GTAconsultants

Campbelltown LGA
Bicycle Plan

Campbelltown City Council
21 December 2010
GS10800

Document Issue

Issue	Date	Description	Project Consultant	Project Manager	Director Approval
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Table of Contents

1. Introduction

1.1 Background

Campbelltown Local Government Area is located on the south-western edge of the Greater Sydney metropolitan area, consisting of a mix of urban and rural land uses. Currently the dominant form of residential development is detached dwellings, with some future Greenfield development expected along with medium to high density housing forms in and around the major centres. Transport infrastructure within the area has predominantly been planned and implemented in response to land releases in the south-west growth area.

In 2006, Campbelltown City Council, in conjunction with Camden Council, developed an Integrated Transport Strategy (ITS) with the objectives of providing improved transport options for local residents to reduce the dependence on private motor vehicles and encouraging local residents to make more sustainable transport choices. As a result of this study, it was recommended that Campbelltown City Council look to review the existing Campbelltown Bike Plan and Pedestrian Access and Mobility Plan (PAMP).

GTA Consultants was commissioned by Campbelltown City Council to evaluate the effectiveness of the existing strategies within the Bike Plan and PAMP and prepare updated Plans including strategies to ensure that both cycling and walking are viable, safe and attractive transport options. Completing a review of both the bicycle and pedestrian plans simultaneously has provided consistency between the two overlapping networks, ultimately providing a consolidated transport network. This report details the findings and recommendations associated with the Campbelltown Bike Plan review.

The current Bike Plan was adopted by Council in 2001. Over the seven year period between 2001 and 2008, Greater Sydney as a whole has become more focused on sustainable ways in which to travel due to financial, environmental and health reasons. As such, there is a need to revisit the 2001 Bike Plan to ensure that Campbelltown has a comprehensive plan in place to encourage cycling as a viable alternative transport mode to replace car-based trips and support active living in the Campbelltown Local Government Area.

1.2 Study Objectives

The Campbelltown Bike Plan seeks to improve the bike network within the Campbelltown local government area with respect to:

- Coherence (with logical connections);
- Directness;
- Safety;
- Comfort;
- Attractiveness; and
- Equal access for all user groups in the community.

The key objectives of the study, as defined by Council, are to:

- Evaluate the effectiveness of the current strategies in place;
- Prepare updated strategies for the Bike Plan that ensure that cycling is a viable, safe and attractive transport choice for residents and visitors with the associated aim of increasing cycling activity; and
- Identify key priorities for a program of works.

With the pressure on funding sources, another key element of the Bike Plan is to identify ways to balance the cost of new facilities with the upgrade of older infrastructure.

1.3 Policy Context

In Australia the policy climate on congestion and pollution, the promotion of local accessibility, and of personal health, has been continuously highlighted. An increase in cycling can be a central factor in offering an environmentally sustainable and health promoting local transport option. Over the years moves to highlight the role for cycling have been taken in a series of key strategic Government policy documents and guidelines as follows:

- National Cycling Strategy 2005-2010;
- RTA Action for Bikes 2010;
- Planning Guidelines for Walking and Cycling (Department of Planning, 2004);
- RTA (NSW) Bicycle Guidelines (2003); and
- Austroads Part 14 – Bicycles.

At a local level Councils are also developing policies and plans which aim to encourage and promote cycling or reduce dependency on car travel. Key Campbelltown City Council documents include:

- 2001 Bicycle Plan;
- Campbelltown Structure Plan;
- Campbelltown and Camden Integrated Transport Strategy;
- Campbelltown Pedestrian Access and Mobility Plan (2001);
- Campbelltown Disability Action Plan (Draft); and
- Footpath Strategy.

1.4 Bike Plan Methodology

The key tasks for the Bike Plan review are to:

- Review the current Bike Plan, existing facilities, mapping data and key destinations;
- Conduct saddle surveys throughout Campbelltown;
- Undertake peak hour cyclist counts;
- Undertake community consultation via:

  - An online cycling questionnaire,
  - A school questionnaire,
  - Public workshop with Council staff, bicycle user groups, other stakeholders and the general public;
- Develop and map a network of new and amended routes and associated facilities, focusing on consolidation of the existing network;
- Prepare a map with an agreed bike network, routes and end-of-trip facilities;
- Prepare a works program, cost estimates and priorities (matched to Council resources);
- Report the priorities and rationale for the network and the works program;
- Develop an education and encouragement action plan with measures to increase cycling participation;
- Provide a map of the agreed Draft Bike Plan for public exhibition; and
- Review the submissions and amend the draft plan.

2. Characteristics of Campbelltown

2.1 Geography and Topography

The Campbelltown Local Government Area (LGA) is located on the southern western edge of Greater Sydney. Bordering LGAs include Camden to the west, Wollondilly to the south, Liverpool to the north and Sutherland to the east. The LGA includes the regional commercial and retail centre of Campbelltown and Macarthur Square, along with the regional industrial centre of Ingleburn, which together account for a majority of the LGAs employment land uses.

In terms of topography, the Campbelltown area is undulating but relatively flat when compared with other LGAs located throughout the Greater Sydney area. The LGA generally slopes downwards from north to south, with some hilly sections such as in the vicinity of Ambarvale.

2.2 Population

According to the 2006 Census, the population in Campbelltown is currently in the order of 143,000 people, a slight decrease from the population reported in the 2001 census. It is a relatively young area, with a large majority of the current population aged between 5 and 54 years of age. Most residents are Australian citizens and were born in Australia. The average weekly household income is just over $1,000, which is approximately $100 lower than the Sydney average, with a relatively high unemployment rate and a resultant high level of public housing in the local area. The traditional family unit makes up just over half of the households in Campbelltown, with a large majority of dwellings being of low density types, such as separate detached homes.

Census data from 2006 indicates that within the LGA a total of 11% of households do not own a vehicle, while 38% of households own one vehicle and 47% own two or more vehicles. This equates to an average car ownership of 1.51 vehicles per household. A comparison of car ownership in Campbelltown and other areas in Sydney is shown in Table 2.1.

Table 2.1: Car Ownership based on Census 2006 Data

Area	Do not own vehicle (% Households)	Own one vehicle (% Households)	Own two or more vehicles (% Households)	Average car ownership (vehicles per household
Campbelltown LGA	11%	38%	47%	1.51
Camden LGA	4%	26%	67%	1.86
Outer Western Sydney	8%	34%	55%	1.65
Greater Sydney	13%	39%	44%	1.44

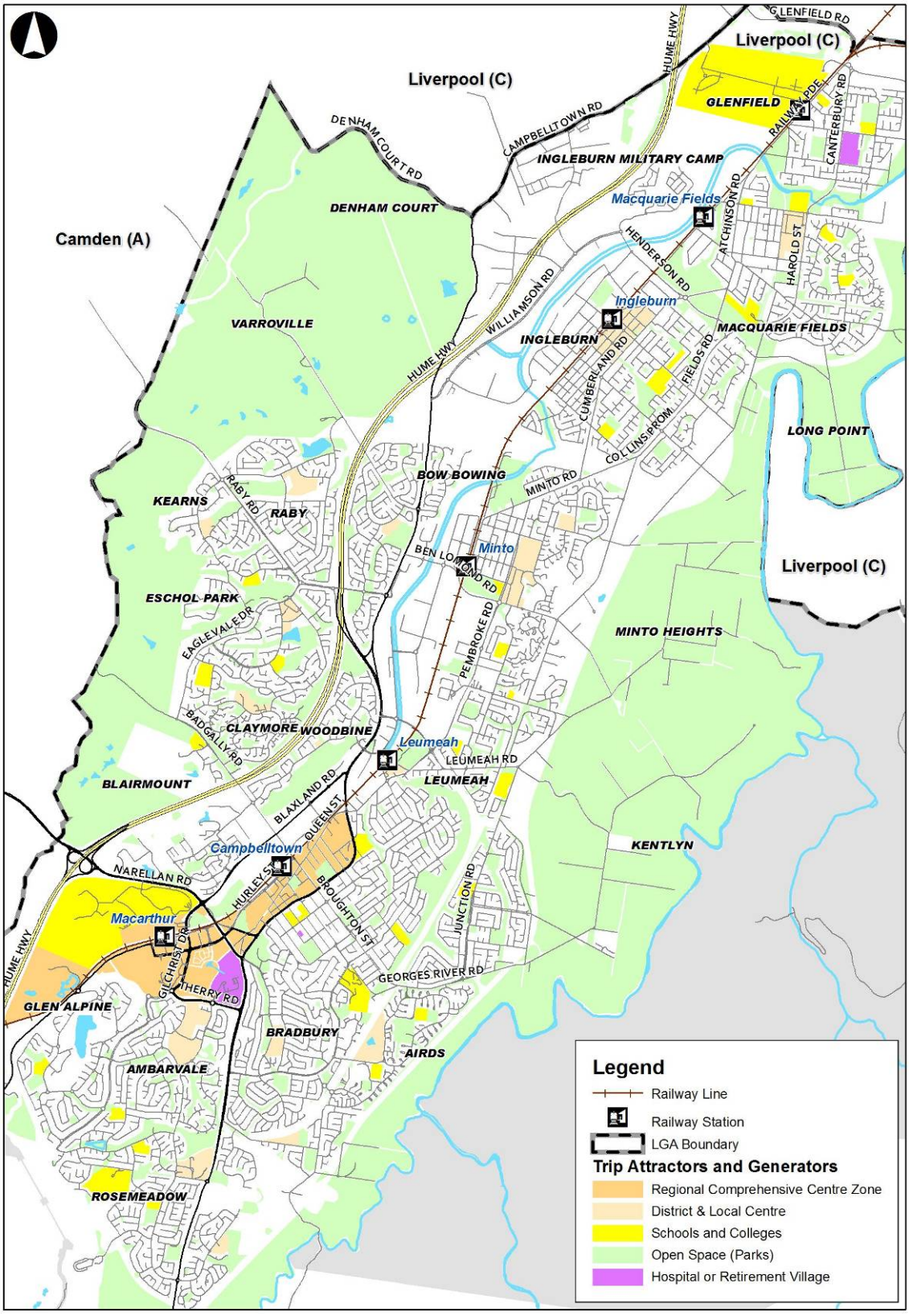
2.3 Trip Attractors and Generators

Trip attractors[1] are important for identifying the places which cyclists will most commonly visit and are useful in determining the main cycle desire lines. The main trip attractors for the Campbelltown LGA and nearby surrounds include regional, district and local centres (commercial, retail and industrial), railway stations, schools or educational establishments, recreational areas and hospital/medical uses.

Figure 2.1 indicates the main trip attractors for the Campbelltown LGA.

[1] A Trip Attractor is defined as an activity, facility or event which attracts or generates the need for travel.

Figure 2.1: Campbelltown LGA Trip Attractors



2.4 Road Network

2.4.1 Road Hierarchy

The administrative/ functional classification of roads in NSW is:

- **State/Arterial** – Predominantly carry through traffic from one region to another, forming principal avenues of communication for urban traffic movements.
- **Regional/Sub Arterial** – Connect the arterial roads of development and carry traffic directly from one part of a region to another. They may also relieve traffic on arterial roads in some circumstances.
- **Collector** – Connect the sub arterial roads to the local road system.
- **Local** – Access roads to properties.

Figure 2.2 shows the road hierarchy for the Campbelltown LGA.

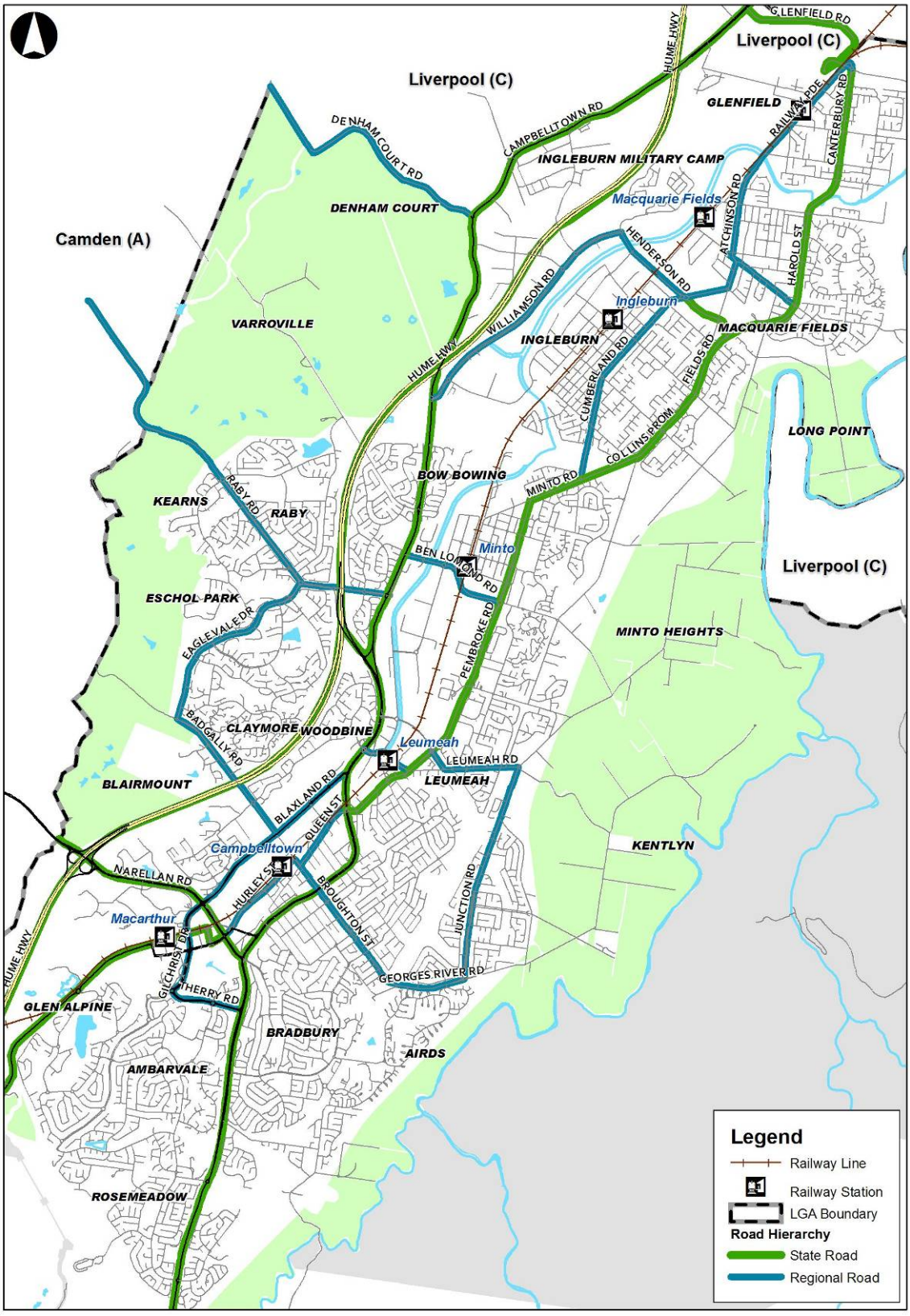
2.4.2 Traffic Volumes

Traffic volume data on the road system has been collated from RTA data for 2005. A summary of the Annual Average Daily Traffic (AADT) volumes for a number of key roads in 2005 are summarised in Table 2.2. The data in Table 2.2 indicates that, in addition to the Hume Highway that runs approximately north-south through the LGA, there are a number of key roads that carry significant volumes of traffic. These roads service both local trips and regional 'through' trips.

Table 2.2: Traffic Volumes in Campbelltown LGA

Road	Volume (AADT)
Narellan Road, Campbelltown	46,613
Campbelltown Road, Leumeah	40,430
Blaxland Road, Campbelltown	31,424
Moore Oxley Bypass, Campbelltown	30,561
Pembroke Road, Leumeah	24,288
Gilchrist Drive, Campbelltown	24,207
Appin Road, Bradbury	21,484
Raby Road, St Andrews	21,040
Minto Road, Minto	17,640
Collins Promenade, Ingleburn	16,121
Therry Road, Ambarvale	13,762
Fields Road, Macquarie Fields	12,555
Glenfield Road, Glenfield	12,232
Badgally Road, Campbelltown	10,043

Figure 2.2: Campbelltown LGA Road Hierarchy



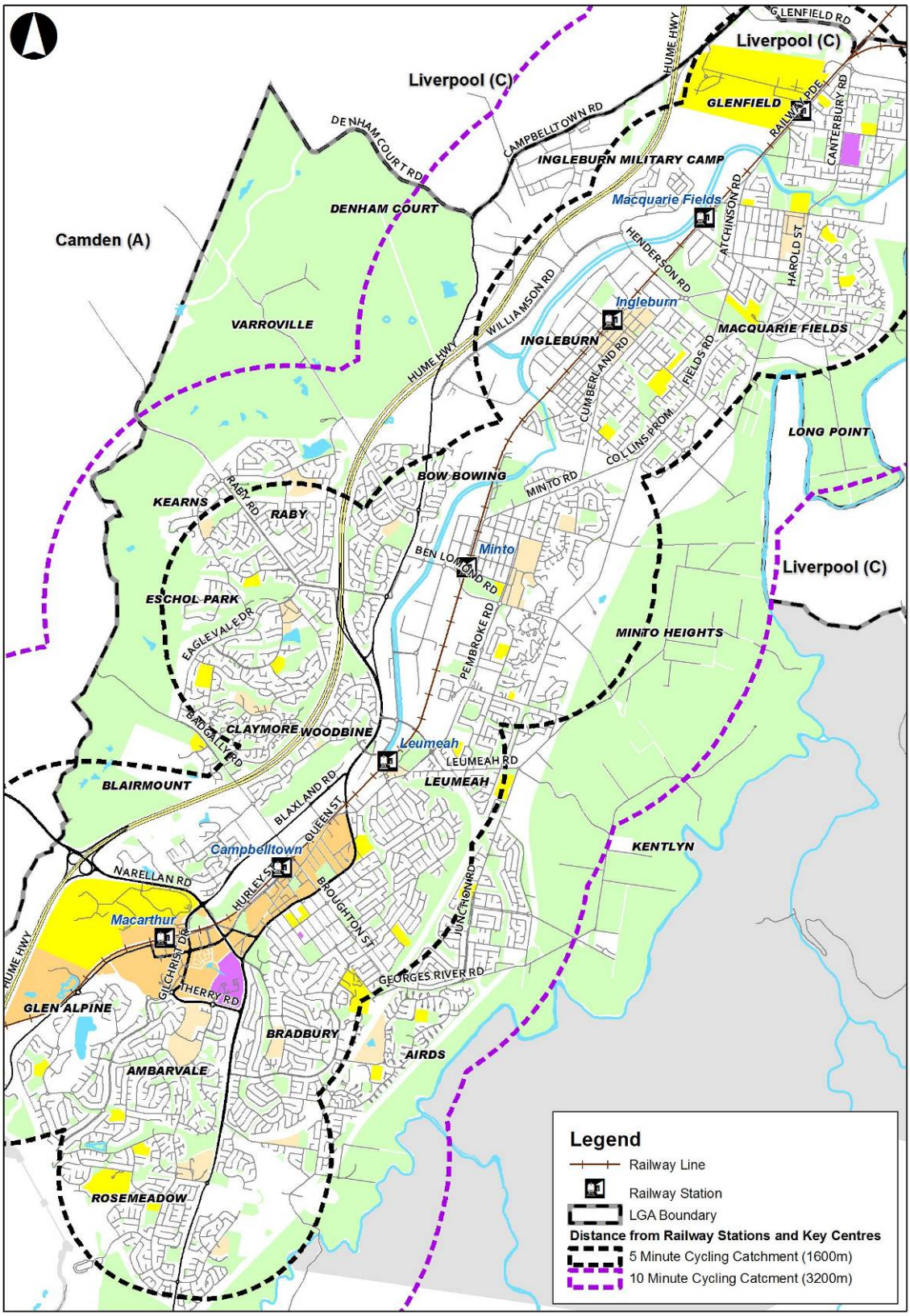
2.5 Existing Bicycle Use

Journey-to-work data was obtained from the results of the 2006 Census published by the Australian Bureau of Statistics. It was found that approximately 0.41% of residents' commuter trips within the Campbelltown LGA are undertaken by bicycle. This is in comparison with 0.53% for the outer Sydney LGAs and 1.36% for the inner Sydney LGAs. These statistics indicate a lower uptake of cycling to work for part of all of trips to and from work in Campbelltown. When comparing the 2006 journey-to-work statistics for commuter trips within the Campbelltown LGA with the 2001 census data (0.51% bicycle mode share), it is noted that there has been a decrease in cycling participation levels of around 19%.

