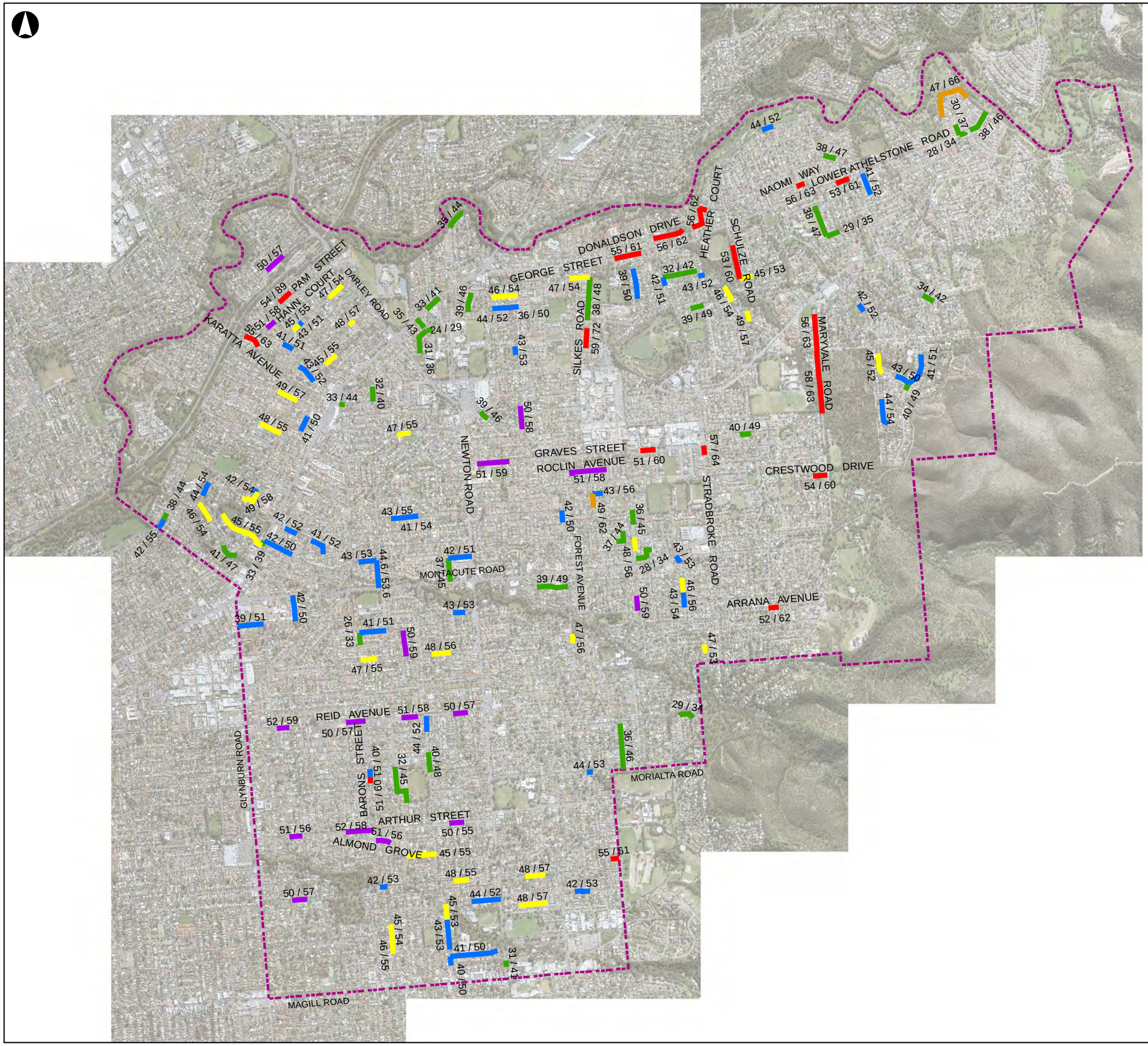
Job Title
Campbelltown City Council Bike Plan

Drawing Title
Figure C.1 Traffic Volumes

Scale at A3
1:25,000

Drawing Status
Final

Job No	Drawing No	Issue
15A1111000	001	A



Legend

- Ave. Speed >= 50km/h and 85% Speed >= 60km/h
- Ave. Speed >= 50km/h and 85% Speed < 60km/h
- 45km/h <=Ave. Speed < 50km/h and 85% Speed >= 60km/h
- 45km/h <= Ave. Speed < 50km/h and 85% Speed < 60km/h
- Ave. Speed < 45km/h and 85% Speed >= 50km/h
- Ave. Speed < 45km/h and 85% Speed < 50km/h

Traffic Speeds

xx / xx : Average Speed / 85th Percentile

Issue	Date	By	Chkd	Appd
Final	23-01-17	LK	PF	PF

Metres

0 340 680 1,360

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Client

The City of Campbelltown

Job Title

Campbelltown City Council Bike Plan

Drawing Title

Figure C.2 Traffic Speeds

Scale at A3

1:25,000

Drawing Status

Final

Job No	Drawing No	Issue
15A1111000	001	A

Based on Section 3.5.1 and 3.5.2, Table C.1 has been prepared summarising the streets that approach the threshold where under the current street environment, cyclist and vehicle segregation may be more appropriate than advisory treatments. Table C.2 summarises the streets that exceed the Austroads guidance threshold.

As such Table C.1 includes streets with volumes between 1,000 and 3,000 vpd and 85th percentile speeds over 50km/h, and Table C.2 includes streets with volumes over 3,000 vpd and 85th percentile speeds over 50km/h. Streets highlighted in bold were recommended for bicycle lanes in the 2007 Strategic Bicycle Plan. Where a range of locations on that street were recorded the higher volume is indicated, while speeds are averaged for the available data points in the most recent year.

Table C.1: Streets with Volumes between 1,000 and 3,000 AADT, 85th percentile speeds over 50km/h

Road	Volume (vpd)	Average Speed (km/h)	85th Percentile Speed (km/h)	Data Year
Ann Street	1500	49	57	2005
Church Street	2450	42	55	2011
Fairleys Road	1100	50	59	2006
Forest Ave	2120	46	54	2008
Gameau Road	1600	50	57	2010
Hill Street	1150	48	55	2011
Lower Athelstone Road*	<2900	55	62	2007
Melville Road	<1150	47	56	2011
Ross Road	<1350	48	57	2006
Schulze Road	**<1350**	**48**	**57**	**2006**
Shakespeare Avenue	<1900	47	55	2007

Table C.2: Streets with Volumes over 3,000 AADT, 85th percentile speeds over 50km/h

Road	Volume (vpd)	Average Speed (km/h)	85th Percentile Speed (km/h)	Data Year
Arthur Street	**<4900**	**51**	**56**	**2005**
George Street*	**4550**	**56**	**62**	**2006**
Glen Stuart Road	3350	55	61	2008
Graves Street	**<3750**	**51**	**59**	**2006**
Maryvale Road*	<3500	56	62	2012
Reid Avenue	**4300**	**51**	**57**	**2006**
Silkes Road	**3850**	**47**	**54**	**2009**
Stradbroke Road* (between Gorge Rd and Montacute Rd)	**10350**	**57**	**64**	**2006**
Stradbroke Road* (south of Montacute Rd)	**5140**	**47**	**53**	**2006**

*Speed limit is 60 km/h and therefore 85th percentile speed should be considered in this context

Further to the above analysis of vehicle speeds and volumes, two local streets were found to have recorded 85th percentile speeds of over 60km/h; namely Cortlyne Road and Lincoln Road. Cortlyne Road recorded an 85th percentile speed of 62km/h an average speed of 52 km/h with 644 vehicles per day in 2005, while Lincoln Road recorded an 85th percentile speed of 89km/h, an average speed of 54km/h with 257 vehicles per day in 2007. It is recommended updated data for both these streets is collected and used to consider whether an advisory treatment remains appropriate without traffic calming devices. Given the unusually high 85th percentile speed recorded on Lincoln Road, this may be due to a counter error, as the road is relatively short and provides only local access.

Local streets with 85th percentile speed over 50km/h in the 2007 Strategic Bicycle Plan (all recommended for advisory treatments) with no more recent traffic data are:

- Addison Avenue – 2,700vpd, 85th percentile speed of 55km/h
- Gilbert Street – 850vpd, 85th percentile speed of 51km/h.

Given the relatively low volumes and speeds on Gilbert Street quoted in the 2007 Strategic Bicycle Plan it is likely that Advisory Treatments would still be appropriate. However, the larger volumes recorded on Addison Avenue approach the boundary where a simple advisory treatment may not be appropriate without traffic calming measures. As such further traffic speed and volume data is advised to be collected, and used in conjunction with Figure 3.2 to consider the appropriateness of potential treatment options.

Further to the above, the '*Local Area Traffic Management Plan for the Suburb of Campbelltown'* (InfraPlan (Aust) Pty Ltd, May 2014) summarises recommendations to manage traffic speeds on several streets within the suburb of Campbelltown including several streets that form part of the Local Bicycle Network. More recent traffic counts are presented in this LATMP for Ann Street, indicating volumes and speeds have

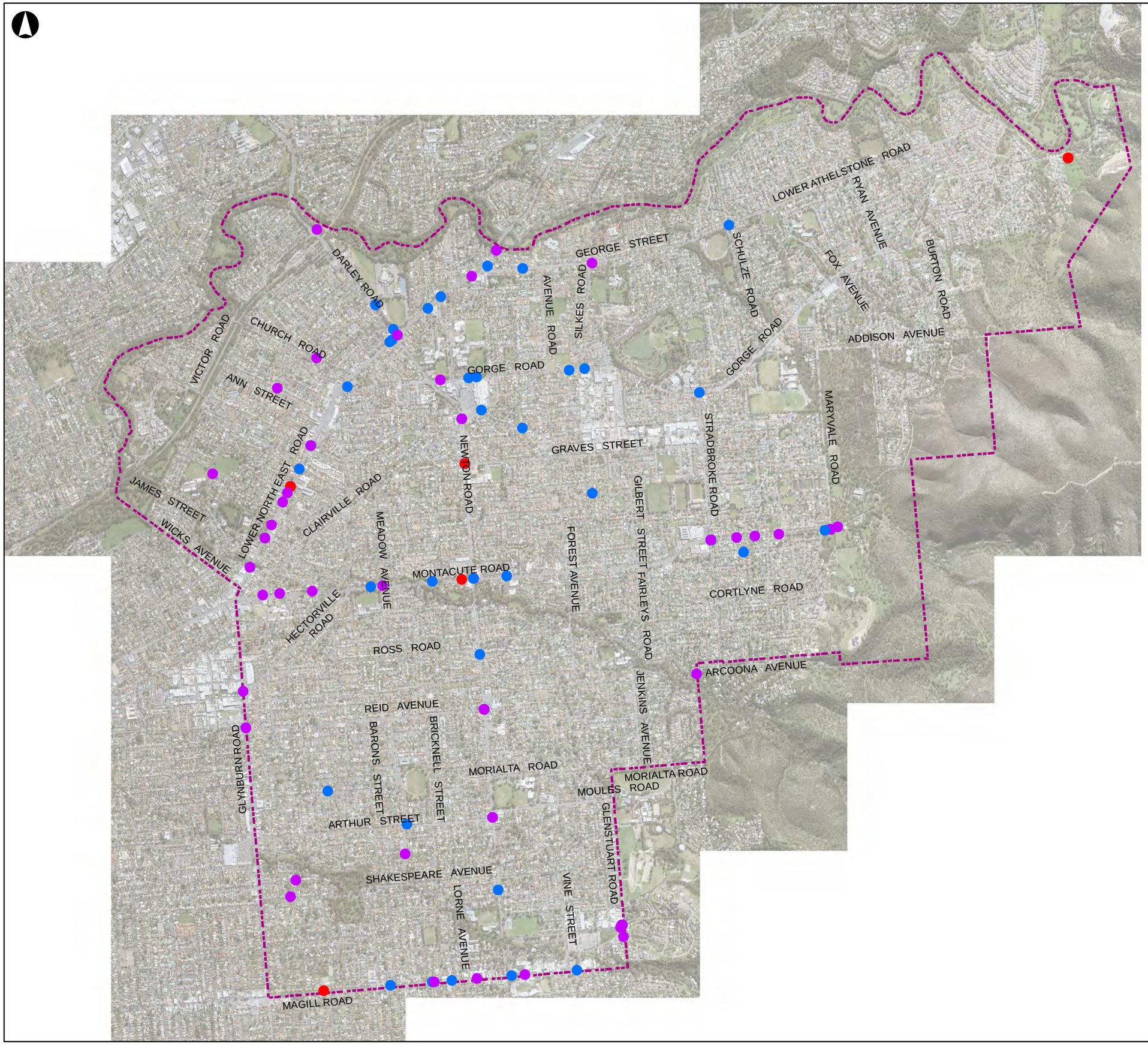
dropped since 2005 (to 1,358 vehicles per day and 85th percentile speed of 52.2km/h). As such advisory treatments are considered appropriate for Ann Street. Further locations included in the LATMP that are included in the Local Bicycle Network:

- Clairville Road (1,297vpd, 50.2km/h average speed, 58.3km/h 85th percentile speed, 2014)
- Victor Road (1,574vpd, 51.4km/h average speed, 58.7km/h 85th percentile speed, 2014)
- Hill Street (no updated volumes)
- Wicks Avenue/Sycamore Terrace Intersection (no updated volumes).

Clairville Road and Victor Road indicate traffic speeds where advisory treatments may not be appropriate, however after the implementation of recommendations for speed management from the LATMP further traffic counts should be undertaken, and if 85th percentile speeds are reduced advisory treatments may still be appropriate.

Appendix D

Crash Data



Legend

Crash Severity (120)

- Property Damage (51)
- Minor Injury (54)
- Serious Injury (8)

Issue	Date	By	Chkd	Appd
Final	23-01-17	LK	PF	PF

Metres
0 300 600 1,200

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Client
The City of Campbelltown

Job Title
Campbelltown City Council Bike Plan

Drawing Title
Figure D.1 Cycle Crashes

Scale at A3
1:25,000

Drawing Status
Final

Job No	Drawing No	Issue
15A1111000	001	A

Table D.1 below shows the number of cyclist crashes recorded, based on the severity of the crash, as recorded by DPTI, and the nature of the road.

Table D.1: Cyclist Crash Records 2009-2013

Crash Severity	Arterial Roads	Local Roads	Total Crashes
Fatal	0	0	0
Serious Injury	9	0	9
Minor Injury	36	24	60
Property Damage Only	37	14	51
TOTAL	**82**	**38**	**120**

Review of the cyclist crash data has identified the following:

- A total of 69 of the 120 crashes resulted in injuries, with 9 of these being serious
- 24 of 38 local road crashes were injury crashes, with 14 Property Damage Only (PDO) crashes
- 82 of the 120 crashes occurred on arterial roads, 45 involving some kind of injury.

The 2007 Strategic Bicycle Plan identified the major crash locations to be on Glynburn Road and at the intersection of Norton Summit Road / Glen Stuart Road. The following locations have been identified as having 3 or more cyclist crashes recorded in the City of Campbelltown in the 5 year period (2009-2013);

- Norton Summit Road / Glen Stuart Road (13) – 5 injury, 8 PDO – 12 Right Angle, 1 Right Turn
- Montacute Road / Stradbroke Road (5) – 2 injury, 3 PDO – 5 Right Angle
- Payneham Road / Montacute Road / Lower North East Road / Glynburn Road (3) – 3 injury – 3 Side Swipe
- St Bernards Road / Reid Avenue / Savas Road (4) – 3 injury, 1 PDO – 3 Right Turn, 1 Right Angle
- Newton Road / Graves Street (3) – 2 injury, 1 PDO – 2 Side Swipe, 1 Right Angle
- Newton Road / Clairville Road (3) – 2 injury, 1 PDO – 2 Right Angle, 1 Right Turn

The above crashes do not indicate a particular pattern at each of the intersections except the intersection of Norton Summit Road and Glen Stuart Road. The previous Bicycle Plan suggested consideration be given to cyclists in the upgrade of the intersection of Norton Summit Road / Glen Stuart Road. Bicycle lanes are currently marked through this intersection and aerial photography indicates these were present at the intersection from as early as 2009.

Crash data from 2009-2013 indicates 13 cyclist crashes were recorded at the intersection of Norton Summit Road / Glen Stuart Road. Of these crashes 8 were Property Damage Only (PDO) and 5 were injury crashes. 9 of 13 crashes were Right Angle crashes with cyclists travelling in a northeast direction (i.e. up Norton Summit Road). This route is most typically used by road based cyclists as part of training routes as it is noted that 6 of the 13 crashes occurred on a weekend.

The ongoing crash record suggests that despite the introduction of a cycle lane for cyclists in this direction and a stop sign on Glen Stuart Road, there are still a large number of crashes recorded at this intersection. On-site observations of vehicles turning from Glen Stuart Road suggests that the Stop sign requirement is poorly observed and that much of the driver focus is on vehicles travelling downhill not uphill.

When looking at the major arterial roads, the following summarises the predominant cyclist crash type recorded along those roads within the council boundaries:
Montacute Road (25 crashes – 12 midblock) – 12 Right Angle (48%), 5 Roll Over (20%)

- **Lower North East Road** (21 crashes – 7 midblock) – 9 Side Swipe (43%), 3 Right Angle (14%), 3 Right Turn (14%), 3 Roll Over (14%)
- **St Bernards Road** (10 crashes – 1 midblock) – 6 Right Turn (60%), 3 Right Angle (30%)
- **Gorge Road** (8 crashes – 5 midblock) – 4 Right Angle (50%), 4 Side Swipe (50%)
- **Newton Road** (8 crashes – 0 midblock) – 4 Right Angle (50%), 2 Side Swipes (25%)
- **Magill Road** (6 crashes – 5 midblock) – 3 Hit Parked Vehicle (50%), 2 Side Swipe (33%)
- **Darley Road** (4 crashes – 3 midblock) – 3 Side Swipe (75%), 1 Right Turn (25%)
- **Glynburn Road** (3 crashes – 0 midblock) – 2 Right Angle (67%), 1 Hit Fixed Object (33%).

A closer review of crash data on the above major corridors indicates that generally the majority of midblock crashes occur outside of the bicycle lanes operating hours. On Montacute Road 11 of 12 midblock crashes involved westbound cyclists, 9 outside operating times of bicycle lanes.

Appendix E

E.1 Consultation

E.1.1 Stakeholder Consultation

Although a significant number of government agencies, neighbouring Councils, cycling groups and other parties of interest were invited to attend a Stakeholder Bicycle Forum, only two organisations accepted. As a consequence, the Stakeholder Forum was used as a workshop for Council staff (7 attended from various departments). A representative of the Bicycle Institute of South Australia also attended.

The following were general outcomes of the workshop:

- There are many opportunities for cycling to be integrated in to Council activities and responsibilities, increasing the benefits to be derived
- Closer co-ordination between Council departments would be key to deriving the benefits; and
- There was a need for a step change in the cycling infrastructure provision within Campbelltown.

Three written submissions were also received from the following Stakeholders;

iv Manager Engineering Services, City of Burnside
v Sustainability Officer, City of Norwood Payneham & St Peters
vi Bicycle Institute of South Australia.

The City of Burnside response noted in particular;

- The potential to develop Magill Village as a centre
- Using Belauh Road as a bicycle boulevard
- Developing Magill Village as a centre to warrant using Magill Road as a route linking Rowland Road (City of Burnside) and Vine Street (City of Campbelltown).

Both the City of Burnside and the City of Norwood Payneham and St Peters representations expressed a desire to implement shared initiatives to provide linkages between the Councils' respective bicycle routes.

The Bicycle Institute of South Australia offered several pages of feedback. The following were highlighted as barriers to cycling:

- Vehicle speeds
- Difficulty crossing busy arterial roads
- Links to key destinations
- Distance / time / fitness

The following were generally outlined as potential improvements to aid overcoming barriers:

- Klemzig and Paradise O-Bahn station routes with improved signage and lighting, and improve bicycle parking
- Council facilities (e.g. Community Centre, Library) clear routes and crossings, and improve bicycle parking
- Trial 40km/h speed limits
- Access to shopping centres and crossing of main road improvements
- Improved signage on CBD commuter routes in conjunction with neighbouring councils
- Improving crossings on arterial roads particularly:

- Gorge Road between the high school and shopping centre (assumed to refer to Charles Campbell College and Newton Central Shopping Centre
- St Bernards Road (no specific locations identified)
- Newton Road connecting Clairville Road to shops
- Gorge Road / Silkes Road intersection

- Alternative secondary road routes to main arterials (particularly St Bernards Road)
- Promote cycling routes at Council facilities and events
- Promoting cycling to school.

E.1.2 Community Consultation

The Community were invited to provide feedback by:

- attending a local Community Bicycle Forum
- attending a Council Talking Point on Saturday 14 February 2015
- completing a survey online or hardcopy
- posting a comment on Facebook or Twitter
- sending a letter or email.

The consultation period was open for an extended period from Monday 9 February to Monday 6 April 2015.

Surveys and Written Submissions

Surveys were provided to Community members to be completed online or on hardcopy to provide Community feedback regarding the Strategic Bicycle Plan Review. 42 responses were received in total, 32 on-line and 10 written. The majority of respondents (84%) cycled at least once a week around the Council area.

The following were outlined as cycle routes that could be improved within the Council area. Some routes were identified by more than one respondent, others by only one respondent.

- St Bernards Road
- Crossings on Montacute Road
- Sections of disappearing bicycle lanes on most major arterials
- Links to/from Linear Park
- Crossing points along Newton / St Bernards Road
- Gorge Road
- Fourth Creek Trail
- Newton Road / Darley Road intersection
- Forest Avenue
- Integrating routes to schools
- Continuation of Montacute Road
- Maryvale Road
- Sudholz Road/Darley Road.

The following were outlined as motivational factors that would encourage the respondents to cycle more frequently.

- Greater separation from cars
- More bike lanes or paths, including permanent bicycle lanes
- Local shopping centre routes and safer accesses, provision of bicycle parking at shops
- Lower North East Road crossings
- Lower vehicle speeds
- Cycle facilities integrated with public transport hubs
- Bicycle route and safety education / signage / handouts
- Improved quality of road surfaces
- Free / Hire Bicycles
- Making footpaths suitable for shared use cycling corridors in conjunction with new laws allowing cyclists to cycle on footpaths
- Relaxation of mandatory bicycle helmet laws.

Community Bicycle Forum

A Community Bicycle Forum was held on Wednesday 4 March 2015. The Forum was structured to elicit discussion around possible infrastructure improvements to provide a better cycling experience and options for addressing/modifying travel behaviour within the local Community. The Forum included both small group and whole of group discussions.