2.6 Potential for Cycling

The current level of bicycle use as referenced in Section 2.5 indicates that there are currently below-average participation levels of cycling within the Campbelltown area. However, Figure 2.3 shows that there is strong potential for cycling to become a serious mode of transport in that the Regional, District and Local centres of Campbelltown LGA are generally contained within a 10-minute cycling radius, which makes cycling a competitive and achievable mode of transport for a range of trip purposes, including trips to railway stations, providing access for longer distance trips outside the LGA.

Figure 2.3: Campbelltown LGA Cycling Catchments



2.7 Benefits and Barriers

The Bike Plan provides Council with a proactive policy to develop and increase the role of the bicycle as an important sustainable transport mode to benefit the health and economic wellbeing of the community. Bicycle travel also provides additional recreational activities and experiences for residents and visitors.

The Bike Plan aims to build strategically on the positive characteristics of bicycle travel while considering the barriers to greater participation.

General Community Benefits

- The bicycle is an ideal vehicle for convenient, door to door travel. It is quick to start, easy to park and impervious to traffic congestion. It is particularly suited for trips up to 5km. This includes a large number of local trips in the vicinity of the Regional and District centres (refer Figure 2.3);
- Cycling travel times are predictable and reliable;
- Construction of a workable bicycle network is relatively cheap and bicycle infrastructure can be easily (and cost effectively) included with road upgrades and maintenance works;
- Bicycle traffic does not pollute, does not emit greenhouse gases, is not noisy and is a practical way of reducing dependency on oil;
- Bicycles take up very little space either when being ridden or when parked;
- Bicycle traffic has a humanising effect on neighbourhoods;
- Cycling is good for staying in shape and is relaxing; and
- Bicycle travel is affordable and accessible to almost all the community.

General Barriers to Cycling

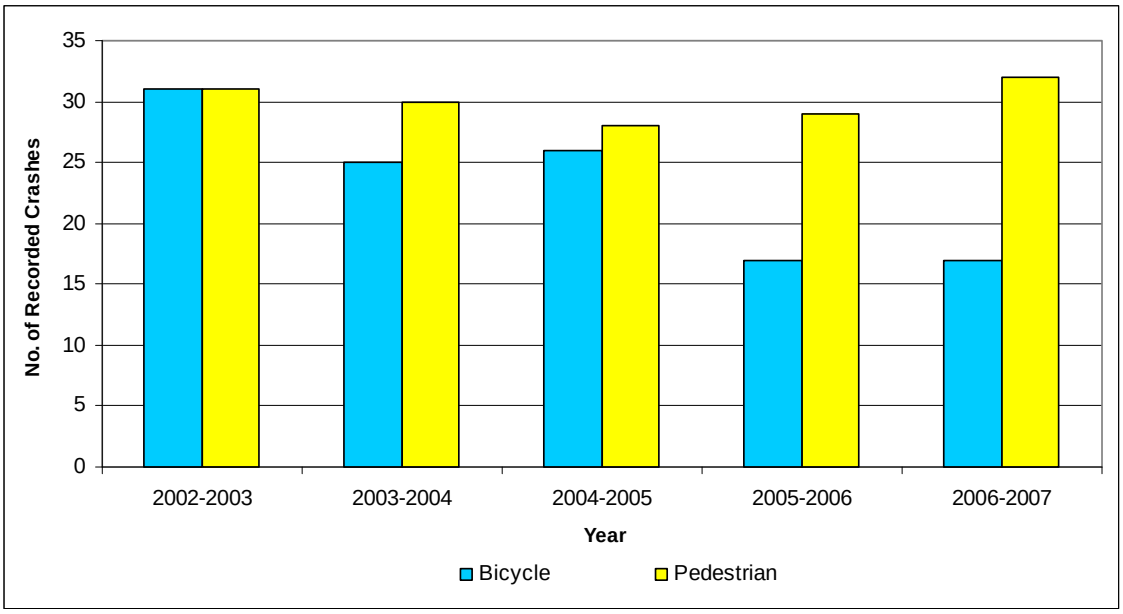
- Fragmented cycling networks with a lack of continuity and connectivity;
- Insufficient knowledge of available network facilities and alternative back street routes;
- Limited number of safe and convenient opportunities to cross major roads;
- Lack of end-of-trip and parking facilities;
- Poor perception of cycling as a physical activity (too hard, too hot, too hilly, too dangerous, too difficult etc);
- Poor integration with general road transport system - high speed and high volume roads along popular trip desire lines, threatening behaviour of motorists;
- Lack of 'how to' knowledge on cycling as an activity e.g. where to ride, what to wear, what type of bike suits, equipment issues, navigation issues;
- Lack of confidence and cycling experience;
- Actual and perceived lack of safety;
- Terrain and weather; and
- Narrow and poorly maintained roads, shoulders and footpaths.

While some of these barriers are beyond intervention, a majority can be managed or addressed by individuals, communities and governments. The actions outlined in the Bike Plan seek to address these issues and create an environment with minimal barriers to cycling.

2.8 Cycling and Road Safety

Bicycle and pedestrian crashes recorded in the Campbelltown area for the 5 year period from July 2002 to June 2007 inclusive were considered as part of this study. Figure 2.4 shows the number of crashes for bicycles and pedestrians over the 5-year period.

Figure 2.4: Bicycle and Pedestrian Crashes – July 2002 to June 2007



The following comments are offered for consideration:

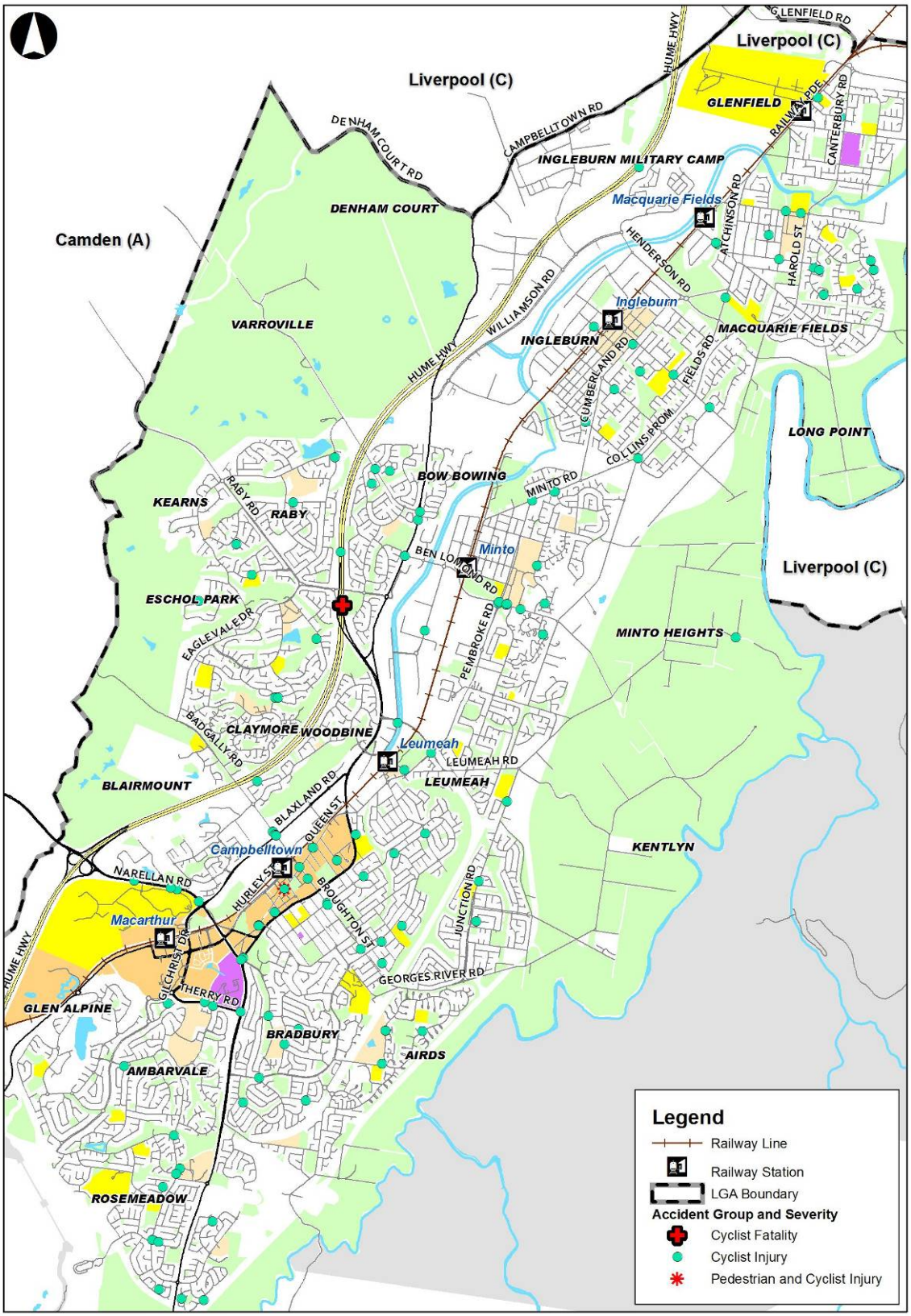
- In the whole of the Local Government area, there was a total of 150 pedestrian crashes, 115 bicycle crashes and 1 bicycle/ pedestrian crash recorded;
- Bicycle crash numbers have been declining over the most recent 5-year period. This could be as a result of:
  - decreasing cyclist numbers (as discussed in Section 2.6),
  - reduced cyclist-vehicle conflict through the provision of new cycling infrastructure by Council, and/or
  - improved driver awareness and/or education of cyclists through RTA and Council advertising, community-based activities such as Bike Week activities, ride-to-work and ride-to-school, or Council's Bicycle Education Centre;
- Pedestrian crash numbers have been relatively constant over the most recent 5-year period;
- Pedestrian and bicycle crashes are well known to be under-reported;
- At total of cyclist 35 crashes were classified as manoeuvring accidents, primarily the result of cyclists emerging from the footpath or vehicles emerging from a driveway. A further 27

cyclist crashes were intersection accidents with vehicles from an adjacent direction (primarily cross-traffic or 90-degree accidents);

- Cyclist crashes were spread throughout the LGA, occurring on both high and low traffic volume roads;
- Only one crash cluster (3 or more bicycle accidents)was noted at the intersection of Badgally Road and Blaxland Road, Campbelltown (3 crashes), however there were a number of locations where two crashes had occurred; and
- One fatal cyclist crash occurred during the 5-year period, on the Hume Highway at Campbelltown Road where a vehicle changed lanes and collided with a cyclist.

Figure 2.5 shows the location of the recorded bicycle crashes.

Figure 2.5: Crash Spot Map for Bicycles



2.9 Pathway User Categories

In NSW the vast majority of pathways are developed for shared use by pedestrians and cyclists. By nature these pathways attract a wide range of community groups as shown in Figure 2.6:

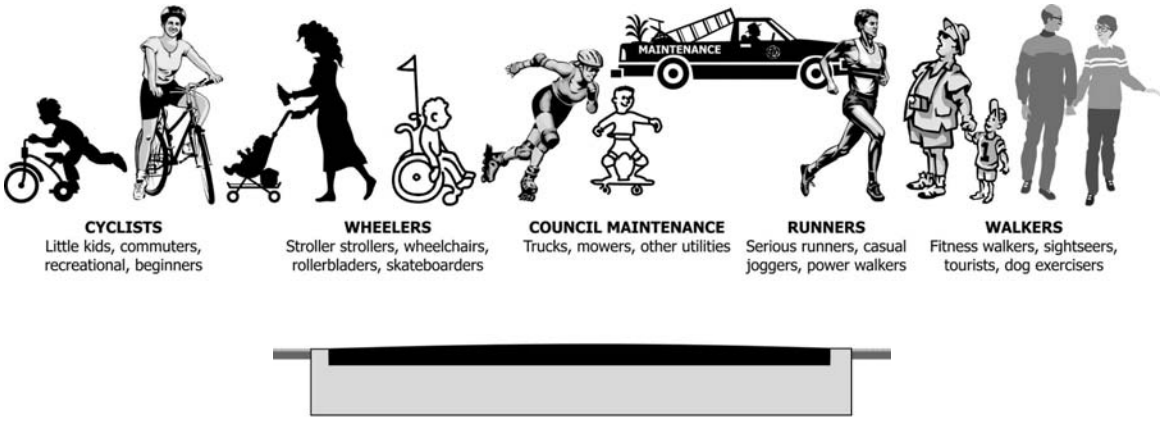
- Commuter cyclists;
- Recreational cyclists and families;
- Roller-bladers;
- Strollers and prams;
- Wheelchairs;
- Council, RTA, Sydney Water and other service vehicles;
- Emergency vehicles;
- Families and tourists on foot; and
- Older people on foot.

In addition to these groups in the general community, there are also special interest groups, such as:

- BMX riders (a trial Olympic event);
- Mountain bike riders who train and race on off road mountain tracks; and
- Road racing cyclists who race and train on roads in the LGA.

These groups are important for sport and tourism and generally require specialist facilities and arrangements such as formal events and marked or constructed tracks. Although many road racers do informal training on the general road network, formal controlled events are required for the actual races.

Figure 2.6: Pathway User Groups



3. Strategic Context

3.1 Council Policies and Plans

This section provides an overview of the cycling issues as referenced in the various planning instruments in Campbelltown City Council, including:

- Social Plan 2004-2009;
- Campbelltown (Urban Area) Local Environmental Plan 2002;
- Campbelltown 2025;
- Campbelltown and Camden Integrated Transport Strategy; and
- Draft South West Subregional Strategy, Department of Planning 2007.

3.1.1 Social Plan 2004-2009

The Social Plan extensively references walking, cycling and public transport as part of Council's overall policy direction to provide a good quality of life for Campbelltown residents and create a healthy and active community and a sustainable environment. Consultation undertaken in the preparation of this plan identified access to transport as a fundamental factor underpinning the quality of life in Campbelltown. Participation in recreation, culture and community events was also identified as a significant contributor to quality of life in Campbelltown. Cycling is an important way of addressing the issues of both transport accessibility and recreation and exercise by acting as both a transport mode and a recreational activity.

The desired outcomes for Campbelltown in relation to traffic and transport are as follows:

- *"A city that is accessible for all communities;*
- *A city with a traffic network that meets its needs, through innovative and cost effective strategies;*
- *A city that has a safe traffic network; and*
- *A city where road infrastructure is maintained at a level that meets the needs of the community.*

These four statements point to a future where there is a road and transport network in place that maximises community accessibility and safety, through the provision of well-maintained and integrated walking, cycling, road, and public transport networks."

The Bike Plan is one way to achieve the outcomes of the Social Plan.

3.1.2 Campbelltown (Urban Area) Local Environmental Plan 2002

The Campbelltown LEP provides a framework for planning and development in the LGA. One of the key objectives of this plan is to encourage the provision of a safe and efficient system for movement between the various parts of the urban area of the City of Campbelltown and to other places,

particularly through the use of public transport, and encouraging cycling and walking. This ensures that in assessing a proposed subdivision or development of land, Council should consider the matters of vehicular, cycle and pedestrian circulation networks in relation to the development, as well as nearby public transport.

3.1.3 Campbelltown 2025

The document *Campbelltown 2025 Looking Forward* provides a vision for the future along with a series of strategic directions in helping the City to move forward. Within the strategic directions are a number of focus areas that will form the basis of the further development of the specific policies and actions. Strategic Direction 6.1: Protecting and Enhancing the City's Key Environmental Assets including the following focus area:

"Work to minimise car dependency in favour of cycling, walking and public transport usage."

The adoption and implementation of the Campbelltown Bicycle Plan is one way in which the City can reduce car dependence as highlighted by this focus area.

3.1.4 Campbelltown and Camden Integrated Transport Strategy

This report was prepared to provide a framework to plan, facilitate and implement an integrated transport system for Campbelltown and Camden that is based on the principles of sustainability. The main objectives of the strategy are:

- *"To provide improved transport options for residents of Camden and Campbelltown to reduce the dependence on the private motor vehicle; and*
- *To encourage residents of the region to make more sustainable transport choices."*

The strategies related to cycling and walking are listed below:

- WC1 Define objectives for the future walking and cycling environment and confirm the validity of existing pedestrian and bicycle plans and extend for new development areas;
- WC2 Complete the identified pedestrian and cycle network as outlined in current pedestrian and bike plans;
- WC3 Work with and provide resources and infrastructure to schools to encourage safe and sustainable travel to schools, including more walking and cycling, use of buses and safer roads;
- WC4 Ensure Development Control Plans (DCPs) are consistent with latest resources (e.g. Department of Planning Walking and Cycling Guidelines) and promote accessible and permeable street networks;
- WC5 Promote active transport modes for health and transport;
- WC6 Promote driver awareness of cycling to provide a safe road environment;
- WC7 Review standards for the public domain to ensure consistency and quality, particularly in town centres (e.g. path design, street furniture, lighting, kerb ramps, pedestrian crossings);

- WC8 Require high quality pedestrian and bicycle facilities along major roads for new and reconstructed roads. The level of segregation and design of such facilities should be related to the role of the road (i.e. road hierarchy and traffic conditions);
- WC9 Review and implement road safety plans to improve the safety of pedestrians and cyclists;
- WC10 Review pedestrian domain to ensure equitable access for disabled and mobility impaired users; and
- WC11 Provide secure and visible cycle parking in all commercial centres and other major trip generators.

The above strategies are all important for encouraging greater cycling use within Campbelltown and the updated Bicycle Plan incorporates the essence of these strategies.

3.1.5 Draft South West Subregional Strategy, Department of Planning 2007

The Draft South West Subregional Strategy sets out a vision for the management and development of the subregion to 2031. It provides, *"a basis for coordinating planning and economic development, environmental management, open space systems and agreements about baseline targets for dwellings and employment growth between South West Councils and the NSW Government."*

Some of the statistics included in the strategy with regards to walking and cycling are:

- *"The South West subregion has the lowest proportion (12 per cent) of trips made by walking or cycling of all the subregions, compared to Sydney's average of 19 per cent;*
- *The proportion of school children who walk or cycle to school (28 per cent) is significantly greater than the Sydney Region average (22 per cent)."*

It is highlighted that there is the potential to increase walking and cycling trips by adults currently using their cars for short trips through implementing better walking and cycling facilities and better aligning the walking and cycling networks with public transport routes. A better network and facilities would improve local accessibility, neighbourhood amenity and community health.

The relevant actions in the Strategy relating to walking and cycling are as follows:

- *"The Roads and Traffic Authority and local councils to continue to upgrade walking and cycling facilities to improve everyday access within and between neighbourhoods, including cycleway development at:*
  - *Casula,*
  - *Warragamba,*
  - *Camden to Narellan; and*
- *The Ministry of Transport and local councils to work together to align local walking and cycling networks with public transport routes to improve accessibility to public transport."*

3.2 Global Issues

Healthy and active transport includes walking and cycling as well as public transport, which invariably involves walking to and from bus stops and rail stations. There is substantive evidence that healthy and active transport provides a strong and effective policy response to five global public policy issues, including:

- Transport Equity;
- Congestion;
- Public Health;
- Climate Change; and
- Peak Oil and Petrol Prices.