The following are key points noted during the discussions on existing cycle networks, barriers to cycling and strategic directions and outcomes;

- School safe programs and cycling groups
- Separation between cyclists and vehicles
- Discontinuity of existing bicycle lanes
- Signage improvements to existing network
- Fourth and Fifth Creek trails for bikes
- Improvements to cyclist facilities at Paradise Park and Ride
- Beulah Road as a cycle route
- Secure and easily located end of trip facilities
- Crossing Lower North East Road represents huge barrier
- Improved access important centres (e.g. shopping centres, Council offices, Library etc.)
- Good bike parking (secure, safe) at major destinations
- Improvements to Gorge Road
- Lighting on Linear Path for after-dark commuters
- Signage particularly Linear Park – sign exits and routes
- St Bernards Road unsafe for cyclists
- Glynburn Road northbound approach at Magill Road intersection
- Dog control, particularly Linear Park.

Consultation Summary

Overall from the consultation responses, the most important issues that were identified are considered to be:

- Discontinuous or disappearing bike lanes on arterial roads;
- Difficulty in safely crossing arterial roads; and
- Lack of adequate and appropriate signage.

Appendix F

F.1 Bicycle Treatments

Advisory Treatments (AT) essentially consist of bicycle symbols on the pavement, which are visible to both cyclists and motorists and can be used to identify continuation of a route. A bicycle logo provides an indication to motorists that the road is being shared by cyclists and that caution should be exercised by all road users. It does not provide exclusive access for either transport mode but acts as a cautioning measure, and is only suitable on lower volume and lower speed roads (i.e. below 3000 vehicles per day and 85th percentile speed under 50km/h).

Bicycle lanes are perhaps the safest means of demarcating space for cyclists on urban roads. Bicycle lanes can provide cyclists exclusive road space and are usually proposed running parallel to vehicular traffic. As per Austroads Standards, bicycle lanes should be provided when speeds exceed 60 km/h and/or average daily volumes exceed 3,000 vehicles.

Council may consider the use of short sections of green pigmented lanes on some sections of the network to highlight the presence of cyclists as is standard practice in cities such as Sydney and Melbourne and has recently been implemented at locations in Adelaide CBD. These highlighted lanes provide a caution to the motorist about the presence of cyclists. This is more of a cautionary measure generally used when there is a heavy traffic volume.

Furthermore sections of (off street) shared use path (SUP) at sufficient dimensions and quality for both pedestrians and cyclists to use in both directions may be appropriate to provide connections to Pedestrian Actuated Crossing (PAC) facilities and between sections of trails and bicycle routes. SUP connections are generally advised where otherwise reaching crossing facilities or bicycle routes would be particularly difficult or unsafe.

The Austroads guide provides comprehensive descriptions and examples of the various path and road based bike treatments that are considered appropriate for use in Australia. Chapter 4 provides details of on-road bicycle facilities and Chapter 7 provides details of paths for cycling. Brief descriptions of the various facilities, using Adelaide or Interstate examples, are set out below.

Two-way separated bicycle paths (not in the road reserve)

Two-way cycleways are exclusive bicycle paths that are completely separate from parked cars, vehicle traffic and pedestrians. They provide bi-directional travel on one side of the street off-road and in the road reserve. They can also be located in parks and reserves.

This type of facility separates cyclists from pedestrians and vehicle traffic and is located outside of the road. As such, these facilities attract cyclists with a wide range of abilities.

Example: Sydney Harbour Bridge. There are no urban examples in Adelaide, only adjacent to expressways/ freeways

Two-way separated bicycle paths/ways (in the road reserve)

Two-way cycleways are exclusive bicycle paths that are completely separate from parked cars, vehicle traffic and pedestrians. These facilities provide bi-directional travel along one side of the road and provide physical separation between cyclists, pedestrians and vehicle traffic. This type of facility attracts cyclists of all abilities.

While these facilities often require substantial engineering works to implement, this needs to be balanced relative to competing demands for space within the road reserve, as this facility is a preferred infrastructure type for major routes.

Example: College Street, Sydney (now removed). There are no examples in Adelaide

One-way separated bicycle paths/ways (in the road reserve)

One-way cycleways are exclusive bicycle paths that are completely separate from parked cars, vehicle traffic and pedestrians. These facilities provide single direction travel along each side of the road and provide physical separation between cyclists, pedestrians and vehicle traffic. This type of facility attracts cyclists of all abilities.

While these facilities often require substantial engineering works to implement, which needs to be balanced relative to competing demands for space within the road reserve, this type of facility is a preferred infrastructure type for major routes.

Example: Frome Street, Adelaide

Bicycle Lanes

Bicycle lanes are on-road, one-way facilities which designate road space exclusively for cycling which must be legally signposted with bicycle lane signs. In built-up areas, bike-lanes often run adjacent to parked cars and a buffer zone is recommended to reduce the hazard of drivers opening their car doors. To increase driver awareness, bicycle pavement stencils and green coloured surfacing at intersections are often used.

As bicycle lanes are an on-road facility, they are likely to encourage more confident cyclists, depending on the speed and volume of traffic in the adjacent traffic lanes. Arterial road bike lanes are generally only available in one or both of the peak periods.

Example: Galway Avenue, City of Prospect

Contra-flow bicycle lanes

Contra-flow bicycle lanes are on-road lanes that are signed and marked to allow cycling in the opposite direction of an otherwise one-way street. Lanes are typically fitted with green paint to emphasise the presence of cyclists travelling in the opposite direction.

This facility type typically attracts confident cyclists, and in slow speed/low volume environments is also used by less confident cyclists.

There is potential to accommodate contraflow lanes along any one-way road provided sufficient width is available so vehicles do not encroach onto the bicycle lane.

Example: Bank Street, Adelaide CBD

Shared Road Shoulders

Road shoulders are one-way facilities which are shared between parked cars and cyclists. To encourage good parking discipline, it is recommended to add a supplementary broken line, but there is no formal buffer zone to guard from potential hazards such as opening car doors. To increase driver awareness, bicycle pavement stencils are often used and occasionally green coloured surfacing.

This facility type typically attracts confident cyclists and in slow speed/low volume and low parking environments may also be used by less confident cyclists.

Shared road shoulders are generally appropriate on roads with less than 10,000 vehicles per day (vpd) and a maximum speed limit of 60km/h, provided there is sufficient width available in the parking lane to safely accommodate both parked cars and bicycles (3 3.5m).

Example: Galway Avenue, City of Prospect

Mixed traffic advisory treatments

Roads which are line-marked and/or signed for mixed use by motor vehicles and bicycles. Mixed-traffic facilities are suitable for roads with low traffic volumes and speeds and little or low turnover parking, such as quiet residential streets. The main purpose of these facilities is for route guidance and driver awareness of bicycle routes.

Mixed-traffic facilities are suitable for the enthused and confident cyclists and may also be used by less confident cyclists.

Example: Devonport Terrace, Ovingham

Shared zones

Shared zones are special low speed, mixed-traffic environments which are legally controlled by signs and line markings that restrict the speed limit to 10km/h. Parking, if provided, is restricted to marked spaces to afford priority to pedestrians. Typically, the road environment is designed with special pavements, speed controls and landscaping, with few or no distinguishable footpaths.

Approval for all shared zones must be sought from Department for Planning, Transport and Infrastructure (DPTI) and comply with the current DPTI Shared Zone Guidelines. Any formally designated shared zone is appropriate for use by cyclists of all abilities.

Example: Leigh Street, Adelaide CBD

Shared Streets

Shared streets are low speed, mixed-traffic environments that primarily restrict the speed of vehicles by design rather than a special speed limit. Parking is restricted to marked spaces to afford priority to pedestrians and cyclists. Typically, the road environment is designed with special pavements, speed controls and landscaping, with few or no distinguishable footpaths.

Whilst approval for a shared street is not formally required by Department for Planning, Transport and Infrastructure (DPTI), in practice the design would be expected to comply with the DPTI Shared Zone Guidelines. An appropriately designed shared street is suitable for use by cyclists of all abilities.

Example: John Street, Salisbury (source: Nearmap)

General traffic

No specific provisions are made for cyclists. Although most streets are suitable for cycling, many would be seen as unsafe due to high traffic volumes and speeds. Where an alternate route is not feasible / easily accessible, cyclists will ride on streets with no infrastructure.

This facility type potentially attracts: strong and fearless (major roads), enthused and confident (general urban streets) and the interested but concerned (quiet local streets).

Example: Livingstone Avenue, Prospect

Shared use paths (in or not in the road reserve)

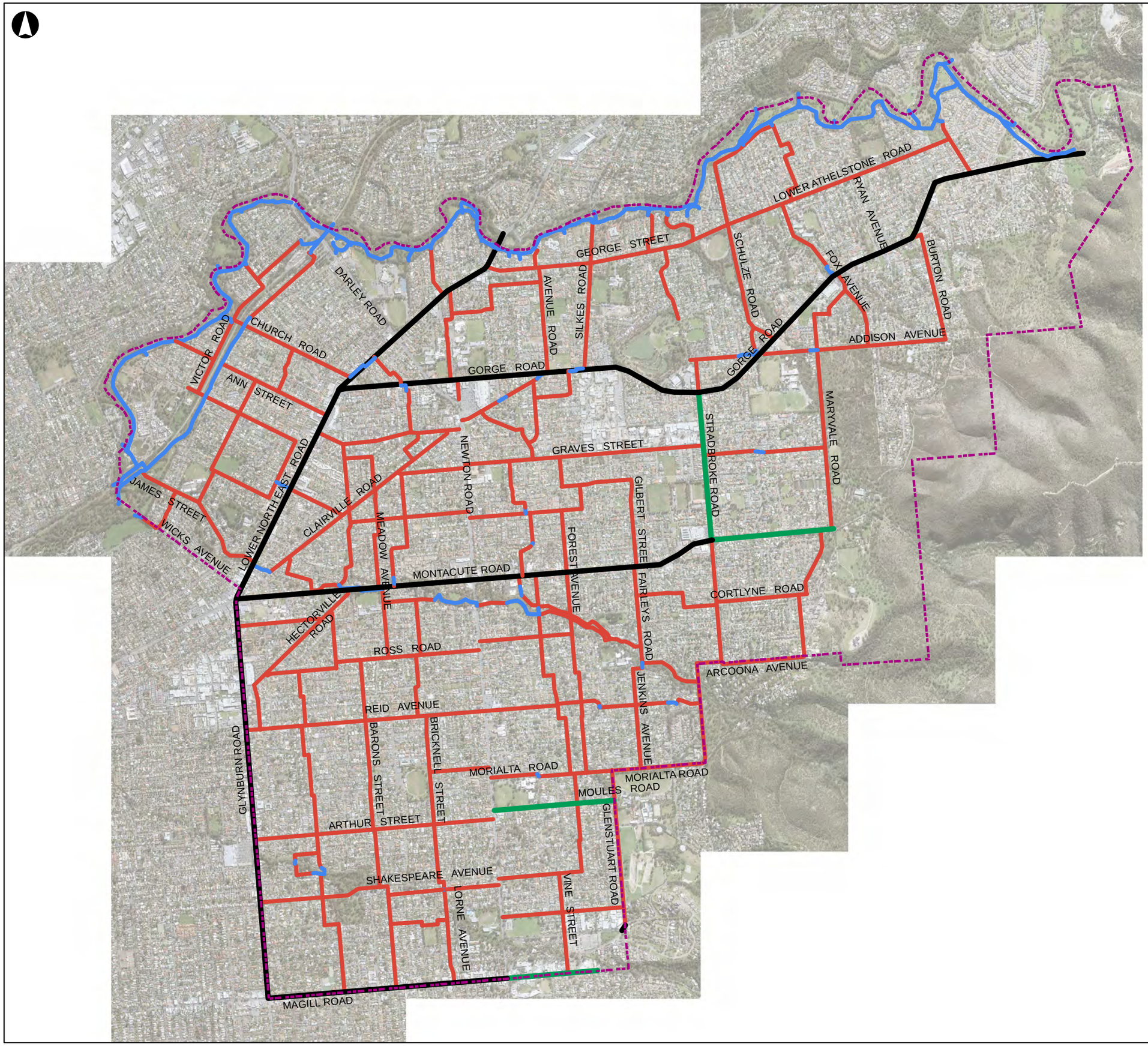
Shared use paths can be located adjacent to a road or through a park or reserve. They are used by both cyclists and pedestrians with line-marking and/or signage designating their legal status as a shared use path and helping to encourage safe use by both user groups. Pedestrians have the right of way on shared use paths. There is the potential for conflict between user types when volumes of pedestrians and cyclists are high or when the path width is narrow.

This type of facility attracts cyclists with a wide range of abilities and can generally be implemented wherever there is sufficient width to accommodate a 3.0m wide path. Wider paths may be required depending on the volume of cyclists and pedestrians.

Example: River Torrens Linear Park

Appendix G

G.1 Proposed Bicycle Network



Legend

- Advisory Treatment
- New or Upgraded Shared Path Connections
- New or Upgraded Bike Lane
- Existing Arterial Road Bicycle Lanes

Issue	Date	By	Chkd	Appd
Final	23-01-17	LK	PF	PF

Metres
0 300 600 1,200

GTAconsultants
www.gta.com.au

Client
The City of Campbelltown

Job Title
Campbelltown City Council Bike Plan

Drawing Title
Figure G.1 Local Bicycle Network

Scale at A3
1:25,000

Drawing Status
Final

Job No	Drawing No	Issue
15A1111000	001	A

The following table summarises the local and secondary streets included in the proposed bicycle network as shown on Figure G.1, with the proposed treatment and relevant comments.

Table G.1: Local and Secondary Streets

West Linear Park Connections, East Linear Park Connections and Fourth Creek priority sections prioritised as discussed in Section 8.

Road	Type	Treatment	Part of Priority Section	Length Included in Network (m)	Comment
Acacia Avenue	Secondary	Advisory Treatment		378	
Acacia Avenue North	Secondary	Advisory Treatment		446	
Adair Street	Secondary	Advisory Treatment	Bike Blvd	159	
Addison Avenue	Local	Advisory Treatment		874	
Alan Avenue	Local	Advisory Treatment	Bike Blvd	311	
Albion Terrace	Secondary	Advisory Treatment	Bike Blvd	454	Approximately 34 metres between Wyn Street and Clairville Road part of Bicycle Boulevard priority
Alexander Avenue	Local	Advisory Treatment		30	
Anderson Court	Local	Advisory Treatment	Bike Blvd	239	
Ann Street	Secondary	Advisory Treatment	West Linear	1130	Review traffic volumes post LATMP implementation
Arcoona Avenue	Local	Advisory Treatment		580	
Arthur Street	Secondary	Traffic Calming and Advisory Treatment	Bike Blvd	1630	Width not appropriate for bicycle lanes. Investigate traffic calming measures to reduce 85th percentile speeds. Approximately 822 metres between St Bernards Road and Derwent Avenue part of Bicycle Boulevard priority
Avendia Street	Local	Advisory Treatment	4th Creek	110	
Avenue Road	Local	Advisory Treatment	Bike Blvd	697	

Ballater Avenue	Local	Advisory Treatment	Bike Blvd	158	
Balmoral Avenue	Local	Advisory Treatment		27	
Barons Street	Secondary	Advisory Treatment	Bike Blvd	739	
Binnswood Street	Local	Advisory Treatment	4th Creek	348	
Blyth Street	Local	Advisory Treatment		213	
Braemore Terrace	Local	Advisory Treatment		185	
Brentwood Grove	Local	Advisory Treatment	East Linear	157	
Brian Grove	Local	Advisory Treatment	East Linear	325	
Bricknell Street	Local	Advisory Treatment		735	
Brookside Road	Secondary	Advisory Treatment	East Linear	542	
Burton Road	Local	Advisory Treatment		733	
Campbell Road	Local	Advisory Treatment	East Linear	402	
Cedar Avenue	Local	Advisory Treatment		527	
Chaliapin Street	Local	Advisory Treatment		315	
Church Road (Paradise)	Local	Advisory Treatment	Bike Blvd	883	
Church Street (Magill)	Secondary	Advisory Treatment	Bike Blvd	565	Review traffic speeds and volumes post advisory treatment implementation
Clairville Road	Local/ Secondary	Advisory Treatment	4th Creek & Bike Blvd	1550	Approximately 163m between Avendia Street and Fourth Creek part of Fourth Creek priority Approximately 146m between Albion Terrace and Weymss Street part of Bicycle Boulevard priority
Clark Crescent	Local	Advisory Treatment	East Linear	183	
Colton Avenue	Local	Advisory Treatment	Bike Blvd	728	
Cortlyne Road	Local	Advisory Treatment		615	

Coullis Road	Secondary	Advisory Treatment		272	
Courtabie Avenue	Local	Advisory Treatment	Bike Blvd	292	
Cresdee Road	Local	Advisory Treatment		802	
Crozier Avenue	Secondary	Advisory Treatment	Bike Blvd	477	Approximately 118 metres between Adair Street and Pope Street part of Bicycle Boulevard priority
Damin Ave	Local	Advisory Treatment		104	
Day Street	Local	Advisory Treatment	Bike Blvd	269	
Deans Road	Local	Advisory Treatment	West Linear	422	
Derwent Avenue	Secondary	Advisory Treatment	Bike Blvd	453	Approximately 202 metres between Moules Road and Morialta Road part of Bicycle Boulevard priority
Diane Avenue	Local	Advisory Treatment	Bike Blvd	200	
Donaldson Drive	Local	Advisory Treatment	East Linear	40	
Dryden Street	Local	Advisory Treatment		462	
Durant Avenue	Local	Advisory Treatment	Bike Blvd	385	
Dutton Avenue	Local	Advisory Treatment		196	
East Street	Local	Advisory Treatment		394	
Edward Street	Local	Advisory Treatment		820	
Ellerslie Drive	Local	Advisory Treatment		455	
Emanuel Street	Secondary	Advisory Treatment		347	
Eve Street	Local	Advisory Treatment		24	
Fairleys Road	Local	Advisory Treatment		533	Review traffic speeds and volumes post advisory treatment implementation
Flora Terrace	Local	Advisory Treatment		106	

Forest Avenue	Secondary	Advisory Treatment	Bike Blvd	1110	Review traffic speeds and volumes post advisory treatment implementation
Fourth Street	Secondary	Advisory Treatment	Bike Blvd	394	
Fox Ave	Local	Advisory Treatment		548	
Frank Street	Local	Advisory Treatment	Bike Blvd	442	
Freeman Avenue	Local	Advisory Treatment		494	
Frost Street	Local	Advisory Treatment	Bike Blvd	281	
Gameau Road	Local	Advisory Treatment	West Linear	390	Review traffic speeds and volumes post advisory treatment implementation
George Street	Secondary	Advisory Treatment	Bike Blvd	1690	Monitor and review speed environment to determine appropriate advisory treatment format. Approximately 22m between Avenue Road and La Scala Court part of Bicycle Boulevard priority
Gilbert Street	Local	Advisory Treatment		584	
Gladstone Avenue	Secondary	Advisory Treatment	Bike Blvd	693	
Glen Stuart Road	Secondary	Advisory Treatment		1060	Monitor and review speed environment to determine appropriate advisory treatment format.
Graves Street	Secondary	Traffic Calming and Advisory Treatment	Bike Blvd	1610	Width not appropriate for bicycle lanes. Investigate traffic calming measures to reduce 85th percentile speeds. Approximately 342 metres between Frost Street and Pope Street part of Bicycle Boulevard priority
Gray Street	Local	Advisory Treatment		498	

Griggs Drive	Local	Advisory Treatment	East Linear	275	
Hallet Avenue	Local	Advisory Treatment		13	
Hambledon Road	Local	Advisory Treatment	Bike Blvd	979	Approximately 52 metres between Ballater Avenue and Alan Avenue part of Bicycle Boulevard priority
Hamilton Terrace	Local	Advisory Treatment		325	
Hancock Avenue	Local	Advisory Treatment	Bike Blvd	310	
Heading Avenue	Local	Advisory Treatment		387	
Heather Court	Local	Advisory Treatment	East Linear	246	
Hectorville Road	Secondary	Advisory Treatment		906	
Highland Ave	Local	Advisory Treatment		466	
Hill Street	Local	Advisory Treatment	West Linear	814	Review traffic volumes post LATMP implementation
Hockley Terrace	Local	Advisory Treatment		58	
Homes Ave	Local	Advisory Treatment		212	
Hudson Avenue	Secondary	Advisory Treatment	Bike Blvd	385	
James Street	Secondary	Advisory Treatment	4th Creek	1030	
Jan Street	Local	Advisory Treatment		124	
Jenkins Ave	Local	Advisory Treatment		679	
Junction Road	Local	Advisory Treatment	West Linear	184	
Jury Avenue	Secondary	Advisory Treatment	Bike Blvd	298	
Kapoola Avenue	Secondary	Advisory Treatment	West Linear	314	
Kelvin Avenue	Local	Advisory Treatment		171	
Kimber Place	Local	Advisory Treatment	East Linear	66	

Koonga Avenue	Local	Advisory Treatment	Bike Blvd	152	Approximately 63m between Rostrevor Avenue and Courtabie Avenue, and 25 m between Forest Avenue and Jury Avenue part of Bicycle Boulevard priority
Koongarra Avenue	Local	Advisory Treatment		10	
La Scala Court	Local	Advisory Treatment	Bike Blvd	103	
Laver Street	Local	Advisory Treatment	Bike Blvd	418	
Leabrook Drive	Local	Advisory Treatment	4th Creek & Bike Blvd	2256	Adjacent Fourth Creek Trail Approximately 135 metres between Rostrevor Avenue and Civic Centre part of Bicycle Boulevard priority
Leonard Street	Local	Advisory Treatment		402	
Liascos Avenue	Local	Advisory Treatment	Bike Blvd	223	Approximately 120 metres between Graves Street and Frank Street part of Bicycle Boulevard priority
Lillian Street	Local	Advisory Treatment	East Linear	75	
Lincoln Road	Local	Advisory Treatment	West Linear	655	
Lorne Avenue	Local	Advisory Treatment		690	
Lower Athelstone Road	Secondary	Advisory Treatment		1610	Monitor and review speed environment to determine appropriate advisory treatment format.
Manresa Court	Local	Advisory Treatment		329	
Maple Road	Local	Advisory Treatment	East Linear	47	
Marybank Terrace	Local	Advisory Treatment		206	
Maryvale Road	Secondary	Advisory Treatment		1470	Monitor and review speed environment to determine appropriate advisory treatment format.