Investment in physical, social and organisational infrastructure to support healthy and active transport can deliver positive benefit:cost ratios for each of these five global policy issues individually, especially when considering externalities. The real benefit of investment in infrastructure for healthy and active transport, however, lies in recognition of the cross-disciplinary benefits.

It is noted that in August 2008, the former Minister for Roads Eric Roozendaal and former Minister for Environment and Climate Change Verity Firth announced that the Premier's Council on Active Living had been commissioned to start work on a new Bike Plan for NSW. Community comment on a new NSW Bike Plan to promote and encourage cycling is currently being sought. The press release detailing this announcement is included in Appendix A.

The following sections detail the five global public policy issues referred to above.

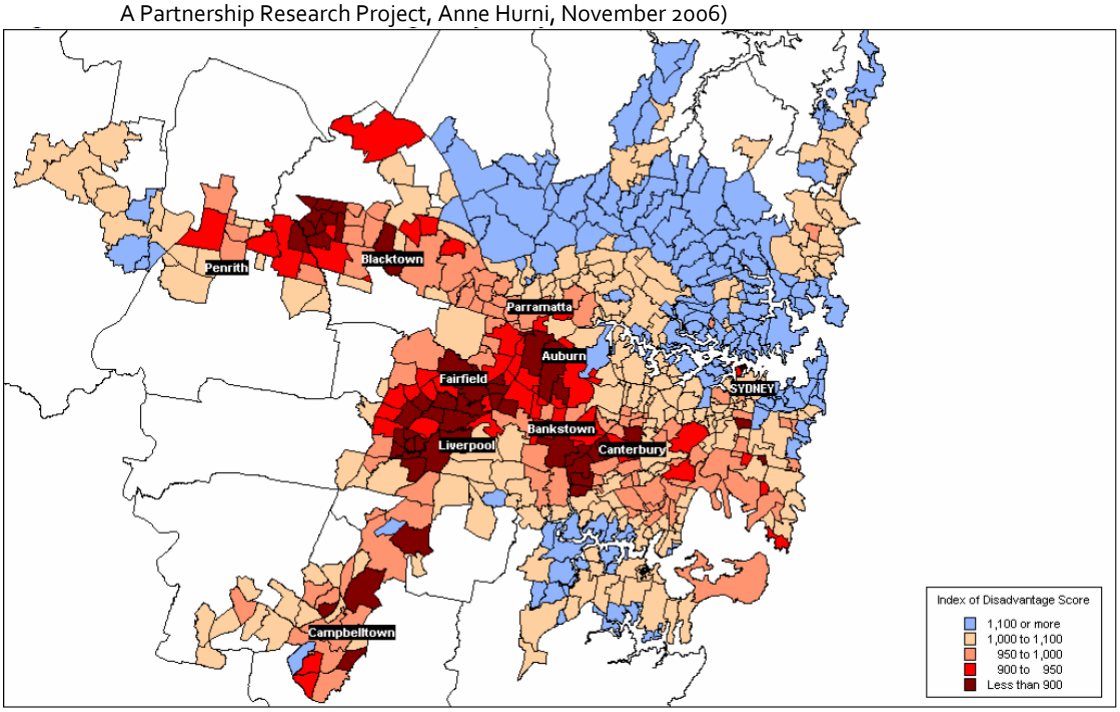
3.2.1 Transport Equity

Approximately 700,000 people in Western Sydney cannot reach essential services within a reasonable time, such as health care, employment, education and daily needs (Hurni 2006, Figure 3.1). The problems are broadly defined as being personal mobility factors (characteristics that affect an individual's ease of travelling), transport accessibility factors (characteristics of the available transport services) and urban accessibility factors (characteristics of facilities, services and activities that individuals may need to access).

Examples of some transport disadvantaged groups include sole parents, young unemployed people and recently arrived humanitarian entrants.

A broader response to the travel needs of these groups is required including improvements to local accessibility through constructing and upgrading bus stops and shelters, footpaths and cycleways.

Figure 3.1: Transport and Social Disadvantage (Source: Transport and Social Disadvantage in Western Sydney, A Partnership Research Project, Anne Hurni, November 2006)

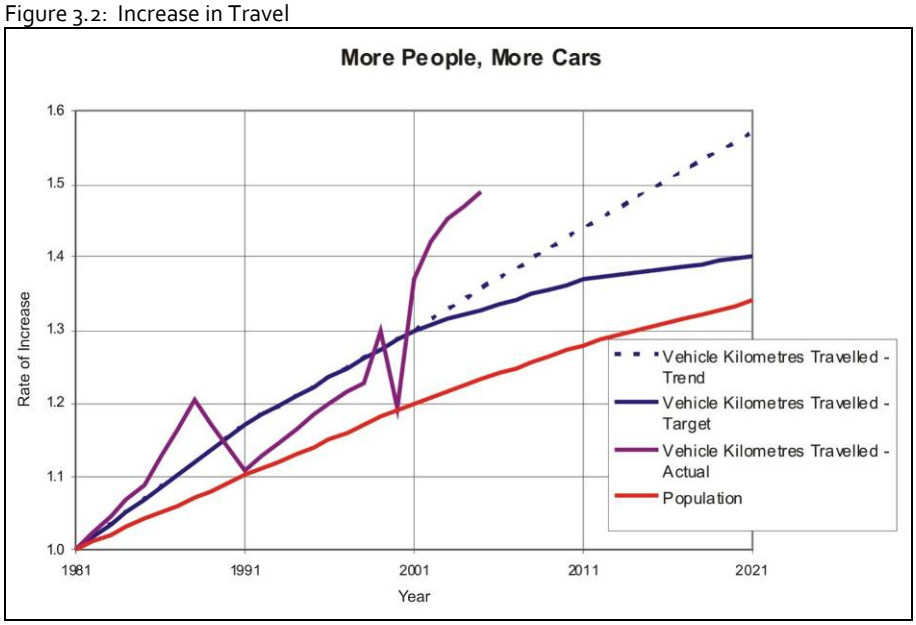


Note: A low Index of Disadvantage score indicates those areas more likely to experience transport-related social exclusion.

3.2.2 Congestion

Research by the NSW Roads and Traffic Authority in 1991[2] predicted a 600% increase in congestion on Sydney's roads unless vehicle usage trends were reversed. Current evidence is that the RTA strategies have been ineffective in achieving the required target (Figure 3.2). Similar problems are evident in other major cities in Australia and around the world. There is a strong need for renewed investment in environmentally friendly transport in cities, such as cycling, walking and public transport.

Figure 3.2: Increase in Travel



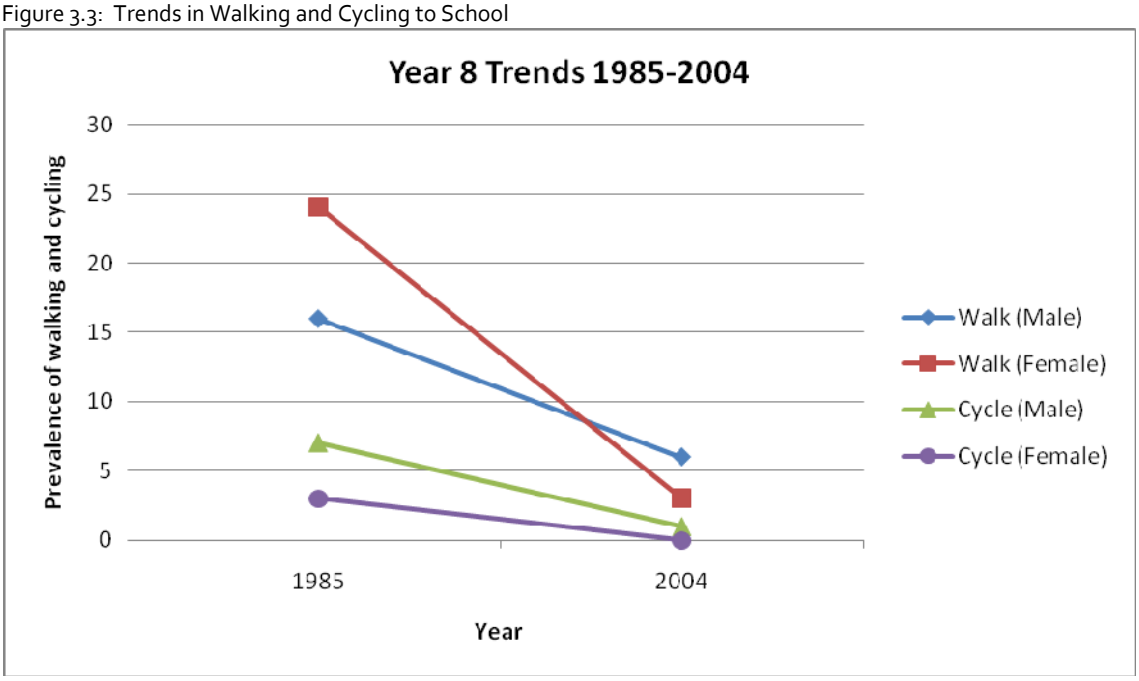
[2] Road Transport Future Directions, Summary Report on Options, Sydney, June 1991, Roads and Traffic Authority of NSW

3.2.3 Health

The obesity crisis and the lack of exercise are well documented (for example, the SPANS reports by NSW Health which indicate that walking and cycling to school have the potential to provide 50% of the daily physical activity requirement for children. However, there is evidence of a significant decline in walking and cycling to school as shown in Figure 3.3.

Less well known is the research flowing from the European Charter on Transport, Health and the Environment which shows that car-based air pollution kills twice as many people as car crashes (Figure 3.4).

Figure 3.3: Trends in Walking and Cycling to School



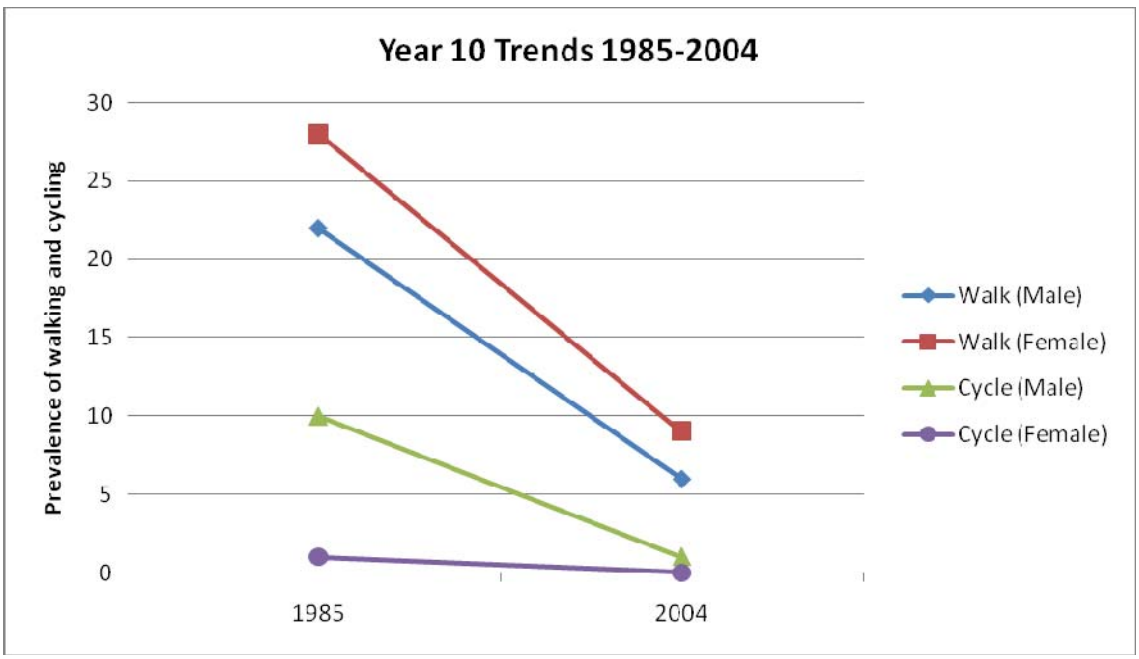
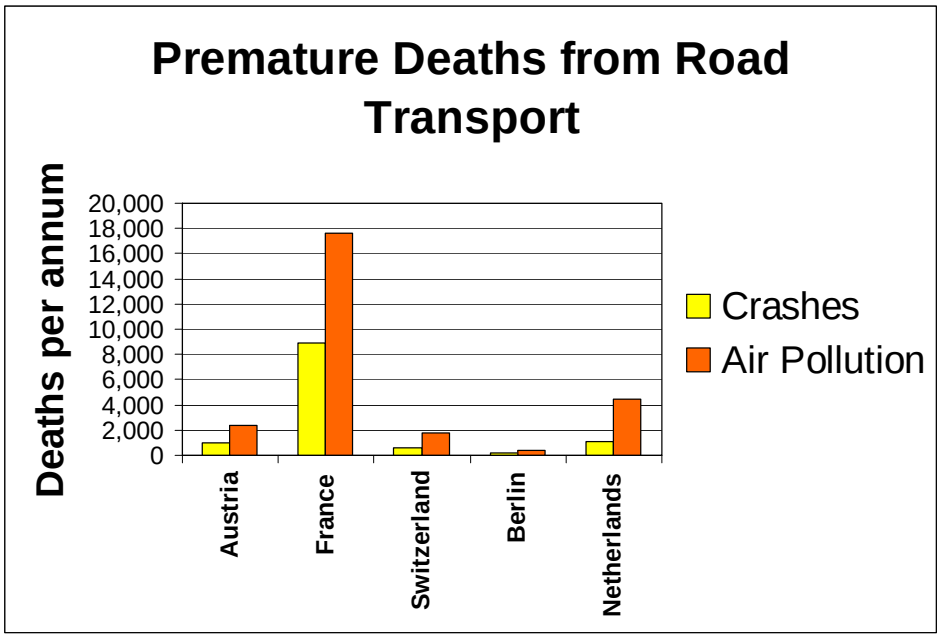


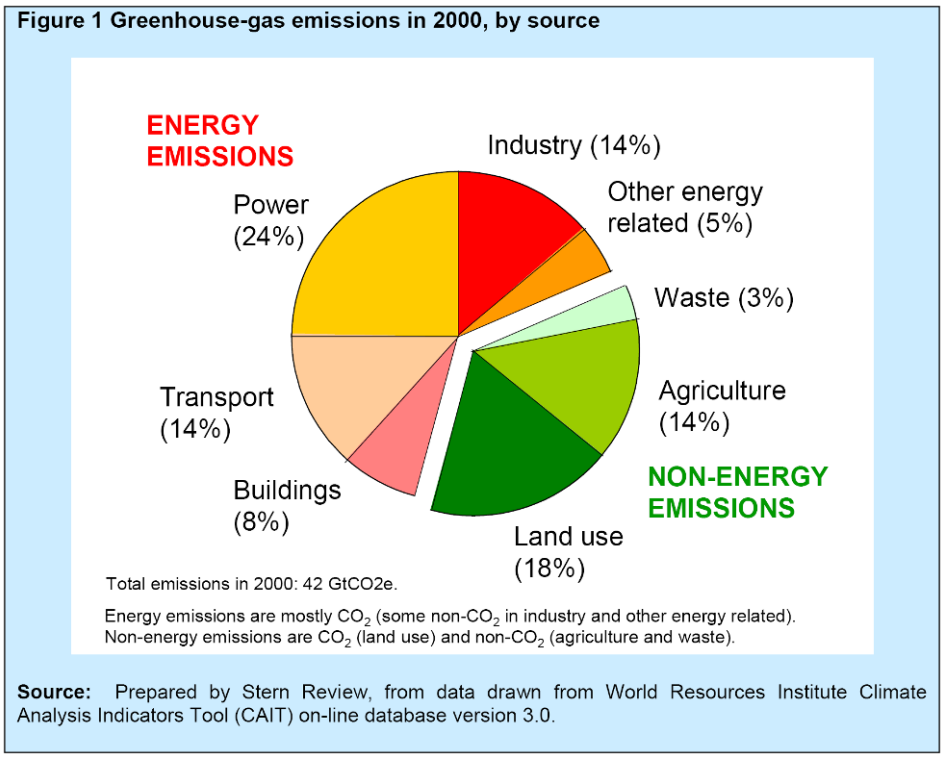
Figure 3.4: Premature Deaths from Road Transport



3.2.4 Environment and Climate Change

The Stern Review has now become the world's authoritative and conclusive document on this topic (Figure 3.5). While it acknowledges active transport as a key issue, it is weak on recommendations due to the complexity of the issue. It is clear, however, from other research both overseas and locally that there are strong opportunities to substantially increase the role of active transport, eg the City of Sydney has adopted a target of 20% of short trips by bike by 2016.

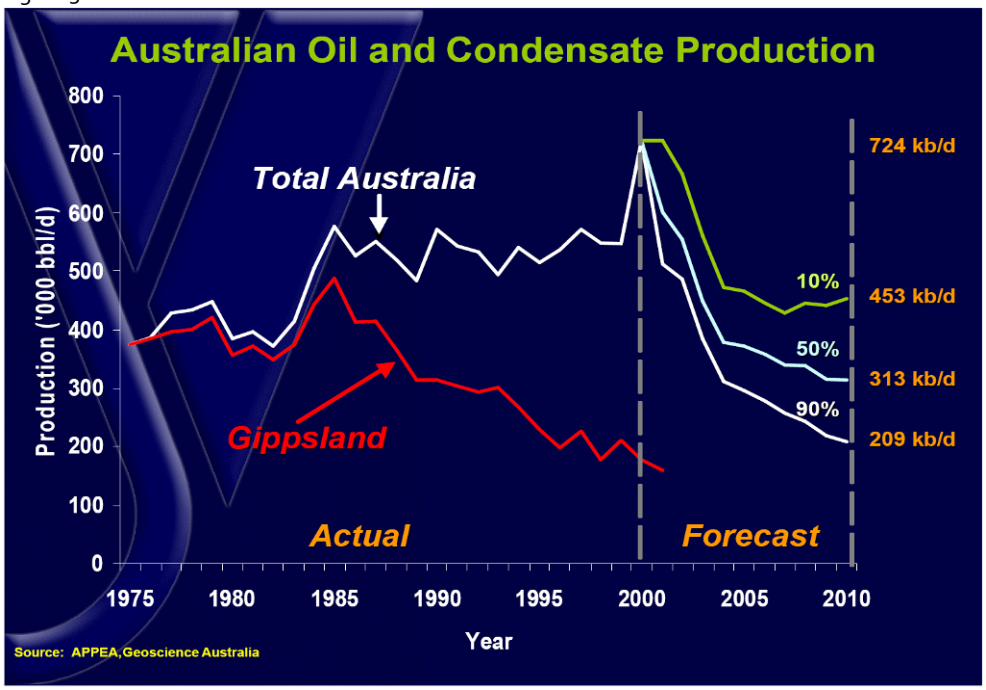
Figure 3.5: Transport and Climate Change



3.2.5 Peak Oil

Projections by Australian Government forecasting agencies indicate that Australia is facing a rapid decline in liquid petroleum production over the next decade. Liquids self-sufficiency is expected to decline from an average of 80-90% over the past decade to less than 40% by 2010 (Figure 3.6). On a global scale, the Arabian oil fields have reached their peak production levels. There is uncertainty over the location of the next oil and gas fields, with the Kimberley and Arctic seas threatened with exploration.