Maynard Avenue	Local	Advisory Treatment	4th Creek	332	Part of Fourth Creek Trail. Approximately 200 metres as part of Fourth Creek priority
McShane Street	Secondary	Advisory Treatment	West Linear	676	
Meadow Avenue	Secondary	Advisory Treatment		349	
Mines Road	Local	Advisory Treatment	West Linear	436	
Moore Street	Local	Advisory Treatment		345	
Moorlands Road	Secondary	Advisory Treatment		374	
Morialta Road	Local	Advisory Treatment	Bike Blvd	1130	DPTI owned Approximately 913m between Durant Avenue and Stradbroke Road part of Bicycle Boulevard priority
Morialta Road West	Local	Advisory Treatment		314	
Moules Road	Secondary	Bike Lanes	Bike Blvd	811	DPTI owned Bicycle lanes are painted within 10m of a school crossing but not rest of road. Appears wide enough to maintain parking lanes as well bike lane in each direction. Approximately 562m between St Bernards Road and Derwent Avenue part of Bicycle Boulevard priority
Naomi Way	Local	Advisory Treatment	East Linear	63	
Naylor Avenue	Local	Advisory Treatment		222	
North Street	Local	Advisory Treatment		579	
Ozone Parade	Local	Advisory Treatment	East Linear	527	
Palumbo Avenue	Local	Advisory Treatment		315	
Patful Street	Local	Advisory Treatment	4th Creek	169	

Paula Street	Local	Advisory Treatment	East Linear	146	
Peckham Street	Local	Advisory Treatment		79	
Pierson Street	Local	Advisory Treatment		308	
Playford Road	Local	Advisory Treatment	Bike Blvd	762	Approximately 33m between Diane Avenue and Robran Court SUP, 140m between Forest Street and Adair Street part of Bicycle Boulevard priority
Pope Street	Secondary	Advisory Treatment	Bike Blvd	202	
Quinn Avenue	Local	Advisory Treatment		99	
Ramsey Avenue	Local	Advisory Treatment	East Linear	183	
Reid Avenue	Secondary	Traffic Calming and Advisory Treatment		1630	Width not appropriate for bicycle lanes. Investigate traffic calming measures to reduce 85th percentile speeds.
Renfrey Avenue	Local	Advisory Treatment		151	
Reynell Road	Local	Advisory Treatment		623	
Richardson Avenue	Local	Advisory Treatment		199	
River Drive	Local	Advisory Treatment	East Linear	887	
Robran Court	Local	Advisory Treatment	Bike Blvd	137	
Robson Road	Local	Advisory Treatment	4th Creek & Bike Blvd	467	Approximately 90 metres between Binnswood Street and Montacute Road part of Fourth Creek priority, rest Bicycle Boulevard priority

Ross Road	Local	Advisory Treatment	Bike Blvd	917	Review traffic speeds and volumes post advisory treatment implementation. Approximately 189 metres between Laver Street and Robson Road part of Bicycle Boulevard priority
Rostrevor Avenue	Local	Advisory Treatment	4th Creek & Bike Blvd	684	Approximately 47 metres between bridge and Leabrook Drive part of Fourth Creek priority Approximately 480 metres between between Koonga Avenue and Leabrook Drive part of Bicycle Boulevard priority
Savas Road	Secondary	Advisory Treatment		491	
Schulze Court	Local	Advisory Treatment	East Linear	167	
Schulze Road	Secondary	Advisory Treatment	East Linear	886	Review traffic speeds and volumes post advisory treatment implementation
Second Street	Local	Advisory Treatment		394	
Seminary Way	Local	Advisory Treatment		184	
Shakespeare Avenue	Secondary	Advisory Treatment	Bike Blvd	900	Review traffic speeds and volumes post advisory treatment implementation Approximately 867m between Glynburn Road and Gladstone Avenue part of Bicycle Boulevard priority
Shepherds Lane	Local	Advisory Treatment	West Linear	239	
Sheppard Street	Local	Advisory Treatment		199	

Silkes Road	Secondary	Traffic Calming and Advisory Treatment	East Linear	1010	Review traffic speeds and volumes post advisory treatment implementation
Simcock Avenue	Local	Advisory Treatment		65	
South Street	Local	Advisory Treatment		468	
Sparks Terrace	Local	Advisory Treatment	Bike Blvd	44	
Stradbroke Road	Secondary	Bike Lanes between Montacute Rd & Gorge Rd. Traffic Calming and Advisory Treatment elsewhere.		2908	Monitor and review speed environment to determine appropriate advisory treatment format.
Sunset Strip	Local	Advisory Treatment		420	
Sycamore Terrace	Secondary	Advisory Treatment	West Linear	286	
Tabitha Drive	Local	Advisory Treatment	East Linear	54	
Tenneal Street	Local	Advisory Treatment	East Linear	78	
Tennyson Avenue	Local	Advisory Treatment		95	
The Dress Circle	Local	Advisory Treatment	East Linear	128	
Tracy Ave	Local	Advisory Treatment	East Linear	88	
Trevor Ave	Local	Advisory Treatment		307	
Urban Avenue	Local	Advisory Treatment	East Linear	339	
Vagnoni Avenue	Local	Advisory Treatment	East Linear	276	
Victor Road	Local	Advisory Treatment	West Linear	861	
Vine Street	Secondary	Advisory Treatment		680	
Wemyss Street	Local	Advisory Treatment	Bike Blvd	91	
Wembley Avenue	Local	Advisory Treatment		18	
Wensleydale Avenue	Local	Advisory Treatment		210	

Windsor Avenue	Local	Advisory Treatment		26	
Woodley Avenue	Local	Advisory Treatment		239	
Wyn Street	Local	Advisory Treatment	Bike Blvd	503	
Yalpara Avenue	Local	Advisory Treatment		415	
Young Street	Local	Advisory Treatment	Bike Blvd	245	Approximately 42 metres between Frank Street and Goodwin Street part of Bicycle Boulevard priority
Yongola Street	Local	Advisory Treatment		112	

Of the above roads Glen Stuart Road is under the care and control of DPTI, and is co-owned by the City of Campbelltown and the Adelaide Hills Council, as such any treatments would need to be agreed upon by Council, DPTI and the neighbouring council before implementation.

G.2 SUP Connections

The following section shows the Shared Use Path (SUP) connections specified as part of the bicycle network.

Figure G.2: Deans Road to Heading Avenue/Lower North East Road

Figure G.3: View of Connection to North of Lower North East Road

The existing footpath connecting Deans Road with Heading Avenue/Lower North East Road provides a total width of 3m and is currently partly sealed. This could be upgraded to a 3m sealed shared use path.

Figure G.4: Morialta Road to Morialta Road West

Figure G.5: View of existing bridge over drainage channel

As can be seen in Figure G.5 the bridge connecting Morialta Road and Morialta Road West is too narrow for shared pedestrian and cyclist use. An upgrade to this bridge in terms of width will increase the safety of both pedestrians and cyclists using the bridge.

Figure G.6: Alan Avenue to Gorge Road

Figure G.7: View of Connection to the North from Alan Avenue

The existing path connecting Alan Avenue and Gorge Road would require directional signage and upgrades to provide a SUP.

Figure G.8: Emanuel Street to Sunset Strip

Figure G.9: View of Existing Connection

The barriers preventing vehicle access through this connection are currently not cyclist friendly. It is recommended these barriers are replaced to allow easier cyclist access but not encourage high cyclist speeds on entry and exit.

Figure G.10: Trevor Avenue to Highland Avenue

Figure G.11:View of Existing Connection

Cyclist access between Trevor Avenue and Highland Avenue is provided, although improved signage is required.

Figure G.12: Highland Avenue to Seminary Way

Figure G.13: View of Existing Path to East

A paved path currently provides a link between Highland Avenue and Seminary Way, which would require widening and upgraded kerb ramps to provide a formal shared use path.

Figure G.14: Schulze Court to Hamilton Terrace/Manresa Court

Figure G.15: View of Existing Path from Hamilton Terrace to East

Currently an unsealed path links Hamilton Terrace with Gorge Road adjacent Schulze Court / Manresa Court. The footpath on the east side of Schulze Court continues through to Gorge Road. A formal shared use path connection can be provided between Hamilton Terrace and Schulze Court, and incorporate a connection to Gorge Road SUP.

Figure G.16: Young Street to Gorge Road

Figure G.17: View North of Existing Footpath

There would be a need to increase the width of the existing footpath to provide a shared use path and install kerb ramps on Young Street for cyclists to utilise.

To the west, there would be a similar requirement for the connection between Clairville Road and Young Street. This will also require the provision of a cyclist right turn facility from Clairville Road.

Figure G.18: Clairville Road to Young Street link

Figure 5.19: Clairville Road Median Refuge

A concept design showing the widening of the path, kerb ramp upgrades and right turn bicycle lane is shown as Figure G.20

Figure G.20: Shared use path between Clairville Road and Young Street Concept Design

The existing sealed path should be widened, with widened and upgraded kerb ramps provided at Manresa Court.

Figure G.21: Manresa Court to Maryvale Road

Figure G.22: View East of Existing Connection Manresa Court to Maryvale Road

The existing sealed path should be widened, with appropriate kerb ramps provided at Colton Avenue and Lorne Avenue.

Figure G.23: Colton Avenue to Lorne Avenue

Figure G.24: View East of Existing Connection

The existing path connection between Robran Court and Playford Road should ideally be widened, and signed warning of cyclists with appropriate giveway sign adjacent the fence and appropriate kerb ramps provided at Robran Court.

Figure G.25: Robran Court to Playford Road

Figure G.26: View North of Existing Connection

The existing sealed path and kerb ramps should be widened as appropriate and possible in the constraints of the adjacent private property Anderson Court and Diane Avenue. Appropriate cyclist warning signage and give way sign should be considered/installed adjacent the fence narrowing point.

Figure G.27: Anderson Court to Diane Avenue

Figure G.28: View Northeast of Existing Connection

G.3 Off Street Bicycle Routes

Linear Park

Linear Park connects Athelstone through the edge of Adelaide CBD to Henley Beach and also conjoins with a short section of pathway alongside the O-Bahn away from the river. The shared use pedestrian and cycle path generally runs on both sides of the River Torrens, and forms the northern boundary of the City of Campbelltown Council area. The paths on the southern side are the responsibility of the City of Campbelltown.

Figure G.29: Linear Park Path Intersection

Figure G.30: Linear Park and Signage

The major infrastructure issues identified with Linear Park are the lack of informative and directional signage on and exiting the trail, and a lack of bicycle parking facilities at intermediate locations along Linear Park. The lack of regular lighting is also a limiting factor in use of the paths as commuter routes during winter evenings. Some upgrades to lighting should be considered although this will need to be balanced with impact on the natural habitat, adjoining residential amenity and potential security concerns.

The popularity of the Linear Park route also gives rise to concerns over conflict between pedestrians and cyclists. Some of this conflict is as a result of the overall volumes, which should be monitored at the busiest locations to determine if the path should be widened or separate pedestrian and cyclist facilities provided. Some conflict arises due to inappropriate behaviour of cyclists travelling too fast or not using a bell to warn pedestrians, pedestrians not being aware of other users and dogs that are not under proper control. Additional information and educational signage could also be considered to encourage more appropriate and considerate sharing of the path facility.

These issues should be addressed through the River Torrens Linear Park Coordinating Committee as part of the management and upgrades to Linear Park. Signage upgrades should also be integrated within the Councils proposed Wayfinding Strategy to be developed as a recommendation from the Pedestrian Access and Mobility Plan.