Figure 3.6: Australian Oil Production



4. Data Collection and Consultation

4.1 Cycle Counts

Cycle counts were undertaken at various locations in the Campbelltown area on Thursday 5 June 2008 during various peak periods. The relevant peak periods were chosen based on the surrounding land uses and the expected level of activity in each of the peaks. For example, those locations near railway stations were surveyed during the AM and PM journey-to-work peak periods, whilst the shopping and retail areas were surveyed during the midday peak.

The locations and times of the surveys are as follows:

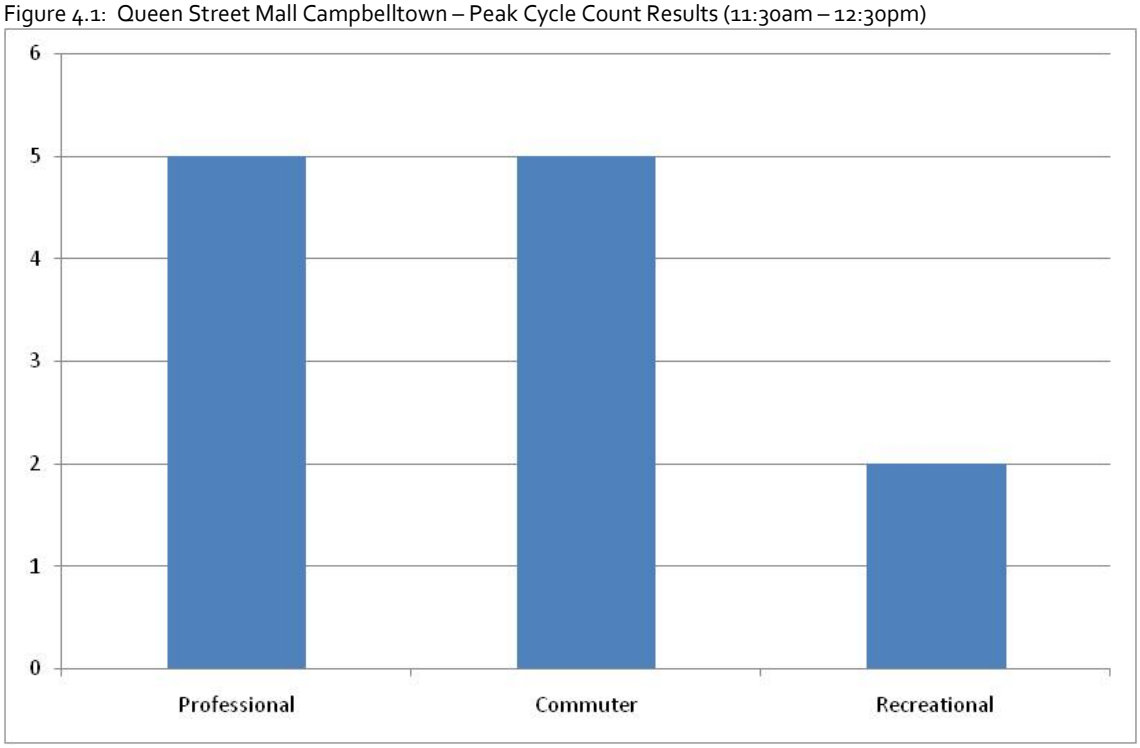
- Queen Street Mall, Campbelltown (11:00am – 2:00pm);
- Narellan Road/Appin Road intersection, Campbelltown (7:00am – 9:00am, 11:00am – 2:00pm);
- Blaxland Road/Badgally Road intersection, Campbelltown (4:00pm – 6:00pm);
- Hurley Street at Campbelltown Station (7:00am – 9:00am, 4:00pm – 6:00pm);
- O'Sullivan Road at Leumeah Station (7:00am – 9:00am, 4:00pm – 6:00pm);
- Minto Road at Minto Station (7:00am – 9:00am, 4:00pm – 6:00pm);
- Ingleburn Road at Ingleburn Station (7:00am – 9:00am, 4:00pm – 6:00pm);
- Cumberland Road/Oxford Road intersection, Ingleburn (11:00am – 2:00pm); and
- Redfern Road/Pembroke Road intersection, Minto (11:00am – 2:00pm).

The peak hour results for each of the locations are detailed below, with full details included in Appendix B.

Queen Street Mall, Campbelltown

The results of surveys undertaken on Queen Street found that the peak cyclist activity occurred from 11:30am to 12:30pm. Professionals and commuters were the most popular groups observed during this peak period. This data is summarised in Figure 4.1.

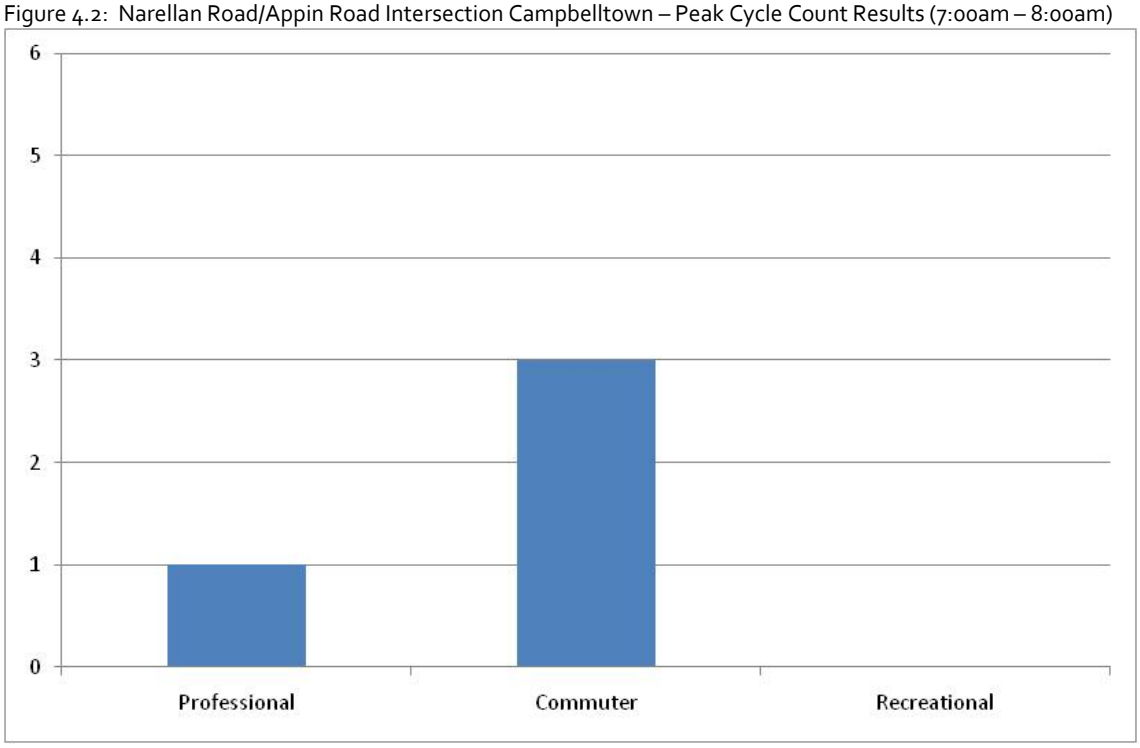
Figure 4.1: Queen Street Mall Campbelltown – Peak Cycle Count Results (11:30am – 12:30pm)



Narellan Road/Appin Road Intersection, Campbelltown

The results of surveys undertaken at the intersection of Narellan Road and Appin Road found that the peak cyclist activity occurred from 7:00am to 8:00am. Commuters were the most popular group observed during this peak period. This data is summarised in Figure 4.2.

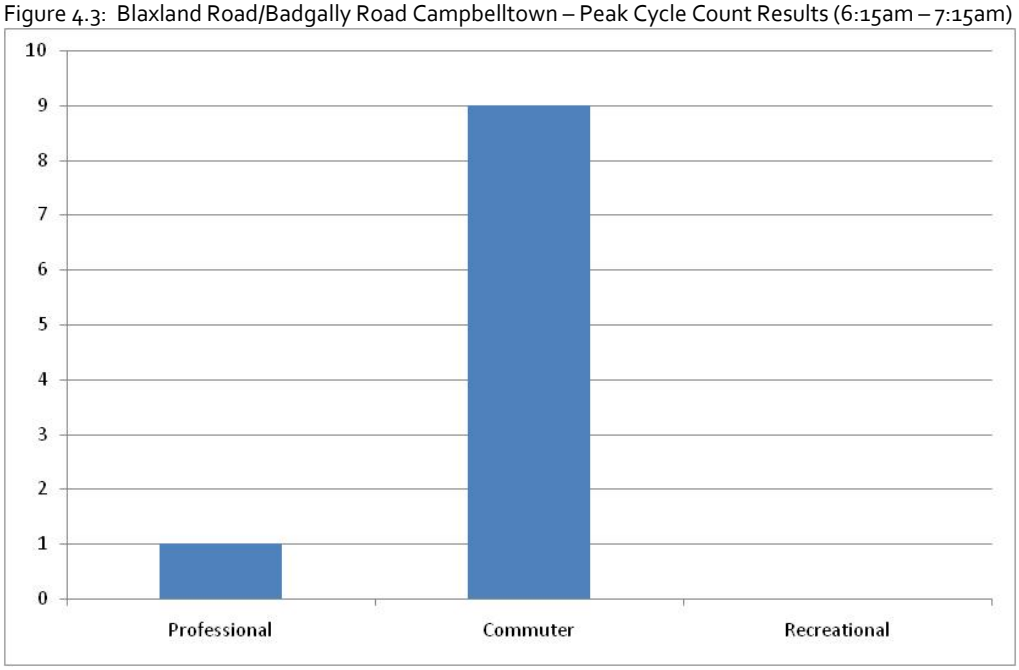
Figure 4.2: Narellan Road/Appin Road Intersection Campbelltown – Peak Cycle Count Results (7:00am – 8:00am)



Blaxland Road/Badgally Road Intersection, Campbelltown

The results of surveys undertaken at the intersection of Blaxland Road and Badgally Road found that the peak cyclist activity occurred from 6:15am to 7:15am. Commuters were the most popular group observed during this peak period. This data is summarised in Figure 4.3.

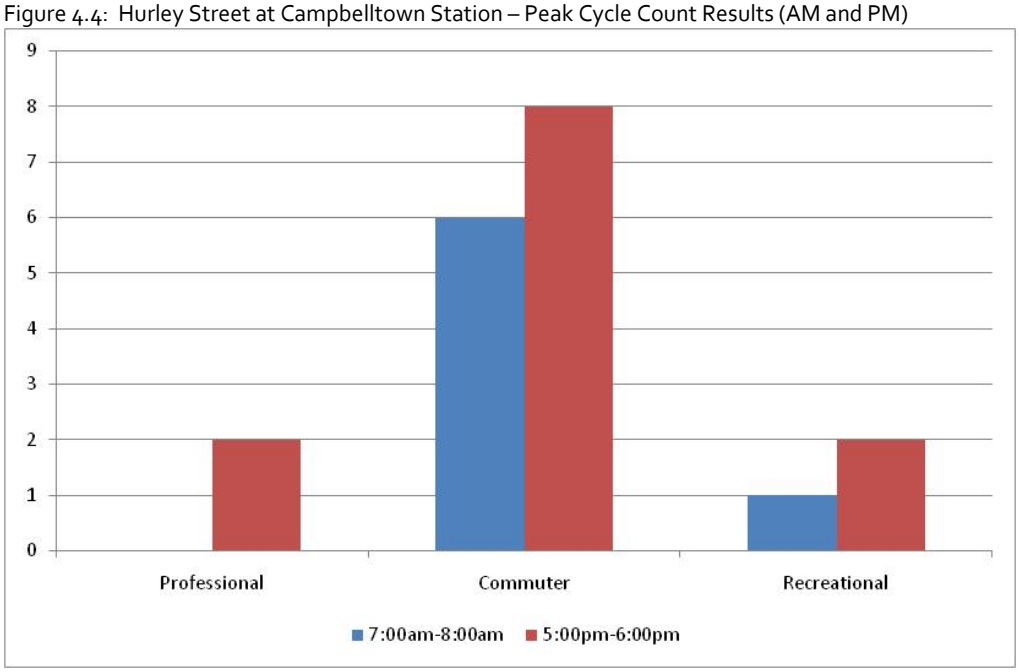
Figure 4.3: Blaxland Road/Badgally Road Campbelltown – Peak Cycle Count Results (6:15am – 7:15am)



Hurley Street at Campbelltown Station

The results of surveys undertaken on Hurley Street at Campbelltown Station found that the peak cyclist activity occurred from 7:00am to 8:00am and 5:00pm to 6:00pm. Commuters were the most popular group observed during these peak periods. This data is summarised in Figure 4.4.

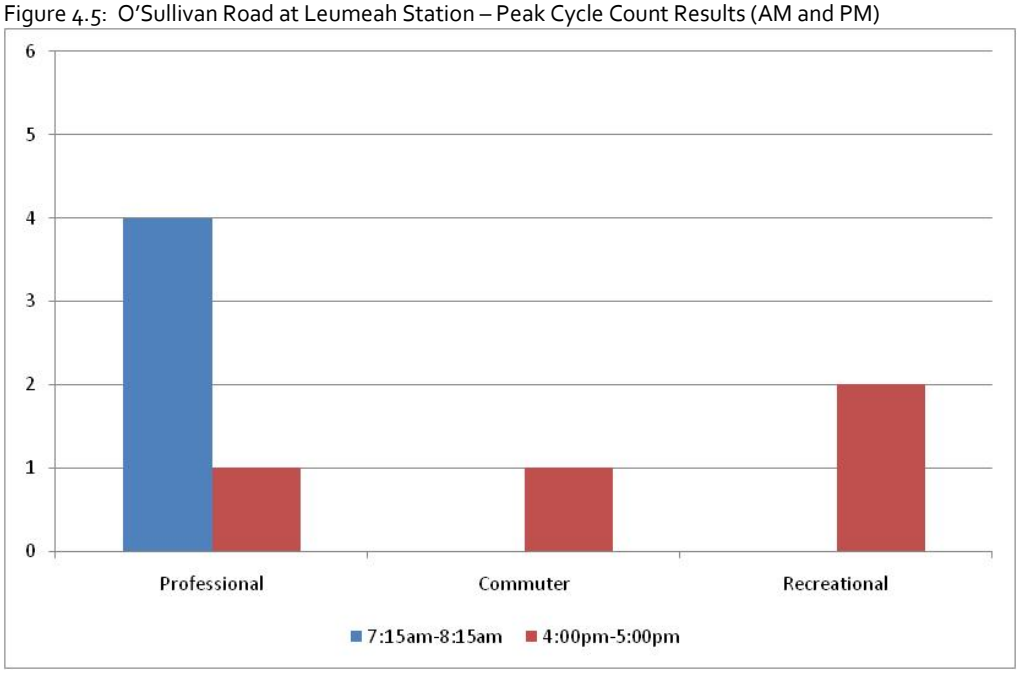
Figure 4.4: Hurley Street at Campbelltown Station – Peak Cycle Count Results (AM and PM)



O'Sullivan Road at Leumeah Station

The results of surveys undertaken on O'Sullivan Road at Leumeah Station found that the peak cyclist activity occurred from 7:15am to 8:15am and 4:00pm to 5:00pm. In the AM peak period, professionals were the most popular group observed, whilst recreational cyclists were the most popular group observed during the PM peak period. This data is summarised in Figure 4.5.

Figure 4.5: O'Sullivan Road at Leumeah Station – Peak Cycle Count Results (AM and PM)

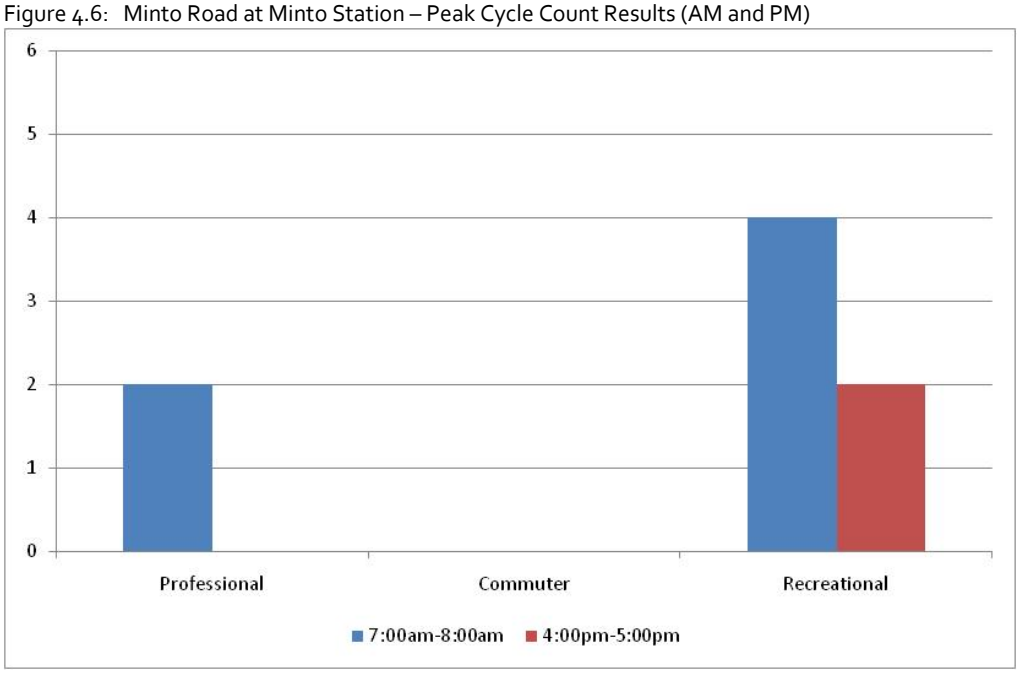


It is noted that the above counts only include cyclists observed on the eastern side of the station. There is also likely to be a number of other cyclists in the vicinity of the station on the western side.

Minto Road at Minto Station

The results of surveys undertaken on Minto Road at Minto Station found that the peak cyclist activity occurred from 7:00am to 8:00am and 4:00pm to 5:00pm. Recreational cyclists were the most popular group observed during both the AM and PM peak periods. This data is summarised in Figure 4.6.

Figure 4.6: Minto Road at Minto Station – Peak Cycle Count Results (AM and PM)

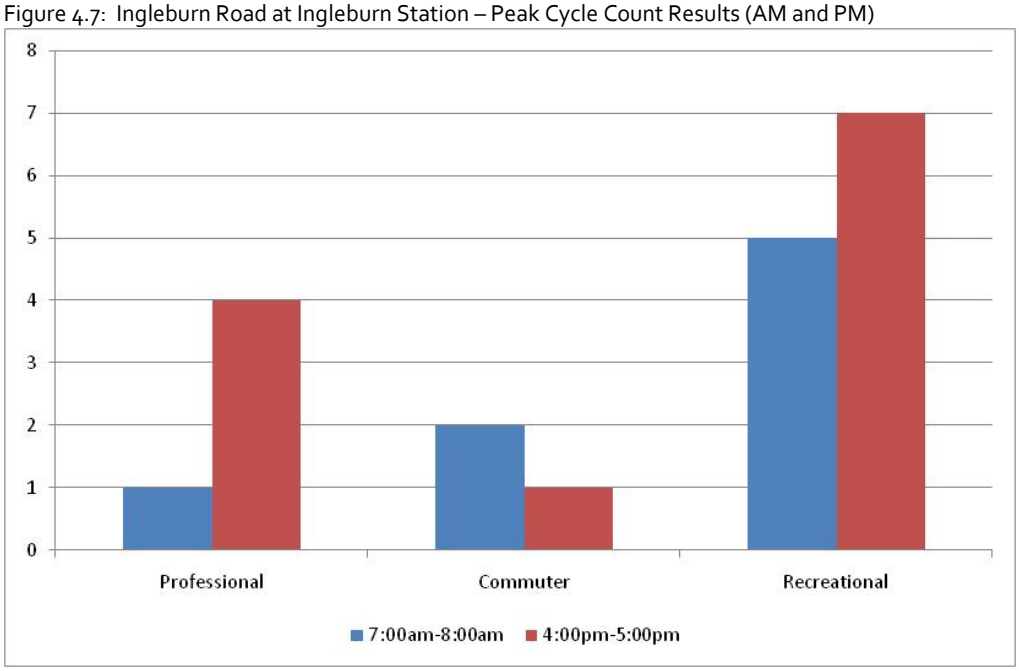


It is noted that the above counts only include cyclists observed on the eastern side of the station. There is also likely to be a number of other cyclists in the vicinity of the station on the western side.

Ingleburn Road at Ingleburn Station

The results of surveys undertaken on Ingleburn Road at Ingleburn Station found that the peak cyclist activity occurred from 7:00am to 8:00am and 4:00pm to 5:00pm. Recreational cyclists were the most popular group observed during both the AM and PM peak periods. This data is summarised in Figure 4.7.

Figure 4.7: Ingleburn Road at Ingleburn Station – Peak Cycle Count Results (AM and PM)



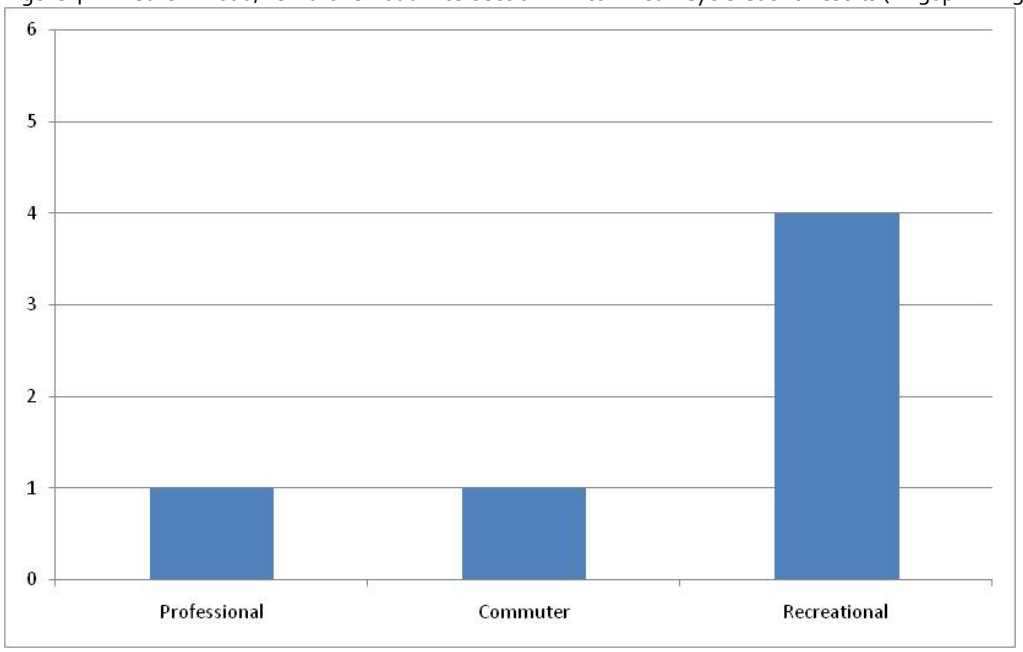
Cumberland Road/Oxford Road Intersection, Ingleburn

The results of surveys undertaken at the intersection of Cumberland Road and Oxford Road in Ingleburn found that there are a very low number of cyclists travelling in the area, with only one recreational cyclist observed between 12:15pm to 1:15pm.

Redfern Road/Pembroke Road Intersection, Minto

The results of surveys undertaken at the intersection of Redfern Road and Pembroke Road in Minto found that the peak cyclist activity occurred from 12:30pm to 1:30pm. Recreational cyclists were the most popular group observed during this peak period. This data is summarised in Figure 4.8.

Figure 4.8: Redfern Road/Pembroke Road Intersection Minto – Peak Cycle Count Results (12:30pm – 1:30pm)



4.2 Community Cycling Questionnaire

A cycling questionnaire was made available for a two-month period through the Campbelltown website for completion online. Hard copies of the questionnaire for manual completion were also made available by request from the Council offices in Campbelltown. The purpose of this questionnaire was to collect information regarding the existing cycling network and bicycle use, including the purpose of cycling trips and opinions of current infrastructure, along with suggestions for improvement that would encourage them to cycle more often.

Promotion of the questionnaire was undertaken through a range of methods, including:

- Notice in the local newspapers (Macarthur Advertiser and Macarthur Chronicle);
- Notice in the June Compass newsletter directing people to the website for further information;
- Media Release involving the Mayor and published in the local newspapers;
- Email to Councillors for forwarding to relevant interested community members;

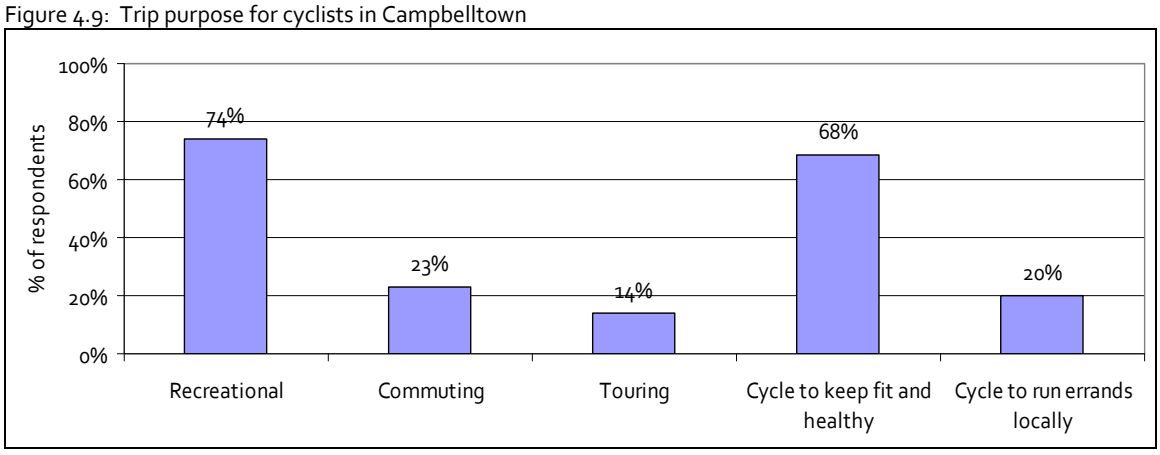
- Email to Mac BUG representatives for response and forwarding to other relevant community members; and
- Notices based on the structure of the recent crime perception survey on display at the following public locations:
  - Campbelltown City Council,
  - Campbelltown Arts Centre,
  - Campbelltown Bicycle and Road Safety Education Centre,
  - Sports Centres,
  - Bike Shops,
  - Libraries,
  - Neighbourhood/Community Centres.

Throughout the consultation period, a total of 196 survey responses were received from the community. A summary of the questionnaire results is included below, with full details included in Appendix C.

Trip Purpose

The majority of respondents indicated that they are cycling in the Campbelltown area for recreational (78%) and health (68%) purposes. This is summarised in Figure 4.9.

Figure 4.9: Trip purpose for cyclists in Campbelltown



Note: Respondents were able to list more than one trip purpose.

Existing Travel – Modes and Distance

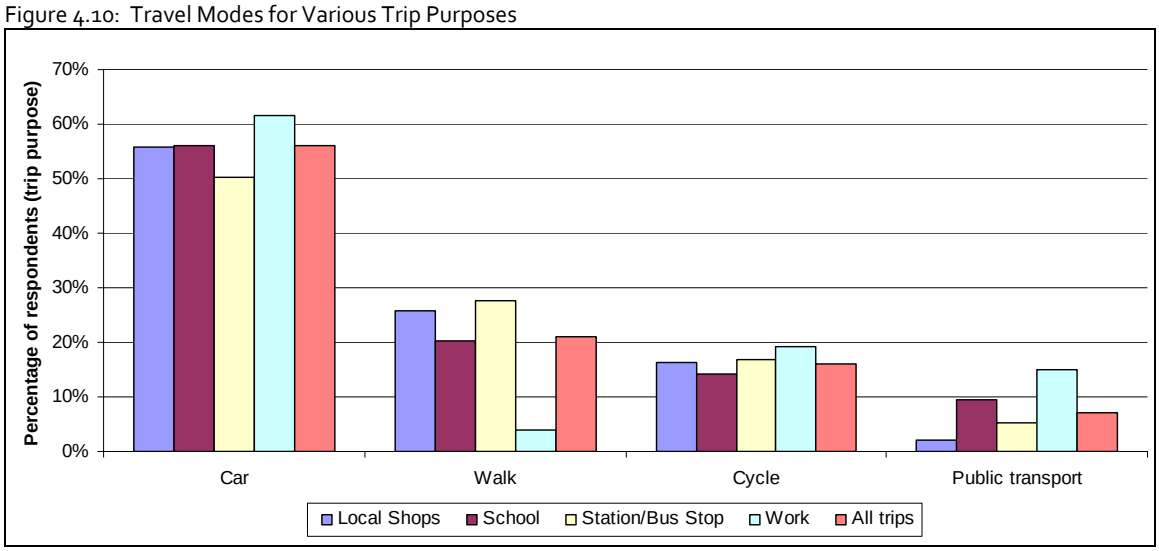
The private vehicle was the most popular transport that respondents used to travel to and from various destinations, including work, shops, school and public transport services (i.e. railway stations or bus stops).

In terms of travel to work and public transport services, the second most popular transport mode noted by respondents was cycling, at 19% and 17% respectively. It is noted that these results may be skewed from the general population due to the high survey response rate from existing cyclists. However, taking this into consideration, these results may be due to the end-of-trip facilities which are available for bikes at these destinations, particularly railway stations.

In terms of travel to local shops and school, the second most popular transport mode by respondents was walking, at 26% and 20% respectively. The level of use of cycling as a transport mode for these trip purposes was greater than it was for public transport. Once again, these results may be skewed from the general population due to the high survey response rate from existing cyclists.

The travel mode results for each of the trip purposes is summarised in Figure 4.10.

Figure 4.10: Travel Modes for Various Trip Purposes



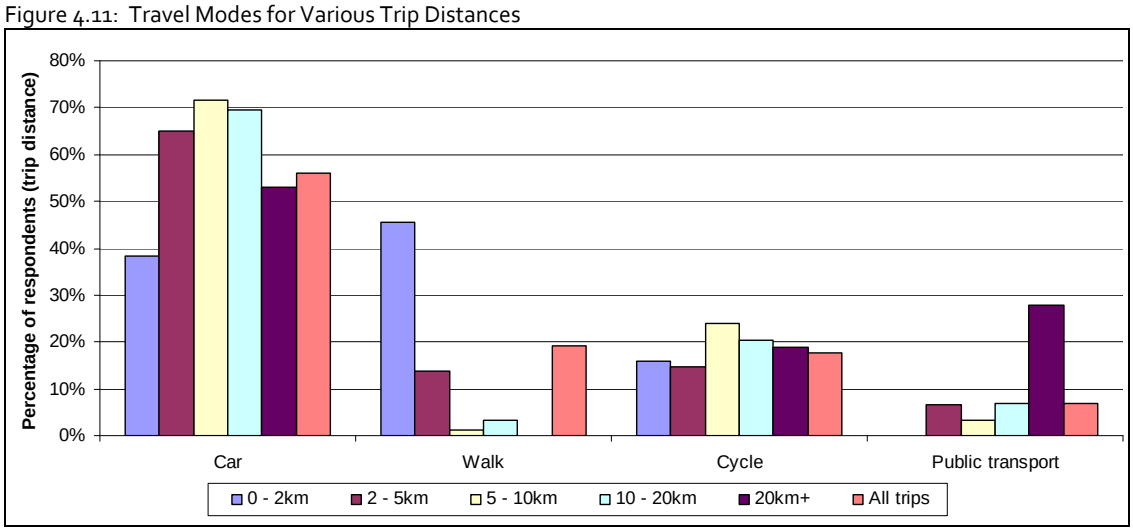
Information was also collected with regards to the length of trips being made for each of the trip purposes and trip distances.

It was found that the trips to the local shops were generally all less than 2km, while the trips to school and public transport services were generally all less than 5km. With regards to work trips, the majority of trips were greater than 5km.

Car trips were generally high over all of the trip distance categories, including the 0-2km category where 38% of trips less than 2km were by car. Walking was a popular mode for trips up to 2km (46% of trips 0-2km), cycling was most popular with trips between 5 and 10km (24% of trips 5-10km) and public transport was popular for trips greater than 20km (28% of trips 20km+).

The travel mode results for each of the trip distances is summarised in Figure 4.11.

Figure 4.11: Travel Modes for Various Trip Distances



Issues and Improvements

A large number of respondents (62%) stated that they currently use the existing cycleways in Campbelltown. However, 82% of all respondents stated that they believe that these cycleways are insufficient in meeting their needs for a range of reasons, including:

- Insufficient cycle lanes/routes;
- Unsafe cycle lanes;
- Lack of connectivity; and
- Obstructions or debris within the lanes and paths.

Some of the infrastructure and facilities that were suggested to encourage greater cycling participation include:

- Off-road paths;
- Safe places to ride, including facilities for children;
- On-road lanes;
- Parking facilities, especially at places of interest; and
- Bicycle safety education.

4.3 School Cycling Questionnaire

A cycling and walking questionnaire was distributed to each of the schools located within the Campbelltown area. A total of 56 schools received a questionnaire, with 18 completed responses received.

The main findings of the cyclist component of the questionnaire are as follows:

- The most popular transport modes used by students at the schools surveyed were walking, bus and private vehicle, with cycling ranking low as a transport mode;

- The majority of schools surveyed (13 or 72%) noted that they do not have issues with bicycle access;
- Sustainable transport or environmental topics were covered in the curricula of 14 out of the 18 schools surveyed (78%);
- The majority of schools surveyed noted that they allowed their students to ride to school (13 or 72%), however only 4 schools (22%) noted that they had a bicycle policy;
- Bicycle racks for storage of bicycles was the most popular bicycle parking facility at the schools surveyed (13 out of 18 schools or 72%). Few schools provided any other forms of parking facilities such as bicycle storage areas or lockers;
- The majority of schools surveyed (15 or 83%) were aware of the Bicycle and Road Safety Education Centre in Campbelltown, however only 7 schools or 39% were using these facilities;
- In general, very few students were noted as riding their bicycles to school, with numbers generally ranging from two to 10 students per school;
- Four schools (22%) noted that they did not permit their students to cycle to school due to a range of issues, including lack of cycle routes and adequate parking facilities; and
- Bicycle facility improvements requested included safe cycling routes and infrastructure.

4.4 Public Workshop

A Public Workshop was conducted by GTA Consultants on Thursday 2 October 2008 at the Council offices. This workshop was attended by 15 people, including Council representatives, Mac BUG members, an RTA representative and the general public.

The purpose of this workshop was to present GTA Consultants' findings to date, give the pubic an opportunity to raise any important issues, provide suggestions for improvement and provide comment on some initial improvement options. Following a presentation from GTA Consultants, a group discussion was conducted and the group were given the chance to mark up plans and give any specific feedback.

A number of problem locations for cyclists were identified at the workshop along with some other key issues that are to be investigated. Some of the key outcomes from this workshop include:

- Education – community members are concerned that the current level of education is not working and cycling needs to become more widely acceptable in the area and drivers need to respect the cyclists' needs. They would like to see Council take the lead in the wider use of cycling as a transport mode, including providing adequate end-of-trip cycling facilities at the Council offices. They could also provide a fleet of bicycles for Council staff to use for local inspections;
- It was discussed that Council has recently been working on establishing new recreational shared path links for cyclists and pedestrians. Community members would like to see more money being spent on upgrading the wider network for longer distance riders and commuters, and for other trip purposes besides recreational use;

- Footpath widening works to provide shared paths for both cyclists and pedestrians was raised as a way to provide additional facilities for cyclists. However, the issue of cyclists and reversing vehicles from driveways was raised;
- Busy arterial roads, such as Appin Road, Narellan Road, Menangle Road and Campbelltown Road, were identified as being difficult to negotiate, particularly at the intersections;
- Local facilities are hard to access by bicycle, particularly the shopping centres including Queen Street. This discourages people from cycling to run local errands;
- It was suggested that regular information be provided in the local paper or similar regarding the existing bicycle network and any upgraded or new bicycle facilities;
- Generally, on-road facilities were deemed inadequate and suggestions were made to provide more width for cyclists with kerb extensions for additional safety; and
- A strategy with the local bus company was suggested which would provide bike racks at bus stops to encourage people to cycle to catch the bus.

The outcomes from the workshop have been considered during the network development stage.

5. Developing the Bicycle Network

5.1 Bicycle Network Route Function

The proposed cycle network consists of four elements as detailed below:

- Strategic Routes:
  - High level routes which traverse the Campbelltown LGA in an east/west and north/south direction and connect to the neighbouring Council cycle routes, including those routes that form part of the wider RTA bicycle network;
- Main Feeder Routes:
  - Connecting routes branching off from the Strategic routes to link the adjoining district centres and key residential suburbs;
- Local Access Connections:
  - Links from the higher level network to key places of interest such as local centres, schools and sporting fields; and
- Urban Recreational Routes:
  - Off-road routes which provide a safe and family-friendly environment in the vicinity of parks and reserves to enjoy recreational cycling.

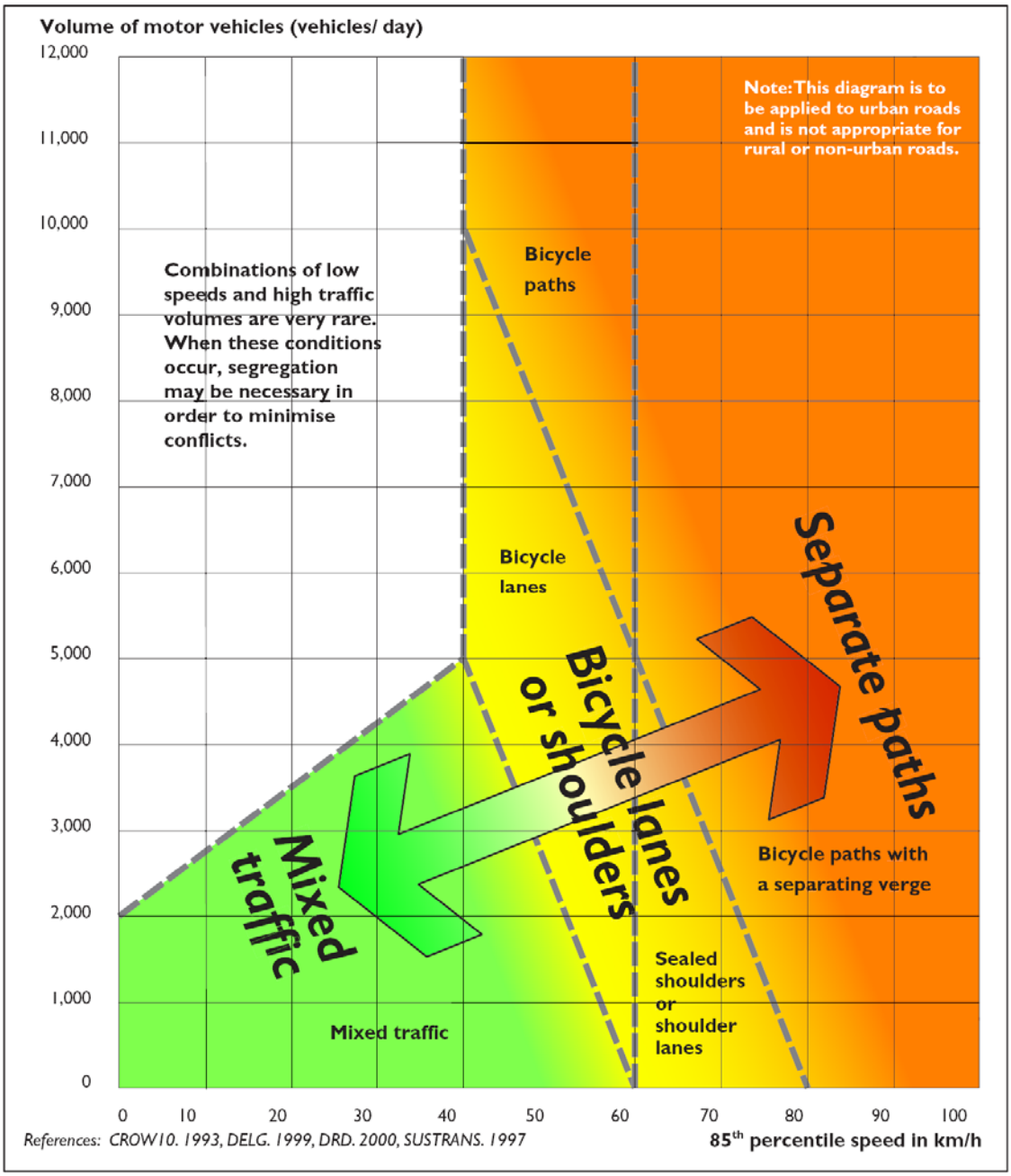
With regard to urban routes, there are generally three types of routes with their own network function as shown in Table 5.1.