Third Creek Trail

Third Creek Trail consists of 3.2 km of walkways, in a northwest – southeast orientation. In the City of Campbelltown it joins Glynburn Road at the Firle Shopping Centre, and Magill Road adjacent to the Old Norton Summit Road intersection. There are a number of sections along this creek where the overall width is very limited. It is therefore recommended that this trail be maintained and upgraded as identified in the Chain of Trails Master Plan as a walking route and not identified as a bicycle route in this plan.

The only exception to the above is the proposed bridge connection that would link Moore Street and Freeman Avenue, location shown on Figure G.31, which would provide a more direct connection for the bike network. This bridge should be constructed as a shared pedestrian and cyclist facility, with connecting shared use paths to Moore Street and Freeman Avenue.

Figure G.31: Moore Street to Freeman Avenue (Across Third Creek)

Figure G.32: Moore Street to Freeman Avenue (Across Third Creek)

Fourth Creek Trail

Fourth Creek Trail consists of 6 km of walkways, in a northwest – southeast orientation. In the City of Campbelltown it travels between the River Torrens/Linear Park to Morialta Recreation Area. The route offers potential connections to 3 schools as well as potential connection to the Campbelltown Library and other local retail and community destinations. As such Fourth Creek Trail has the potential to be a central cycling route across the Council area.

The route offers significant opportunities to be upgraded as a cycling route. Leabrook Drive runs alongside the trail (on one or both sides) for large sections to the east of St Bernards Road and could provide a cycle route signed with advisory treatments alongside much of the creek corridor. Further advisory treatments, connectivity issues, directional signage and crossing/bridge upgrades will be required to create Fourth Trail as a quality cycling route.

The Chain of Trails Master Plan includes new paths and pedestrian crossings to complete the trail between Linear Park and Morialta Recreation Area. Directional signage is specified in the plan to provide direction where the trail diverges from the creek onto the local street network. New pedestrian crossings on Sycamore Terrace, Meadow Avenue, St Bernards Road, Forest Avenue and Stradbroke Road are proposed as part of the Chain of Trails Master Plan. To allow the trail to be appropriate for cyclists, these proposed crossings as well as the existing pedestrian crossings on the route need to be designed for cyclists and pedestrians.

It is considered that in the short to medium term, a suitable route can be developed in close proximity to Fourth Creek using advisory treatments on adjoining streets, except for three sections that will require shared use path connections. In the longer term, proposed upgrades to paths and new sections of paths (including new bridges) could be designed to be suitable as an advisory or formal shared use path for pedestrians and cyclists. The sections that would require a shared use path for connectivity as a high priority are summarised below.

Upgrades would be required to the connection from the east end of Binnswood Street to link through to St Bernards Road. The approximate alignment is shown below on Figure G.33.

Figure G.33: Binnswood Street to St Bernards Road link

Figure G.34: View East from Binnswood Street

A section of shared use path would also be required to link Leabrook Drive and Rostrevor Avenue on the south side of Fourth Creek. The approximate alignment is shown below on Figure G.35. Further design of this alignment will be required.

Figure G.35: Leabrook Drive connections at Rostrevor Avenue and Civic Centre

Similarly a shared use path connection linking the end of Leabrook Drive (shown on Figure G.36) to the back of the Civic Centre would be beneficial. This approximate alignment is also shown on Figure G.35. Further design on these alignments will be required.

Figure G.36: Leabrook Drive view west to back of Civic Centre

Figure G.37: View North of Rostrevor Avenue Bridge Connection

Subject to the level of pedestrian and cyclist use, there may be a requirement to upgrade the existing bridge (shown in Figure G.37) to be suitable for shared cyclist and pedestrian use.

Towards the north western end, there would be a need to provide a shared use path connection between Clairville Road and Lower North East Road as there are no suitable alternative routes that would permit a safe crossing of Lower North East Road. The existing path would need to be sealed and widened to be suitable for shared pedestrian and cyclist use. There is however an appropriate median refuge crossing already available on Lower North East Road.

Figure G.38: Lower North East Road to Clairville Road Path

Figure G.39: Lower North East Road to Clairville Road Path

The existing path and bridge linking Koonga Avenue to Leabrook Drive should also be monitored for future levels of pedestrian and cyclist use and if required be widened to be more appropriate for shared pedestrian and cyclist use. The path connections in this location are also narrow and should be widened or realigned where this is feasible with adjoining land ownership and tree constraints.

Figure G.40: Koonga Avenue to Leabrook Drive Bridge

Figure G.41: Koonga Avenue to Leabrook Drive Path

The bridge linking Hancock Avenue to Montacute Road should also be monitored for future levels of pedestrian and cyclist use and if required be widened to be more appropriate for shared pedestrian and cyclist use.

Figure G.42: Hancock Avenue Bridge

Figure G.43: View of Existing Bridge to North

Where the trail converges for pedestrians and cyclists, it should be signed with directional signage suitable for both pedestrians and cyclists.

Fifth Creek Trail

Fifth Creek Trail consists of 4.4 km of walkways, in a northwest – southeast orientation. In the City of Campbelltown it travels from the River Torrens (Linear Park) to Black Hill Conservation Park.

New sections of path proposed to provide missing connections (such as through St Ignatius College owned land adjacent to Gorge Road) as well as path upgrades are outlined in the Chain of Trails Master Plan. New formal pedestrian crossings are proposed on George Street, Schulze Road and Gorge Road as part of the plan. As with Third Creek trail, many of the sections of the trail and creek are noted with width, grade and access constraints. It is therefore recommended that the trail be implemented as a pedestrian oriented trail as identified in the Chain of Trails Masterplan.

At the northern end of Fifth Creek, advisory treatments along Tracy Avenue and Heather Court will parallel Fifth Creek and provide local bicycle connectivity to Linear Park.

G.4 Arterial Roads

G.4.1 North South Routes

Darley Road / Newton Road / St Bernards Road Corridor

Darley Road generally has three traffic lanes in each direction, sometimes narrowing to two vehicle lanes in one or both directions, with a central median and right turn lanes along its length. Darley Road continues as Newton Road to the south and Sudholz Road to the north, and provides access to Paradise Interchange. When Darley Road continues as Newton Road and St Bernards Road to the south it generally has two traffic lanes in each direction, and is separated by sections of central median islands, painted medians and right turn lanes.

The Darley Road / Newton Road / St Bernards Road corridor currently has no bicycle lanes or cyclist provision. Pedestrian Actuated Crossing facilities are provided at existing intersection traffic lights as well as adjacent to St Francis of Assisi School, to the north of Morialta Road West, adjacent the Finchley Plaza Shopping Centre, and between Magill UniSA Campus and Edward Street Car Park.

Median crossings are provided at the following locations;

- between Hambledon Road and Andrea Avenue
- narrow median gap to the north of Clairville Road
- north of Reynell Road
- adjacent Romeo's Foodland Shopping Centre;
- south of Sparks Terrace
- adjacent Magill Senior Citizens Centre (between Murray Avenue and Central Avenue); and
- adjacent to St George Church and Cemetery.

Council and DPTI recognise there is minimal road width available and the implementation of bicycle lanes on Darley Road, Newton Road and St Bernards Road is not currently being progressed by DPTI. As such priority for the implementation of advisory treatments on a north south route parallel to the arterial route of Darley Road/ Newton Road/St Bernards Road should be high.

Allowing cyclists to ride on footpaths generally allows for an alternative to sharing the road with vehicles particularly on a busy corridor. However, this should not deter from the necessity to provide a safe north south route parallel to the Darley Road/Newton Road/St Bernards Road corridor.

Several routes on the local street network intersect with the Darley Road / Newton Road / St Bernards Road corridor and are summarised in Table G.2 below.

Table G.2: Newton Road Intersections

ID	Street 1	Street 2	Type of Intersection	Proposed Treatment
N1	Hambledon Road	Clairville Road	Offset T Intersection	Existing median crossings 25m south of Hambledon Road and 40m north of Clairville, consider moving closer to intersection if possible. Designate shared use paths to provide connections.
N2	Albion Terrace	Graves Street	Offset T Intersection	Upgrade PAC to south for cyclist use and link with shared use path connections.
N3	Cresdee Road	Playford Road	Offset T Intersection	Traffic Signals at Playford Road intersection, shared use path to connect to signals on west side
S1	Fourth Creek Trail	Leabrook Drive	Offset T Intersection	Install median Refuge adjacent Fourth Creek, shared use path on east side of road linking crossing and Leabrook Drive. May need to slightly reduce length of right turn lane at signals.
S2	Ross Road	Reynell Road	Offset T Intersection	Existing median refuge north of Reynell. Designate shared use paths to provide connections.
S3	Reid Avenue	Savas Road	Offset T Intersection	Existing median Refuge to north. Designate shared use paths to provide connections.
S4	Leonard Street	Morialta Road West	Offset T Intersection	PAC to north of Morialta Road W before Leonard St. Upgrade for cyclists and provide shared use path connections.
S5	Arthur Street	Moules Road	Offset T Intersection	PAC south of Arthur. Upgrade for cyclists and provide shared use path connections
S6	Colton Avenue	Church Street	Offset T Intersection	Likely to be addressed as part of bike boulevard program. May require PAC.
S7	Edward Street	-	T intersection	PAC 75m south – provision for cyclists. Designate shared use path to connect to Magill Campus.

Safe crossing provision of Darley Road is available as part of the Linear Park running underneath Darley Road.

The proposed crossing treatment on St Bernards Road at the Fourth Creek Trail / Leabrook Drive crossing (crossing S1) is shown on Figure G.44 as a concept design. The installation of a median refuge, two kerb ramps and adjustments to the line marking is estimated to cost approximately $25,000. Designating the section of shared use path will be dependent on the ability to revise the location or format of the bus shelter.

Figure G.44: Crossing S1 Proposed Treatment Concept Design

Glynburn Road

Glynburn Road generally has two traffic lanes in each direction, and is separated by sections of central median islands, painted medians and right turn lanes.

Glynburn Road currently has bicycle lanes on both sides of the carriageway. The bicycle lanes are operational 7 to 9 am and 4 to 6 pm in both directions. There is however a short missing section of bicycle lane on the northbound approach to the Magill Road intersection, which was not implemented in conjunction with bicycle lanes on the other three approaches as part of the recent intersection upgrade. This leg of the intersection is in the City of Burnside Council area.

Pedestrian Actuated Crossing facilities are provided at existing intersection traffic lights. Median crossings are provided at the following locations;

- adjacent Richardson Avenue/Firle Shopping Centre; and
- between Shelley Street and Yongala Street.

Several routes on the local street network intersect with Glynburn Road, and are summarised in Table G.3.

Table G.3: Glynburn Road Intersections

ID	Street 1	Street 2	Type of Intersection	Proposed Treatment
GI1	Lewis Road	North Street	Offset T Intersection	Opportunities to provide median refuge north of North St and south of Lewis Rd
GI2	Davis Road	Reid Avenue	Offset T Intersection	Possible opportunity for median refuge.
GI3	Margaret Street	Arthur Street	Offset T Intersection / Traffic Lights at Arthur Street	Install painted bike box at Arthur Street signals
GI4	Firle Shopping Centre	Richardson Avenue	T intersection	Median Refuge Implemented since 2007 plan. Also used by pedestrians – monitor to consider warrant for upgrade.
GI5	Seventh Avenue	Shakespeare Avenue	Offset T Intersection	Likely to be addressed as part of bike boulevard program. May require PAC.