Figure 5.1 shows the methods of separation and the appropriate treatment based on road traffic volumes and speeds. It can be seen that separation is important of as a key to providing much needed operating space for bicycles in high speed and high volume environments.

Table 5.1: Urban bicycle routes and their network function

Parameter	Regional routes	Local routes	Bicycle friendly streets and neighbourhoods
Basic characteristics	High-quality, high-priority routes permitting quick unhindered travel between the major centres of the municipality and to key centres within the surrounding region	High quality routes connecting residential streets and trip generating locations to regional bicycle routes and providing circulation within the municipality.	Providing easy local access to local residences and trip destinations in a 'low stress' environment
Transport function	Movement primary, access secondary	Movement and access equal	Access primary, movement secondary
Priority	High	Medium	Low
Place connections	Regional centres and major transport nodes	Urban centres, employment, schools, entertainment, cultural, transport	Individual homes, buildings and open space
Spacing of facilities	500 – 800m	300 – 500m	Integrated with local street system
Choice of route	Choice of two routes.	Choice of two routes	Less than 250m to a local or regional route
Continuity of movement	High	Medium	Low
Service linkage to major transport nodes	High priority. Primary linkage may be via connecting local route	High priority	Linked though network
Operation	30 km/h or more	20-30 km/h	Less than 20 km/h
Target trip length	> 3km	0 – 3km	< 100m
User skill required	Low to high	Low to high	Low
Maintenance	Pavement maintenance similar to regional road standard	Pavement maintenance similar to local road standard	Depends on location and traffic load

Figure 5.1: Methods of Separation



Source: NSW Bicycle Guidelines, RTA, 2003

5.2 Proposed Cycle Network

The cycle network for the Campbelltown LGA should be based on best-practice cycle planning principles. Specifically, that it connects the main trip attractors throughout the Campbelltown LGA and provides a strategic network of east/west and north/south routes between the neighbouring Councils.

A number of criteria were considered to determine the most effective routes to include in the cycle network. These included:

- Connect Strategic Routes into pre-determined connection points with adjoining LGAs;
- Connect local attractors to the strategic network through a series of Local Access Connections;
- Avoid, or provide alternatives to, heavily trafficked and high speed roads, which may be unsafe for cyclists;
- Provide for the most direct and/or logical route where possible;
- Make use of existing facilities and those facilities implemented as part of the 2001 Bicycle Plan; and
- Consider those routes which were proposed in the 2001 Bicycle Plan but have not yet been implemented.

It should be noted that the proposed cycle network does not imply that all other roads which are not included within the cycle network are not cycle friendly or should not be given attention should a cycle issue arise. Essentially, every street is a cycling street and therefore should be maintained or restructured to be "bicycle friendly" where possible in accordance with current standards.

Though bicycle routes are an essential component of a network, it is primarily the route junctions and intersections with busy roads which are given some attention in this plan. For example, where a major bicycle route traverses a quiet residential street, there will usually be very little mid-block engineering treatment applied, apart from some local area traffic management (LATM) to ensure that vehicle speeds and volumes remain low. Where LATM treatments are provided these should be carefully designed to accommodate bicycles.

The overall draft cycle network is included in Figure 5.2. Details of each of the route types are provided in the following sections.

5.3 Strategic Routes

A series of Strategic Routes which create the east/west and north/south spines of the Campbelltown bicycle network are the 'main roads' of the bicycle network and build on the major cycleway routes identified previously in the 2001 Bicycle Plan. The Strategic Routes include both on-road and off-road cycleways, offering the highest level of facility and catering for cross-town trips and the widest range of trip purposes. The focus on establishing these routes is to provide and maintain a high standard of cycle facility so that all levels of cyclists can be accommodated safely.

5.3.1 North/South Routes

NS1 – Campbelltown Road/Moore Oxley Bypass/Appin Road

Route NS1 follows the major road spine of Campbelltown Road and Appin Road which runs north/south through the Campbelltown LGA. There are some facilities currently available along this route however these are generally limited to mid-block on-road lanes, with a lack of continuity or cycle treatments at intersections, particularly roundabouts. This route links with Wollondilly LGA at Appin Road in the south and with Liverpool LGA at Camden Valley Way and the M7 in the north.

NS1A – Copperfield Drive to Kellicar Road (Appin Road Alternative Route)

Route NS1A was identified as an alternative to the Appin Road section of the route described above to provide an opportunity for cyclists who may not be as confident to use the higher speed and traffic volume environment of Appin Road. This route makes use of the existing on-road facilities along Copperfield Drive in Ambervale and links back to the Moore Oxley Bypass via the proposed Woodhouse Drive on-road facilities and existing off-road shared paths through Marsden Park. As well as the establishment of the proposed routes, the existing Copperfield Drive route requires some adjustments to remove a number of pinch points at traffic calming measures and intersections.

NS2 – Menangle Road to Canterbury Road

Route NS2 provides another alternative for north/south travel through the LGA. This route seeks to include those sections which have already been treated in some form and consolidate the route to make it a more cyclist-friendly environment. The route starts at Menangle Road at the LGA boundary into Wollondilly LGA and includes Tindall Street, Kellicar Road, Hurley Street, Queen Street, Rudd Road, Pembroke Road, Minto Road, Collins Promenade, Fields Road, Harold Street and Canterbury Road. At the northern end, the route connects to Liverpool LGA via Glenfield Road and Cambridge Avenue. Whilst some on-road facilities exist, a number of improvements are required, including shoulder repair works, intersection treatments and linemarking.

NS3 – Main Creek and Canal Route

Route NS3 is an off-road cycleway which commences at Woodland Road in Bradbury and runs along the Smiths Creek Bypass alignment to Leumeah, crosses the railway line and continues along the Bow Bowing and Bunbury Curran Creek drainage reserves to Harold Street and Canterbury Road. This is proposed to be established as a shared path recreational route for both cyclists and pedestrians.

NS4 – M5 Freeway

Route NS4 makes use of the existing sealed shoulders which run along the M5 Freeway. It is noted that this route is not ideal for all cyclist types as it is heavily trafficked with high vehicle speeds. This route forms part of the wider RTA bicycle network and is maintained by the RTA.

5.3.2 East/West Routes

EW1 – Narellan Road to Airds

Due to the geography of the Campbelltown LGA, there is only one route which provides a direct strategic link through the LGA in the east/west direction. This route links Camden LGA in the east to

Airds in the west via Narellan Road, The Parkway, St Johns Road and Briar Road. This route requires improvements to the intersection treatments and the route continuity.

Appendix D details the proposed facilities on the Strategic Routes included in the bicycle network.

5.4 Main Feeder Routes

In network terms, the Main Feeder Routes supplement the Strategic Routes to complete the 'main roads' network of the bicycle network. These routes comprise east/west and north/south routes that branch off from the Strategic routes to link the adjoining district centres and key residential suburbs. Some of these routes also provide other links into the adjacent LGAs.

- Cumberland Road;
- Macquarie Road;
- Oxford Road;
- Ben Lomond Road;
- St Andrews Road;
- Raby Road;
- Badgally Road;
- Broughton Street/Georges River Road;
- Englorie Park Drive;
- Gilchrist Drive;
- Eagle Vale Drive;
- Epping Forest Drive;
- Thunderbolt Drive/Spitfire Drive;
- St Johns Road/Waminda Avenue/Macquarie Avenue/Angle Road/O'Sullivan Road;
- Rose Payten Drive;
- Smiths Creek Bypass (note that south of Georges River Road this would be a potential future subdivision link);
- Leumeah Road; and
- Junction Road.

Appendix D details the proposed facilities on the Main Feeder Routes included in the bicycle network.

5.5 Local Access Connections

Local Access Connections link from the higher level 'main road' network to key places of interest such as local centres, schools and sporting fields. They are normal streets and roads which have had minor engineering improvements made to them to enable bicycle riders to get to trip destinations more easily and with less stress than on the existing road network. Local routes connect local streets to regional routes and extend the network 'web' further out into the municipality. A bicycle route passing through

a local street is beneficial to residents because of the humanising influence and greater level of citizen supervision from people on bicycles as opposed to noisy polluting motor vehicle through traffic. Bicycle and pedestrian links between cul-de-sacs provide a competitive advantage and encourage travel on foot and by bike.

It is further noted that the aim is to make all streets cycle streets and therefore the existing road networks should be upgraded during programmed maintenance or restructured/ reconstructed to be "bicycle friendly" where possible in accordance with current standards.

5.6 Urban Recreational Routes

There are a number of existing off-road recreational routes which provide a safe and family-friendly environment in the vicinity of parks and reserves to enjoy recreational cycling. The proposals for additional urban recreational routes look to expand on the existing routes and provide additional routes within other parks and reserves. This is in addition to the proposed strategic off-road route which would run along the Smiths Creek Bypass alignment and continues along the Bow Bowing and Bunbury Curran Creek drainage reserves, which is proposed to be established as a shared path recreational route for both cyclists and pedestrians.

The existing and proposed locations are detailed below.

5.6.1 Existing Off-Road Recreational Routes

Bow Bowing

- Bouddi Street to the Minto Basin cycleway via a bridge over the main channel

Bradbury

- Bradbury Oval;
- Quirk Reserve; and
- Manooka Reserve.

Claymore

- Brady Park.

Eagle Vale

- Eagle Farm Reserve.

Eschol Park

- Eschol Park Sports Complex.

Ingleburn

- Milton Park;

- Treeland Walk Reserve; and
- Clifford Walk Reserve.

Kearns

- Clark Reserve.

Leumeah

- Campbelltown North School Reserve.

Raby

- Raby Sports Complex extending eastwards to Spitfire Drive; and
- Kooringa Reserve.

5.6.2 Proposed Off-Road Recreational Routes

Ambarvale

- Cleopatra Reserve to Kellicar Road – Partially Complete (northern section only).

Claymore

- Fullwood Reserve to proposed Bridge over M5 (Note: Programmed for 2010).

Eschol Park

- Eagle Creek Reserve.

Ingleburn

- Digger Black Reserve; and
- Milton Park – Noted for inclusion as a potential future triathlon course to complement the existing paths through the park.

Macquarie Fields

- Simmos Beach Reserve.

Minto

- Coronation Park; and
- Minto Detention Basin.

Raby

- Lake Burrendah Reserve.

Woodbine

- Jackson Park.

Figure 5.2 highlights the Strategic and Main Feeder Routes which make up the Campbelltown Bicycle Network, while Figure 5.3 shows the full network, including the Local Access Connections and Urban Recreational Routes.

5.7 Links to Adjoining LGAs

As mentioned in Section 5.2, one of the key selection criteria for proposed routes was the connection into adjoining LGAs. This includes Liverpool LGA to the north, Camden LGA to the east and Wollondilly LGA to the south. The proposed linkages to these three LGAs are detailed below. It is noted that the process of establishing these links would include cooperation and consultation with the adjoining Council officers.

Liverpool LGA

The key regional link within the Liverpool LGA is the M7 cycleway, which travels along the alignment of the recently completed M7 motorway. This route begins at Camden Valley Way, but there currently is no direct link to this cycleway from Campbelltown LGA.

In terms of the Campbelltown LGA cycle network, there are two key north-south routes through the LGA. Campbelltown Road generally runs to the west of the railway line, while the route from Rudd Road to Canterbury Road and Glenfield Road runs to the east of the railway line. Connectivity to and from each of these north-south routes has been considered in choosing a preferred M7 link.

One key constraint to note for this area is the width of the Campbelltown Road overpass at the M5 motorway. This bridge has two traffic lanes with a narrow footpath on the west side only. There is limited scope to upgrade this bridge without widening or full replacement, which are both costly options. As such, there are limitations in connecting the Campbelltown Road route to the M7 via Camden Valley Way/Hume Highway intersection.

The most logical route for connecting the Campbelltown Road route to the M7 off-road route is to establish an off-road link along the alignment of the M5 motorway which would connect to the M7 cycleway via a bicycle crossing at the intersection of Camden Valley Way and the M7 on-ramp. A suitable crossing of Campbelltown Road would be required to link both directions of traffic with the bicycle shoulder lanes to the south of the Campbelltown Road motorway overpass. This preferred route avoids the narrow Campbelltown Road motorway overpass and provides a direct connection.

The preferred route for connecting the M7 to Glenfield Road is via the Camden Valley Way/Hume Highway intersection. This route would require a signalised bicycle/pedestrian crossing of Campbelltown Road at the Glenfield Road signalised intersection and an off-road path along the south side of Camden Valley Way. This route would service those cyclists using the north-south bicycle routes to the east of the railway line.

These routes are indicated in Figure 5.4.

Camden LGA

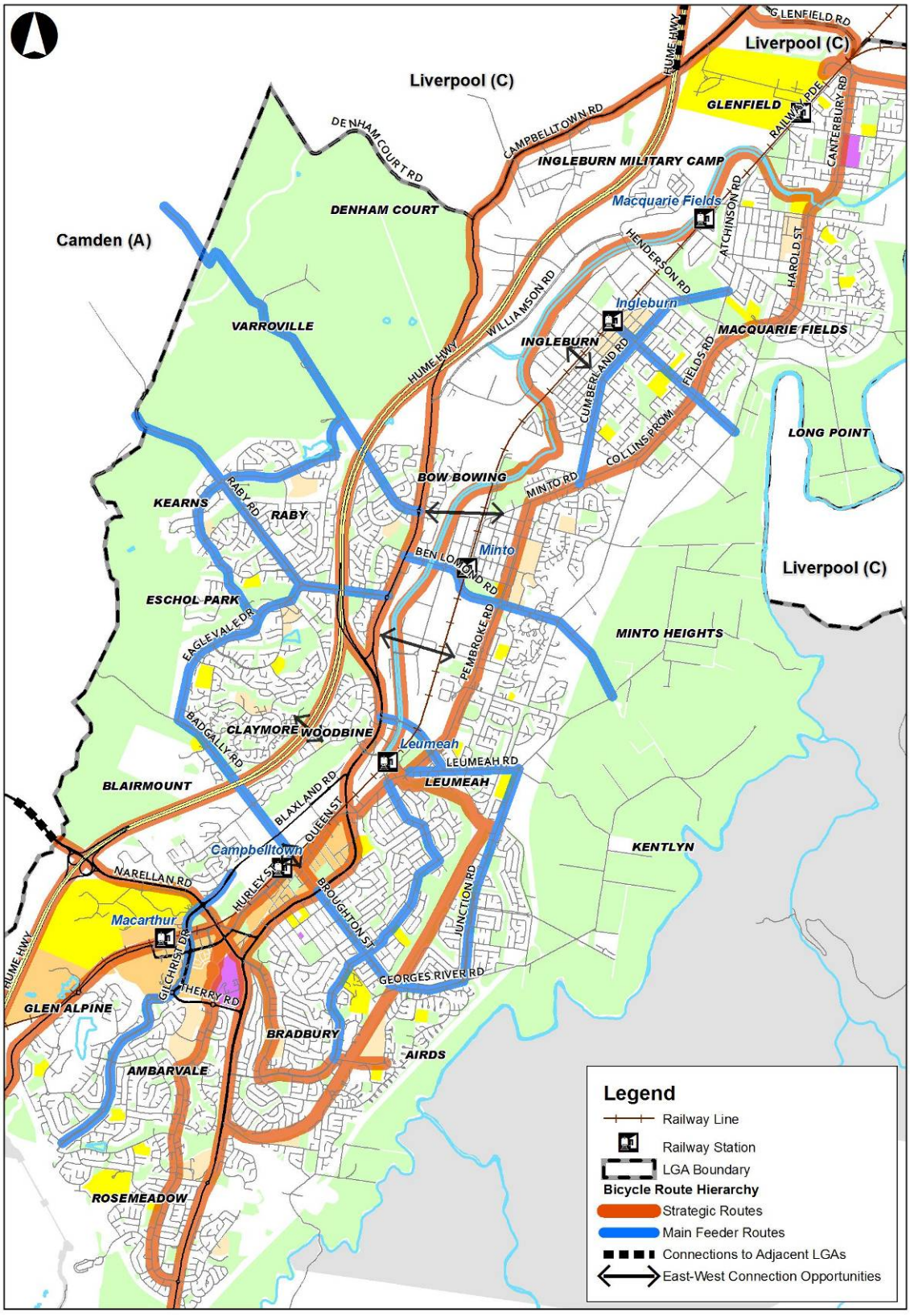
The key link to Camden LGA is via Narellan Road and the East-West Strategic Route EW1. The facilities along this route need to be upgraded to provide a safe cycle environment. In the short term, this would involve the provision of continuous on-road facilities in the form of bicycle shoulder lanes, including lanes across the M5 overpass which currently forms a pinch point. In the long term, it is envisaged that a separated bicycle/pedestrian path be provided along this route which would require either widening of the existing bridge or a separate overpass alongside the existing bridge.

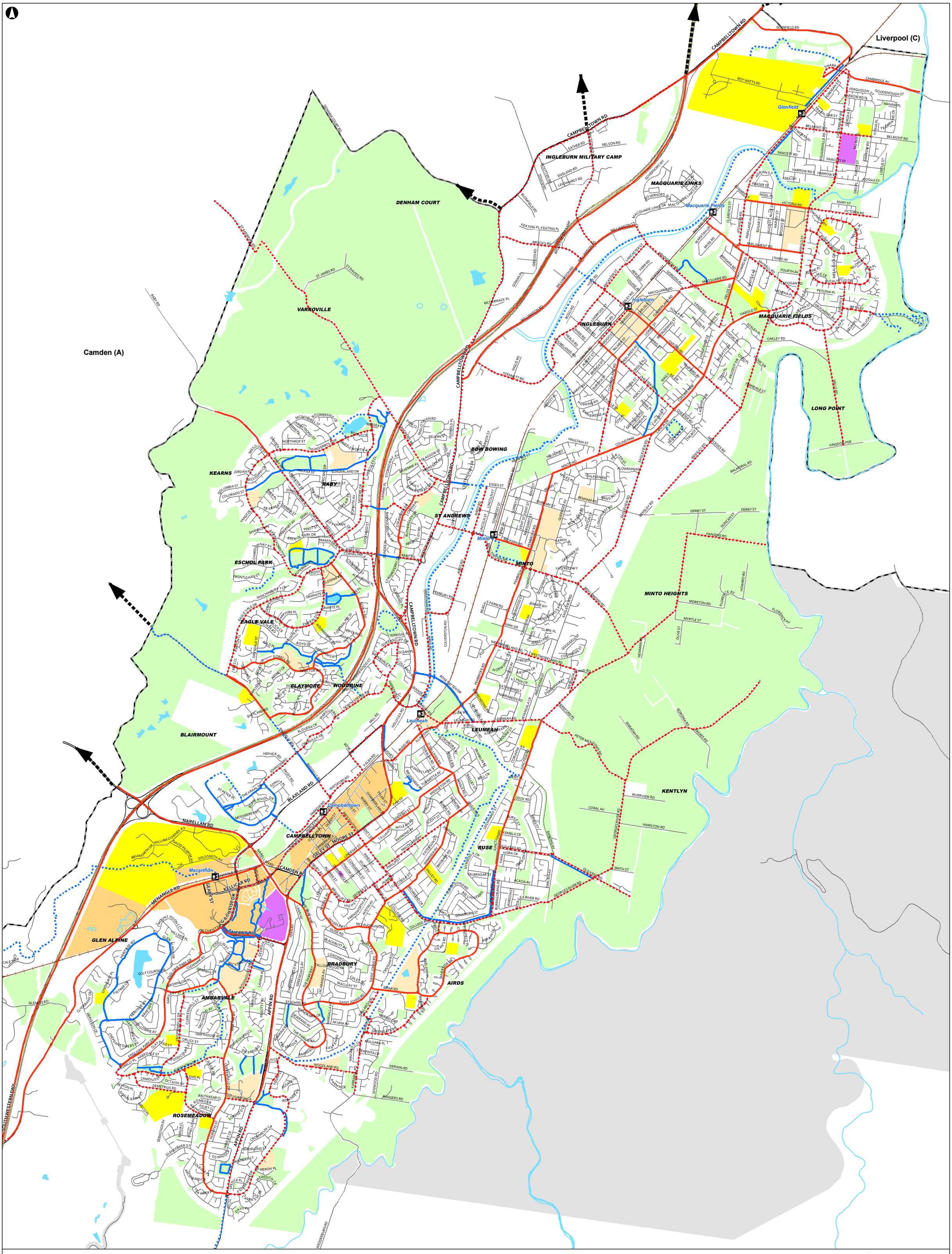
The Macarthur Regional Recreational Trail is a future project that would provide a link between Camden and Campbelltown LGAs. This route is currently in the planning stage and would involve the provision of a shared bicycle/pedestrian pathway connecting Camden and Macarthur Railway Station by passing through Mount Annan Botanic Gardens. The link into Campbelltown LGA would occur via the University grounds and a new grade-separated crossing of the M5 motorway.

Wollondilly LGA

Wollondilly LGA in the south is linked to Campbelltown via Appin Road, which is a high speed road with one traffic lane in each direction and variable sealed shoulder widths. The preferred bicycle treatment in the vicinity of this road would be a separated off-road path with adequate clearance from the vehicle carriageway. As such, Wollondilly planning documents indicate a proposed off-road cycleway along the east side of Appin Road into Appin. Campbelltown Council is encouraged to continue this proposed treatment into its LGA and provide a continuous off-road route to Appin. This would be a costly treatment and would therefore require input from future developers of adjacent land to assist in the funding provision. In the short term, it is recommended that shoulder widening works be undertaken to enable a bicycle shoulder lane treatment to be implemented along the length of Appin Road.

Figure 5.2: Proposed Campbelltown Bicycle Network – Strategic and Main Feeder Routes





Legend

- Freeway
- Main road
- Sealed road
- Railway Line
- Watercourse
- Railway Station
- LGA Boundary

Trip Attractors and Generators

- Regional Comprehensive Centre Zone
- District & Local Centre
- Schools and Colleges
- Open Space (Parks)
- Hospital or Retirement Village

Bicycle Route Facilities

- Existing On-Road Path
- Proposed On-Road Path
- Existing Off-Road Path
- Proposed Off-Road Path
- Connections to Adjacent LGAs

Client
Campbelltown City Council

Metres
0 300 600 1,200

Issue	Date	By	Chkd	Appd
P1	21-12-10	BDM	BDM	AS

Job Title
Campbelltown Bike Plan

Drawing Title
Campbelltown Existing and Planned Cycle Routes

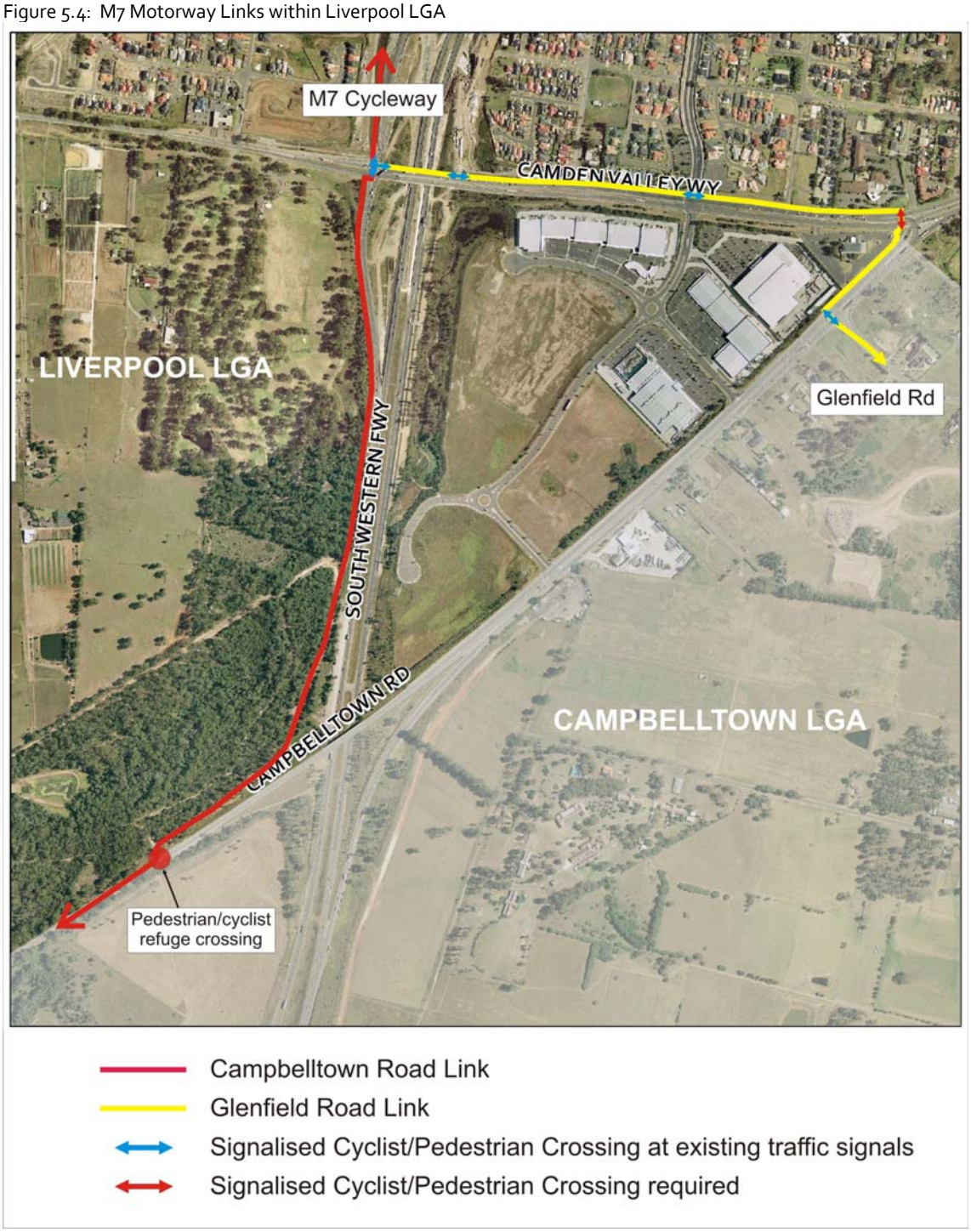
GTAconsultants
www.gta.com.au

Scale at A1
1:25,000

Drawing Status
Preliminary

Job No	Drawing No	Issue
GS10800	Figure 5.3	P1

Figure 5.4: M7 Motorway Links within Liverpool LGA



5.8 Cycle Friendly Traffic Management Measures

This section looks at some of the common traffic management measures currently existing within the Campbelltown LGA and some of the ways in which they can be designed to best suit the needs of both vehicles and cyclists.

5.8.1 Roundabouts

There are a large number of roundabouts within the Campbelltown LGA, many of which are located on the bicycle network. Roundabouts remain one of the most difficult traffic management measures for cyclists to negotiate, particularly in relation to the conflict between left turning traffic and straight through cyclists. Also, cyclists are commonly forced into the path of vehicles without a safe transition, making them vulnerable to surrounding vehicular traffic. This is particularly unsafe in high traffic and high speed environments.

Ideally, in the case of on-road cycleways, the roundabout should provide a continuation of the mid-block cycle lane treatment through the intersection, with a dedicated lane providing visual separation from vehicles. An example of this type of treatment is shown in Figure 5.5.

Figure 5.5: Roundabout Treatment Example (Englorie Park Drive)

On major roundabouts there is often a case for taking cyclists off the roadway and making use of the existing footpaths and pedestrian crossings to negotiate the roundabout safely. Care would need to be taken in implementing a treatment such as this to ensure that the transitions to and from the off-road sections are clear with good linemarking and signage so as not to surprise other vehicles and provide an unsafe situation for cyclists.

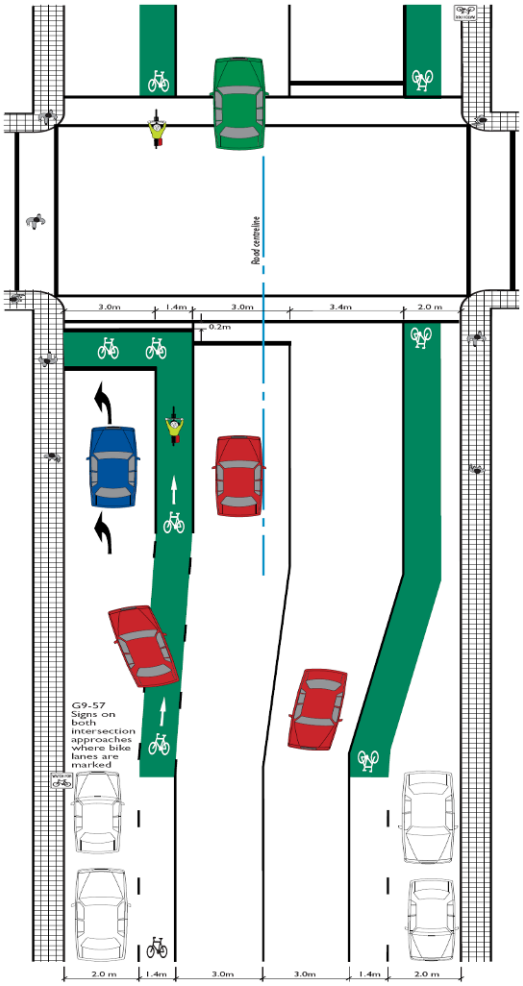
In areas which have low traffic volumes and speeds, it would be appropriate to have the cyclists sharing the road with the other vehicles through the roundabout. This treatment would involve marking cycle logos on the entry and exit to the roundabout, as shown in Figures 5.6 and 5.7.

Figure 5.6 and 5.7: Typical Roundabout Treatment – Shared Traffic

5.8.2 Signalised Intersections

Accommodating bicycle facilities at signalised intersections usually results in the removal or narrowing of lanes (usually parking) to accommodate bicycle lanes. A typical treatment is shown in Figure 5.8. It incorporates bicycle lanes leading to advance storage boxes to position cyclist in a very visible position and proceed through the intersection in full view of motorists (refer NSW Bicycle Guidelines).

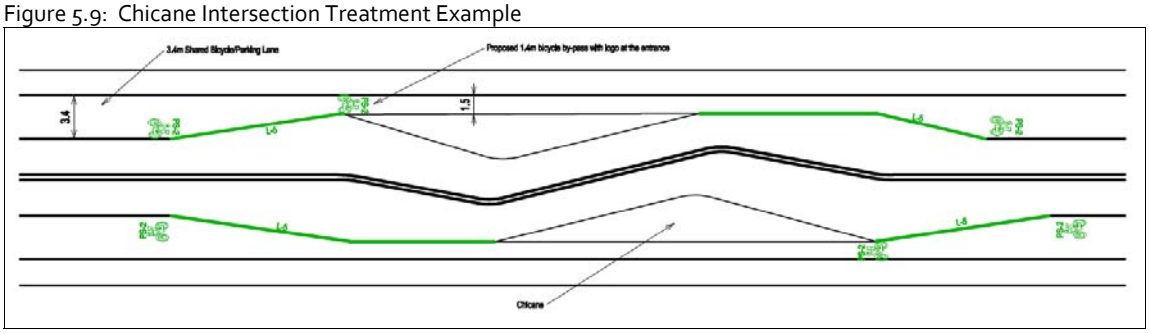
Figure 5.8: Signalised Intersection Treatment Example (Source: NSW Bicycle Guidelines)



5.8.3 Chicanes

Chicanes occur relatively frequently within the Campbelltown LGA, usually as a traffic calming device at a T-intersection. As with roundabouts, these intersection layouts are difficult for cyclists to negotiate. Figure 5.9 shows a bicycle bypass treatment where a cyclist travels on a bicycle lane unaffected by the chicane.

Figure 5.9: Chicane Intersection Treatment Example



5.8.4 Speed Humps

Apart from the obvious change in vertical alignment, speed humps do not pose a particular problem for cyclists, provided enough width is available to safely accommodate both cyclists and cars side by side. The construction and material used in the speed hump should not create an uncomfortable riding surface.

Where the travel lane narrows at the speed hump, a bicycle bypass lane could be provided as shown in Figure 5.10.

Figure 5.10: Speed Hump Bypass Lane Example

5.8.5 Gully Grates

Traditional cast iron grates provide a hazard for narrow-wheeled bicycles, particularly when they are placed parallel with the bicycle travel path. These should be replaced with bicycle friendly grates.

5.8.6 Pedestrian Refuges and Kerb Blisters

The construction of pedestrian refuge islands and kerb blisters can often create "pinch points" for cyclists, where it is unsafe for a car and bicycle to travel side by side through these locations without the risk of conflict. It is important to ensure that the construction of these devices allows a travel lane of between 3.7m to 4.2m safe distance for car and bicycle to pass side by side (as specified in the RTA NSW Bicycle Guidelines). Alternatively, a bicycle bypass lane similar to that detailed above for a speed hump may be provided.

In the case where the pedestrian refuge island is to be used by cyclists to cross the road the width of the refuge island should be a minimum of 2.0m to accommodate the length of a bicycle.

5.8.7 Green Cycle Surfacing

Green surfacing for cycle facilities is expensive and as such is not considered necessary at all locations. It is however considered necessary at locations where the safety of cyclists is of concern and is effective in highlighting the presence of cyclists at potential traffic conflict locations. The use of green surfacing at locations such as cycle lanes across intersections and storage boxes at signal intersections can provide major benefits for cyclists.

An example of a green surfacing application can be seen below in Figure 5.11.

Figure 5.11: Green Surfacing Application Example

5.9 Cycle Signing Plan

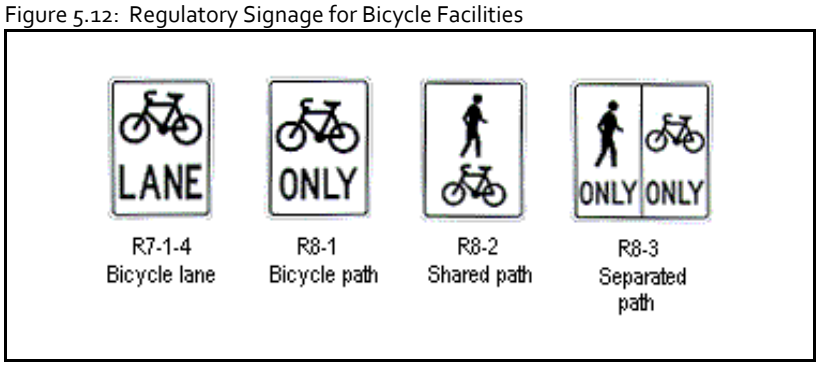
In order for the cycle network to be navigated effectively, a coherent and easy to understand signing system is required, as it is a crucial part of an effective network. Campbelltown LGA currently has very limited cycle signage, making it very difficult to navigate the routes that are currently available. The signing plan is intended to provide a framework for further development of the cycle signing requirements for the Campbelltown LGA.

There are three categories of cycle signage used in NSW – regulatory, warning and directional. A particular emphasis is placed on the directional component of the signing requirements as this is regarded as one of the more important components of the signing plan.

5.9.1 Regulatory Signage

Regulatory signs, with the use of linemarking, will generally define the type of bicycle facility provided. The NSW Bicycle Guidelines show the regulatory signs used for bicycle facilities, as well as optional supplementary plates. The four principal signs used are shown in Figure 5.12.

Figure 5.12: Regulatory Signage for Bicycle Facilities



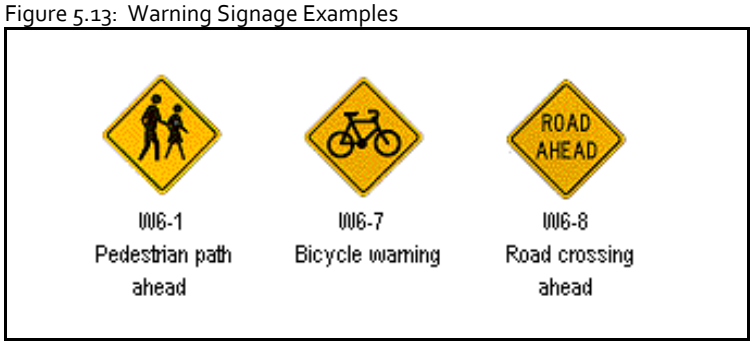
Regulatory signage is always used to define the start of a facility. Defining the end of a facility is generally not necessary, unless the facility is terminated mid-block, or at somewhere other than an intersection.

5.9.2 Warning Signage

Warning signs are diamond-shaped yellow signs and are used to warn cyclists of changed or particularly hazardous conditions. They are also used to warn other road users of bicycle movements. The NSW Bicycle Guidelines offer advice on the use of warning signs, as well as guidance signage and advisory signage.

Some of the most commonly used warning signs for the bicycle network, which may also be used on the general network, are shown in Figure 5.13.