The proposed crossing treatment on Glynburn Road adjacent Lewis Road (crossing GI1) is shown on Figure G.45 as a concept design for two opportunities to provide a formal crossing location. The creation of a median refuge and two kerb ramps is estimated to cost approximately $10-15,000 for each of the two locations. Both bus stops provide only a bus stop post and can therefore be readily relocated by a few metres.

Figure G.45: Crossing GI1 Proposed Treatment Concept Design

The proposed treatment on Glynburn Road at the Arthur Street intersection (crossing GI3) is shown on Figure G.46 as a concept design. The installation of a bike box on the Arthur Street leg of the intersection is estimated to cost approximately $5-10,000. An

option to provide a shared use path on the western side of Glynburn Road would be subject to implementation by the City of Norwood, Payneham and St Peters.

Figure G.46: Crossing GI3 Proposed Treatment Concept Design

G.4.2 East West Routes

Gorge Road

Gorge Road generally has two traffic lanes in each direction, and is separated by sections of central median islands, painted medians and right turn lanes.

Gorge Road currently has bicycle lanes on both sides of the carriageway. The bicycle lanes are operational 7.30 to 9 am and 3 to 6 pm in both directions.

Pedestrian Actuated Crossing facilities are provided at existing intersection traffic lights, as well as adjacent Charles Campbell College. A median crossing is provided approximately 100 metres east of the intersection with Lower North East Road.

Several routes on the local street network intersect with Gorge Road, and are summarised in Table G.4.

Table G.4: Gorge Road Intersections

ID	Street 1	Street 2	Type of Intersection	Proposed Treatment
G1	Day Street	Alan Avenue	Offset T Intersection	Install refuge in existing wide median and provide shared use path connections.
G2	Campbell Road	Jan Street	T Intersection	Upgrade PAC to east for cyclist use and provide shared use path connections.
G3	Avenue Road	Young Street	Offset T Intersection	Install Median Refuge and provide shared use path connections on north side.
G4	Renfrey Avenue	Silkes Road	Offset T Intersection	Existing Median Refuge to west of Silkes Road. Provide shared use path connections on south side.
G5	Stradbroke Road	Stradbroke Road	Roundabout	Further investigation required.
G6	Schulze Court and Schulze Road	Manresa Court	Offset T Intersections	Proposed Pedestrian Crossing in Fifth Creek Trail (Chain of Trails Master Plan)
G7	Fox Avenue	Brookside Road	Crossing	Upgrade PAC 20m southwest for cyclist use
G8	Hockley Terrace	-	T Intersection	Route joins Gorge Road
G9	Coulls Road	-	T Intersection	Route joins Gorge Road

The proposed crossing treatment on Gorge Road adjacent Avenue Road and Young Street (crossing C2) is shown on Figure G.47 as a concept design. The installation of two kerb ramps and a median crossing is estimated to cost approximately $20,000.

Figure G.47: Crossing C2 Proposed Treatment Concept Design

Lower North-East Road

Lower North East Road generally has two traffic lanes in each direction, and is separated by a central median island and right turn lanes.

Lower North East Road currently has bicycle lanes on both sides of the carriageway. The bicycle lanes are operational 4.30 to 6 pm in the northeast direction and 7 to 9 am and 4 to 6 pm in the southeast direction.

Pedestrian Actuated Crossing facilities are provided at existing intersection traffic lights, as well as adjacent the North Eastern Community Hospital.

Median crossings are provided at the following locations;

- Fourth Creek crossing;
- between Mines Road and Heading Avenue;
- between Lennox Street and Brooker Avenue;
- between Brooker Avenue and Hambledon Road; and
- adjacent Robertson Avenue/Firle Shopping Centre.

Lower North East Road recorded a high concentration of cyclist crashes, mainly at intersections where 75% of crashes on Lower North East Road are Right Turn or Right Angle crashes. Despite bicycle lanes that 'disappear' adjacent the Darley Road intersection, only one cyclist crash was recorded here.

Several routes on the local street network intersect with Lower North East Road, and are summarised in Table G.5 below.

Table G.5: Lower North East Road Intersections

ID	Street 1	Street 2	Type of Intersection	Proposed Treatment
L1	James Street	Fourth Creek Trail	Offset T Intersection	Chain of Trails Master Plan uses existing pedestrian refuge crossing. Upgrade in future to PAC if required.
L2	Heading Avenue	Shared Use Path	Crossroads	PAC 10m to northeast. Upgrade footpath that links to Deans Street to shared use path.
L3	Ann Street	Hambledon Road	Offset T Intersection / Traffic Lights at Ann Street	Straight across into shopping centre from Ann Street. Connections to shopping centre from Hambledon Rd
L4	Church Road	Day Street	Offset T Intersection	Connects to Lower North East Rd bike lanes. Install SUP and median refuge.
L5	Brian Grove	Ramsey Avenue	Offset T Intersection	Install median refuge adjacent Brian Grove and SUP on south side of Lower North East Road.
L6	George Street	-	T Intersection / Traffic Lights	Upgrade traffic signals to provide cyclist facilities

The proposed crossing treatment on Lower North East Road adjacent Brian Grove and Ramsey Avenue (crossing L5) is shown on Figure G.48 as a concept design. The installation of a kerb ramp and creation of two median refuges is estimated to cost approximately $15,000.

Figure G.48: Crossing L5 Proposed Treatment Concept Design

Magill Road

Magill Road generally has two traffic lanes in each direction, and is separated by painted median islands and right turn lanes.

Magill Road currently has bicycle lanes on both sides of the carriageway between Glynburn Road and St Bernards Road. The bicycle lanes are operational 4.30 to 6 pm in the east direction and 7.30 to 9 am in the southeast direction.

The Magill Village Master Plan highlights the continuation of the bicycle lanes on Magill Road to the east of St Bernards Road as a critical part of the Master Plan. The carriageway of Magill Road will be narrowed to create wider footpaths, additional street trees and a dedicated and uninterrupted bicycle lane. The section of Magill Road between Pepper Street and St Bernards Road is anticipated to be reduced to a 40km/h speed limit.

Pedestrian Actuated Crossing facilities are provided at existing intersection traffic lights as well as adjacent Birkinshaw Avenue and adjacent Magill Primary School.

None of the midblock crashes recorded on Magill Road occurred on the eastern end of Magill Road where there are currently no on street bicycle lanes. However, 50% of midblock crashes occurred outside of the bicycle lanes operating times.

Several routes on the local street network intersect with Magill Road, and are summarised in Table G.6.

Table G.6: Magill Road Intersections

ID	Street 1	Street 2	Type of Intersection	Proposed Treatment
Ma1	Dryden Street	-	T intersection	No direct Burnside connection. Seek to implement shared use path or permanent bike lanes linking Dryden St to Gladstone Ave/Barnes Ave in future along Magill Road.
Ma2	Gladstone Avenue	Barnes Avenue	Offset T Intersection	Install median refuge to west of crossing. PAC 100m west of intersection.
Ma3	Lorne Avenue	Rowland Road	Offset T Intersection	PAC 25m east of Lorne Avenue. Upgrade for cyclists and SUP connections
Ma4	Vine Street	-	T intersection	No direct Burnside connection.

The proposed crossing treatment on Magill Road near Dryden Street (crossing Ma1) is shown on Figure G.49 as a concept design. The installation of two kerb ramps and a median refuge is estimated to cost approximately $20,000.

Figure G.49: Crossing Ma1 Proposed Treatment Concept Design

The proposed crossing treatment on Magill Road between Gladstone Avenue and Birkinshaw Avenue (crossing Ma2) is shown on Figure G.50 as a concept design. The installation of two kerb ramps, a median refuge and the designation of two sections of shared use path is estimated to cost approximately $20,000.

Figure G.50: Crossing Ma2 Proposed Treatment Concept Design

Montacute Road

Montacute Road generally has two traffic lanes in each direction, and is separated by a central median island and right turn lanes.

Montacute Road currently has bicycle lanes on both sides of the carriageway. The bicycle lanes are operational 4 to 6 pm in the east direction and 7 to 9 am in the west direction.

Pedestrian Actuated Crossing facilities are provided at existing intersection traffic lights, as well as adjacent East Torrens Primary School.

Median crossings are provided at the following locations:

- Catholic Church Hectorville adjacent Piccadilly Crescent;
- between Robson Road and Moorlands Road
- to the east of Moorlands Road connecting to Fourth Creek;
- adjacent Elliot Court
- adjacent Campbelltown City Council Offices; and
- adjacent Newton Village.

Several routes on the local street network intersect with Montacute Road, and are summarised in Table G.7.

Table G.7: Montacute Road Intersections

ID	Street 1	Street 2	Type of Intersection	Proposed Treatment
M1	Hectorville Road	-	T intersection / Traffic Lights	Use PAC (upgrade to cyclists) to connect to SUP and Fourth Creek Trail on Maynard
M2	Meadow Avenue	Robson Road	Offset T Intersection	Upgrade PAC to west for cyclist use.
M3	Hancock Avenue	-	T Intersection	Median refuge 40 metres west. Provide shared use path connections.
M4	Anderson Avenue	-	T Intersection	Median refuge 30 metres west. Provide shared use path connections.
M5	Rostrevor Avenue	-	T Intersection	Median refuge 120 metres west.
M6	Forest Avenue	Forest Avenue	Crossroads / Traffic Lights	Cyclists cross as part of traffic lights. Consider short bike lanes on approach and bike box.
M7	Gilbert Street	Fairleys Road	Offset T Intersection	Investigate Pedestrian Refuge
M8	Stradbroke Road	Stradbroke Road	Roundabout	Needs further investigation
M9	Maryvale Road	Ellerslie Drive	Offset T Intersection	Cyclists use proposed Montacute bike lanes to turn.

The proposed crossing treatment on Montacute Road between Gilbert Street and Fairleys Road (crossing M7) is shown on Figure G.51 as a concept design. The installation of a median refuge is estimated to cost approximately $20,000, assuming the need for associated kerb ramps. The median can be installed while still allowing right turn access from both streets onto Montacute Road, although restricting right turns would improve the safety for pedestrians and cyclists, and ensure that vehicles waiting to complete the turn within the median did not encroach in to the adjacent travel lanes.

Figure G.51: Crossing M7 Proposed Treatment Concept Design

Norton Summit Road

Norton Summit Road generally has one vehicle lane in each direction. A bicycle lane on the northern side of the carriageway is provided around the intersection with Glen Stuart Road, for cyclists in a northeast direction (uphill).

The intersection of Norton Summit Road and Glen Stuart Road has a very high crash rate, with 13 cyclist crashes between 2009 and 2013 recorded at this location. 69% of crashes were the same scenario of Right Angle crashes with the cyclist heading in a northeast direction (uphill). This means that in 9 of 13 crashes the cyclists were travelling in the provided bike lane when they were hit.

One route on the local street network intersects with Norton Summit Road, and is summarised in Table G.8 below.

Table G.8: Norton Summit Road Intersections

ID	Street 1	Street 2	Type of Intersection	Proposed Treatment
NS1	Glen Stuart Road	-	T intersection	DPTI roads. Part of larger consulting and planning process as major issues with cyclist safety at this intersection.

On-site observations of vehicles turning from Glen Stuart Road suggests that the Stop sign requirement is poorly observed and that much of the driver focus is on vehicles travelling downhill not uphill. Investigations to relocate the Stop sign on the east edge of Glen Stuart Road to a more prominent location, as well as an additional stop sign in the pavement bars in the centre of Glen Stuart Road should be undertaken. Cyclist warning signage may be appropriate on this approach, and should be placed in a prominent location. Consideration could also be given to painting the existing bicycle lane green to increase its visibility and awareness of the potential for cyclists to be

cycling up Norton Summit Road, although the vehicle turning patterns through the intersection may require regular replacement of the green paint.

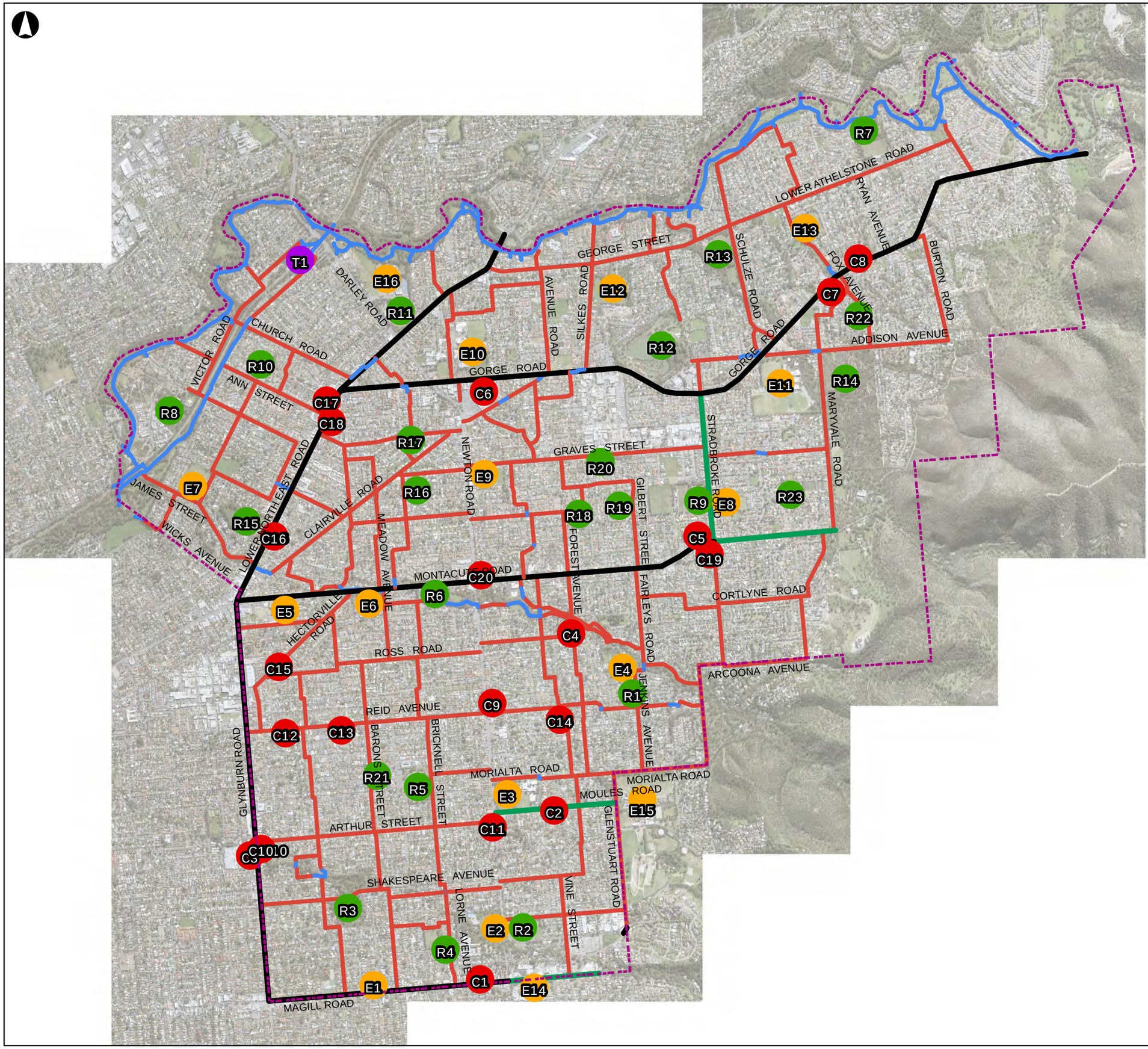
Given DPTI's ownership of Norton Summit Road and DPTI's management of Glen Stuart Road any changes must be undertaken with consultation and cooperation between DPTI and Council. Further investigation and consultation for a broader concept for the treatment of this intersection in the long run is required, as the above suggestions may not be sufficient. DPTI has indicated a commitment to improving the safety of cyclists at this intersection, working with Council.

The Magill Training Centre redevelopment is anticipated to result in additional traffic turning on to Norton Summit Road from Glen Stuart Road. This is not expected to fundamentally alter the existing crash record, which should be treated as a cyclist black spot study.

Appendix H

H.1 End of Trip Facilities

H.1.1 Bicycle Parking



Legend

- Advisory Treatment
- New or Upgraded Shared Path Connections
- New or Upgraded Bike Lane
- Existing Arterial Road Bicycle Lanes
- Education
- Public Transport
- Commercial/Retail
- Community/Recreation

Issue	Date	By	Chkd	Appd
Final	23-01-17	LK	PF	PF

Metres
0 300 600 1,200

GTAconsultants
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Client
The City of Campbelltown

Job Title
Campbelltown City Council Bike Plan

Drawing Title
Figure H.1 Local Bicycle Network with Activity Generators

Scale at A3
1:25,000

Drawing Status
Final

Job No	Drawing No	Issue
15A1111000	001	A

Table H.1: Locations recommended for Provision of Bicycle Parking

Code	Use	Is there currently bicycle parking provision?	Should changes or increased provision be considered?	Comments
	Education			
E1	St Joseph's School (Tranmere)	Y	Y	
E2	Uni SA Magill Campus and Community Childrens Centre	Y	Y	
E3	Norwood Morialta High School - Middle Campus	Y	Y	
E4	Stradbroke School	Y	Y	
E5	St Joseph's School (Hectorville)	Y	Y	
E6	East Torrens Primary School	Y	Y	
E7	East Marden Primary School	Y	Y	
E8	Thorndon Park Primary School	Y	Y	
E9	Saint Francis of Assisi Primary School	Y	Y	
E10	Charles Campbell College	Y	Y	
E11	Saint Ignatius' College – Senior Campus	Y	Y	
E12	Paradise Primary School	Y	Y	
E13	Athelstone School	Y	Y	
E14	Magill Primary School	NOT IN COUNCIL AREA		
E15	Rostrevor College	NOT IN COUNCIL AREA		
E16	Sunrise Christian School	Y	Y	
	Public Transport Hubs			
T1	Paradise Interchange	Y	Y	Bicycles observed chained to fences
	Commercial / Retail			
C1	Foodland Supermarket	N	Y	
C2	Rostrevor Village Shopping Centre	N	Y	
C3	Firle Plaza	NOT IN COUNCIL AREA		
C4	Forest Avenue Village	N	Y	
C5	Newton Village	Y	Y	

C6	Newton Central Shopping Centre	N	Y	
C7	Athelstone Shopping Centre	N	Y	
C8	Athelstone Village	N	Y	
C9	Foodland	N	Y	
C10	Takeaway Shops	Y	N	
C11	Finchley Plaza Shops	N	Y	
C12	Strip Shops	N	Y	
C13	Post Office, Butcher, Op Shop	N	Y	
C14	Shops	N	Y	
C15	Shops	N	Y	
C16	Strip Shops	N	Y	
C17	Shops	N	Y	
C18	Strip Shops	N	Y	
C19	Rostrevor Shops	N	Y	
C20	Marco Crescent Shopping Centre	N	Y	
	Community/Recreation			
R1	Rostrevor Tennis Club	N	Y	
R2	Playing Fields	N	Y	
R3	The Gums Recreation Ground	N	Y	Provide bicycle parking at southeast boundary
R4	Murray Park Oval and Lorne Ave Tennis Courts	N	Y	
R5	Daly Oval	N	Y	
R6	Dennis Morrissey Park	N	Y	
R7	Athelstone Recreation Reserve	N	Y	
R8	Lochiel Park	N	Y	
R9	Cambelltown City Soccer and Social Club (Oval)	N	Y	
R10	Campbelltown Tennis Club	N	Y	
R11	Campbelltown Memorial Oval	N	Y	Identified as part of Masterplan
R12	Thorndon Park Reserve	Y	Y	Seal area of current bicycle parking provision. Review supply and location.
R13	Max Amber Sportsfield (Oval)	N	Y	
R14	Wadmore Park	N	Y	

R15	Campbelltown Leisure Centre	Y	N	Based on new provision as part of current upgrade.
R16	Charlesworth Park	N	Y	
R17	Unity Park	N	Y	
R18	Playford Road Reserve	N	Y	
R19	Oakdale Avenue Reserve	N	Y	
R20	Graves Street Playground	N	Y	
R21	Galloway Reserve	N	Y	
R22	Fox Avenue Reserve	N	Y	
R23	Padulesi Park	N	Y	

H.2 Development Plan Requirements

The City of Campbelltown sets out several Principles of Development Controls (PDCs) in the '*Transportation and Access*' section of the Development Plan that relate to provision for cyclists as follows

PDC 17: New developments should give priority to and not compromise existing designated bicycle routes.

PDC 18: Where development coincides with, intersects or divides a proposed bicycle route or corridor, development should incorporate through-access for cyclists.

PDC 19: Developments should encourage and facilitate cycling as a mode of transport by incorporating end-of-journey facilities including:

a) showers, changing facilities, and secure lockers
b) signage indicating the location of bicycle facilities
c) bicycle parking facilities provided at the rate set out in Table Cam/3 - Off-street Bicycle Parking Requirements.

PDC 20: On-site secure bicycle parking facilities should be:

a) located in a prominent place
b) located at ground floor level
c) located undercover
d) located where surveillance is possible
e) well lit and well signed
f) close to well used entrances
g) accessible by cycling along a safe, well lit route.

PDC 21: Pedestrian and cycling facilities and networks should be designed and provided in accordance with relevant provisions of the Australian Standards and Austroads Guides.

Additionally, *Table Cam/3* within the City of Campbelltown's Development Plan sets out rates for the provision of bicycle parking.

Melbourne

A Level 25, 55 Collins Street
PO Box 24055
MELBOURNE VIC 3000
P +613 9851 9600
E melbourne@gta.com.au

Brisbane

A Level 4, 283 Elizabeth Street
BRISBANE QLD 4000
GPO Box 115
BRISBANE QLD 4001
P +617 3113 5000
E brisbane@gta.com.au

Adelaide

A Suite 4, Level 1, 136 The Parade
PO Box 3421
NORWOOD SA 5067
P +618 8334 3600
E adelaide@gta.com.au

Townsville

A Level 1, 25 Sturt Street
PO Box 1064
TOWNSVILLE QLD 4810
P +617 4722 2765
E townsville@gta.com.au

Sydney

A Level 6, 15 Help Street
CHATSWOOD NSW 2067
PO Box 5254
WEST CHATSWOOD NSW 1515
P +612 8448 1800
E sydney@gta.com.au

Canberra

A Unit 4, Level 1, Sparta Building,
55 Woolley Street
PO Box 62
DICKSON ACT 2602
P +612 6243 4826
E canberra@gta.com.au

Gold Coast

A Level 9, Corporate Centre 2
Box 37
1 Corporate Court
BUNDALL QLD 4217
P +617 5510 4800
F +617 5510 4814
E goldcoast@gta.com.au

Perth

A Level 27, 44 St Georges Terrace
PERTH WA 6000
P +618 6361 4634
E perth@gta.com.au