Figure 5.13: Warning Signage Examples



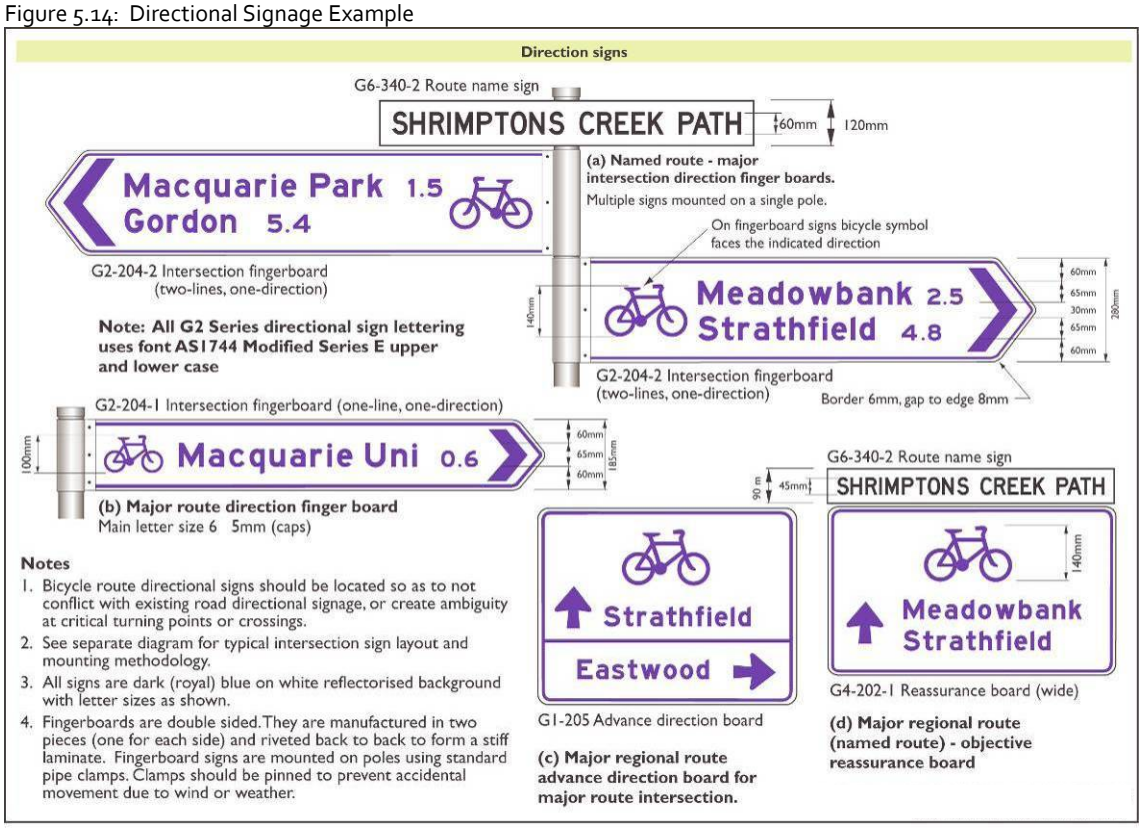
The location for warning signage will be different depending on the site, and should be placed to suit the overall design of the facility. Australian Standard AS1742.9 – Manual of Uniform Traffic Control Devices, Part 9 Bicycles Facilities and Part 2, Traffic Control Devices for General Use provide advice on recommended signage locations.

5.9.3 Directional Signage

A key element of the Signing Plan is the development of the directional signage component. It is important that directional signage is consistent throughout the network, and at all relevant intersections, to direct cyclists. Care should be taken during signage placement to avoid becoming lost in the clutter of other signs, or confusing motorised traffic, particularly for on-road routes.

Examples of typical directional signage are shown in Figure 5.14.

Figure 5.14: Directional Signage Example



In order for the Campbelltown Signing Plan to be most effective, key destinations should be identified and consistently used throughout the signing network including a range of regional, suburban and local destinations.

The sign examples shown above in Figure 5.14 would be suitable for signing the Strategic and Main Feeder Routes. In terms of the local routes, signage at the intersections may include local destination signage or simply a symbolic bicycle sign with an arrow directing cyclists further along the local routes as indicated in Figure 5.15.

Figure 5.15: Local Route Signage Example

5.10 Cycle Parking Plan

People who ride regularly or casually need more than a network of bicycle routes. They also need secure places and parking facilities to store their bicycles at either end of the trip. Cycle parking (or lack thereof) remains one of the main barriers to cycling even though, in most cases, this is a relatively easy facility to design, fund and implement. Improving the availability of bicycle parking and end-of-trip facilities is a critical element in achieving the overall objectives of the bicycle plan.

Key aspects of high quality bicycle parking include:

- Security: to minimise the risk of theft;
- Visibility: located in an area with a high amount of passing foot traffic, to deter theft;
- Shelter: to protect against rain;
- Convenient: positioned as close as possible to the likely user destinations, or within a prominent area; and
- Signage: to clearly identify the direction of bicycle parking facilities from areas where the parking facility is not visible.

5.10.1 Cycle Parking Types and Standards

In order to conform to Australian Standards (AS2890.3-1993 Part 3: Bicycle Parking Facilities) parking rails must allow the wheels and frame of a bike to be locked to it securely and also provide sufficient support to prevent the bike from falling over. The three classes of bicycle parking are:

i Class 1 facilities provide a high level of security such as enclosed individual lockers;

ii Class 2 facilities provide a medium level of security such as locked compounds with internal bike rails; and

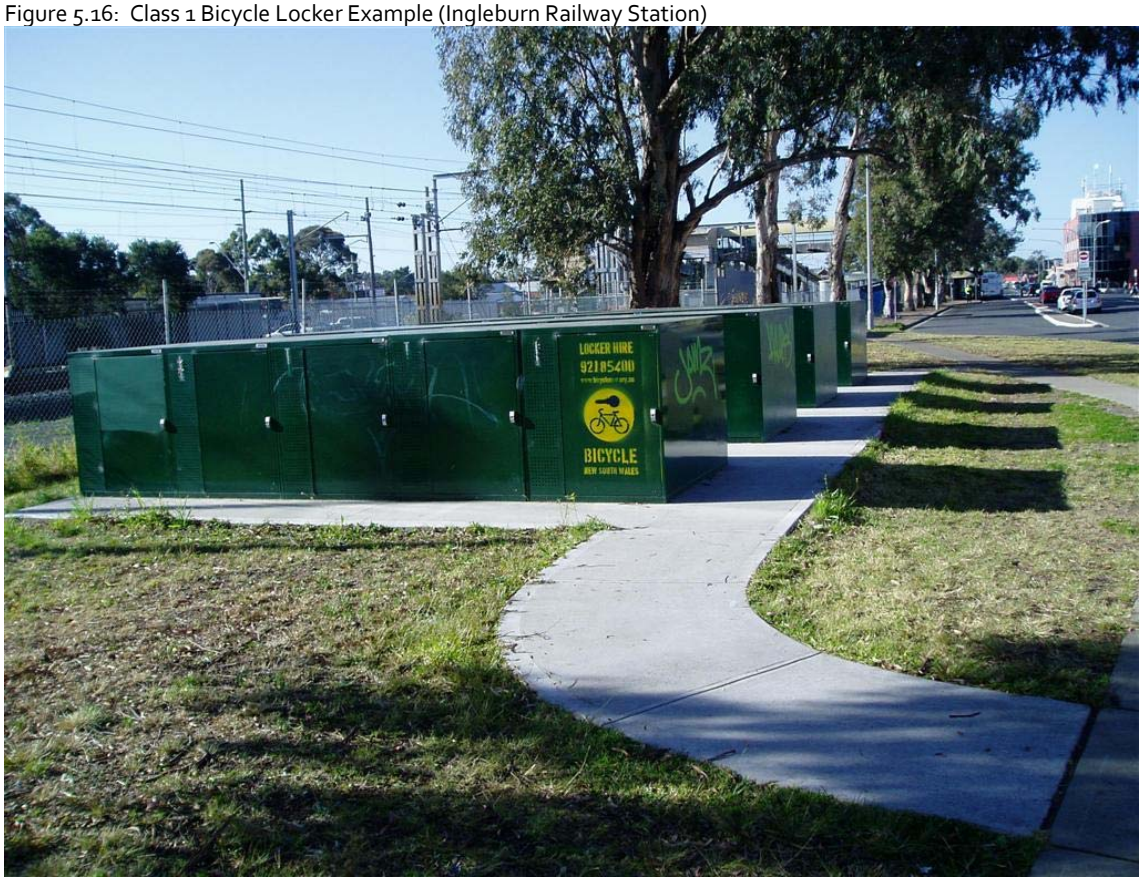
iii Class 3 facilities provide a low level of security such as external bicycle rails and racks.

When determining the type of facility required the following principles apply:

- Class 1 and 2 facilities should generally be provided for medium to long term parking (i.e. railway stations, workplaces); and
- Class 3 facilities are suitable for short term parking (cafes, shops, parks, etc).

An example of an existing Class 1 facility in the Campbelltown LGA is shown in Figure 5.16.

Figure 5.16: Class 1 Bicycle Locker Example (Ingleburn Railway Station)



An alternative bicycle parking facility to the Class 1 bicycle lockers is the Class 2 bicycle cage. These are becoming more popular around Australia as the preferred storage facility for large numbers of bicycles particularly at transport nodes such as railway stations and large bus stops. This type of facility contains racks within a compound that provides security and shelter from the weather. An essential feature of this type of parking is the smart card technology to enable a high level of security to be provided. Users would register with the relevant authority (Council, Bicycle NSW, Ministry of Transport or other) and receive a swipe card which contains identification details. This would enable the activity of the user to be recorded each time they use the facility. Only those that are registered users would be able to access the cage.

One example of this type of facility being implemented in Sydney is the Whistler Street Bicycle Parking Station. The bicycle parking station, set up and administered by Manly Council, has the capacity to store 72 bicycles in an area the size of five car parking spaces. Users are charged a one-off access card fee of $50 per bicycle parking space that enables easy access into the facility.

Another example at a location in Perth is shown in Figure 5.17.

Figure 5.17: Class 2 Bicycle Facility Example – High security bike cage, Perth

Photos: Jim Krynen, PTA WA

The NSW Bicycle Guidelines (RTA, 2003) recommend the use of medium or high density parking facilities in situations where the floor space available for bicycle parking is at a premium cost and user demand is substantial, such as town centres, railway stations and transport interchanges. Figures 5.18 and 5.19 provide information on the design details.

The following comments are offered for consideration:

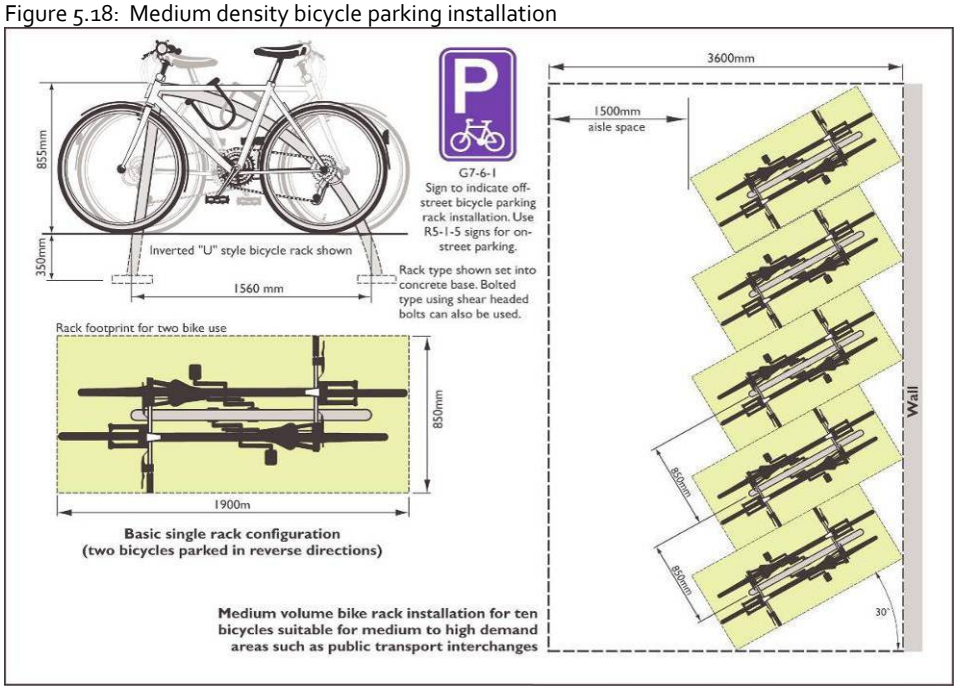
- For medium density parking the recommended spacing is for 850mm mounting centres. It is essential that the racks be mounted at angles of between 15 and 45 degrees to reduce conflicts between adjacent handlebars and pedals. This layout method uses approximately 30% less space than standard U-rails mounted at 1200mm centres, as per the Australian Standards (AS2890.3); and
- For high density parking the recommended spacing is for 750mm mounting centres and supports the front bicycle wheels above the ground. Each alternative bicycle is mounted higher than the one next to it. This arrangement ensures that handlebars do not conflict. Due to the closeness of storage centres, angle-mounting of bikes is not recommended as it makes the racks difficult to use. This bicycle rack mounting layout method uses approximately 40% less space than the Standard.

A number of proprietary rack systems are available for providing medium and high density bike parking. A summary of the size and capacity of some typical solutions are as follows:

- Cora "Expo Series" – single unit 1250 long x 850mm deep, holding 5 bikes (see Figure 5.20). Other single unit sizes are available;
- Securabike "Compact Security" – single unit 1200mm long x 1100mmm deep, holding 4 bikes (see Figure 5.21); and

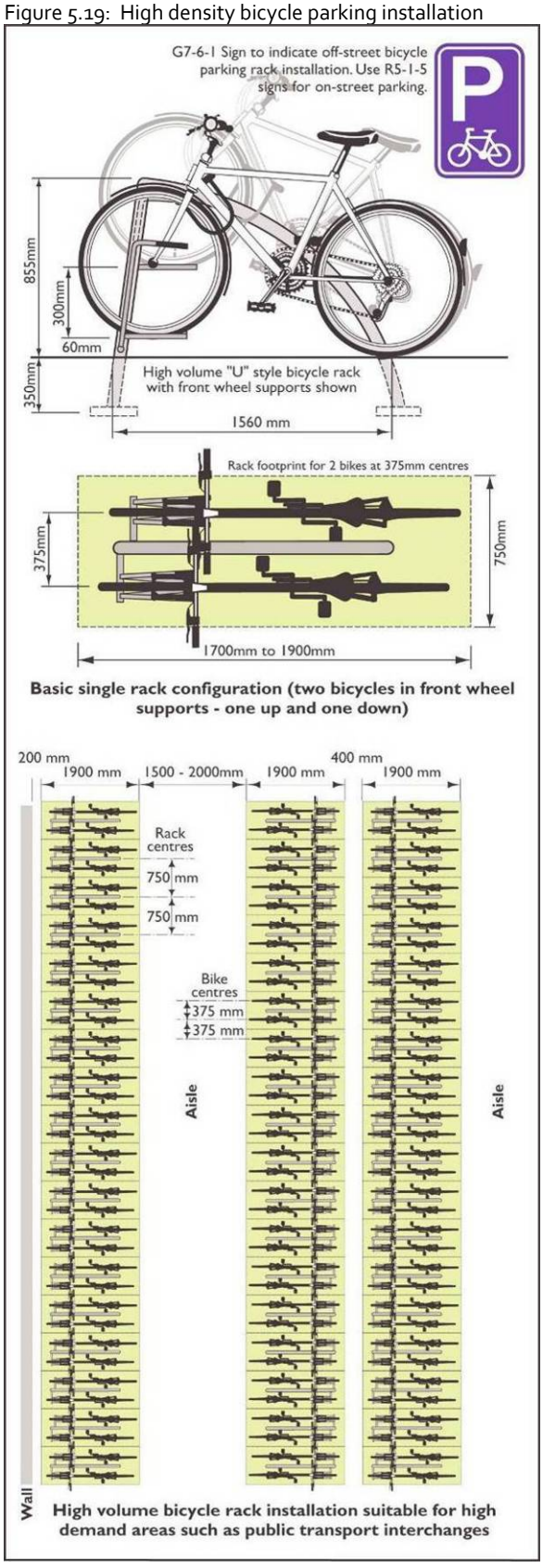
- Securabike "Concord" – single unit 950mm long x 950mm deep, holding 3 bikes (see figure 5.22).

Figure 5.18: Medium density bicycle parking installation



Source: RTA, 2003, p77

Figure 5.19: High density bicycle parking installation



Source: RTA, 2003, p77

Figure 5.20: Cora "Expo Series" bike racks

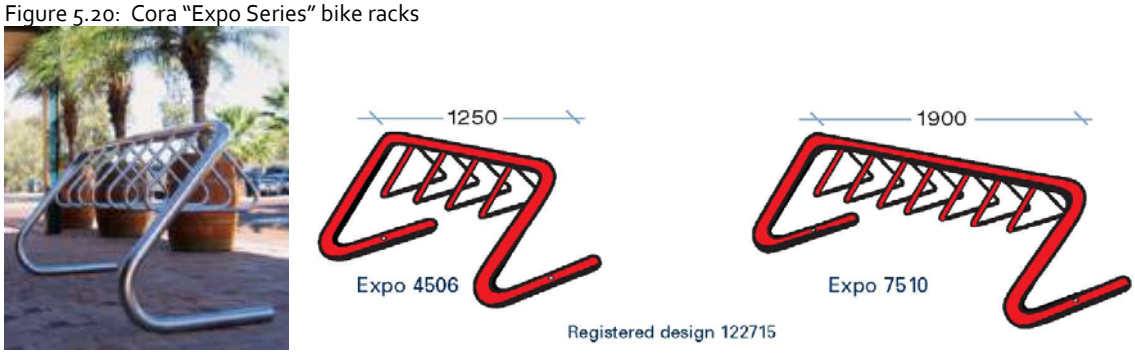
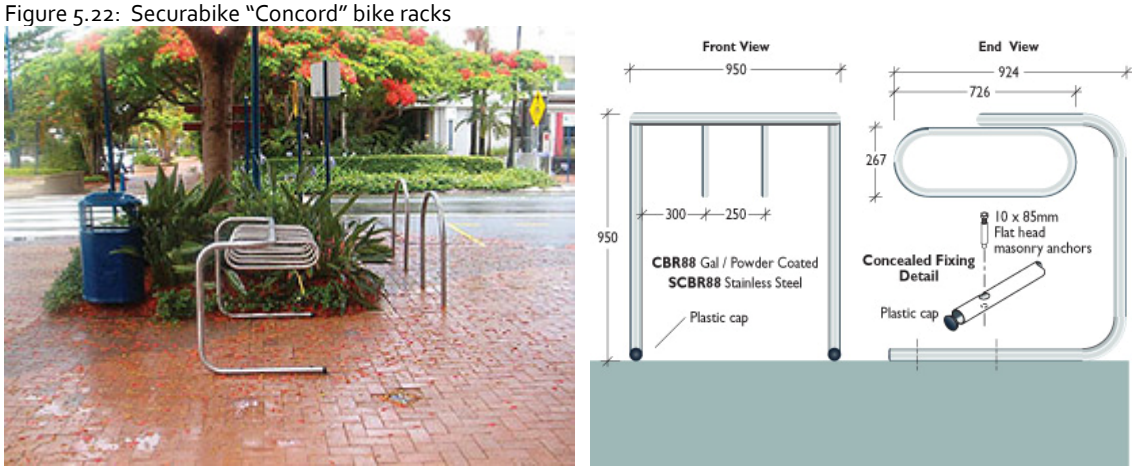


Figure 5.21: Securabike "Compact Security" bike racks

Figure 5.22: Securabike "Concord" bike racks



In areas where these larger capacity rails cannot be provided either due to space or level of demand, other bicycle parking options exist which require less space and have the capacity to accommodate one or two bicycle, for example, the inverted U-rail (Securabike BR85 or similar approved). These are generally classified as Class 3 facilities. Current examples of U-rail bicycle parking are shown in Figures 5.23 and 5.24.

Figure 5.23: Class 3 Bicycle Parking Example

Figure 5.24: Class 3 Bicycle Parking Example

Another bicycle parking option for short-term (Class 3) facilities that could be utilised is a sign post ring, as has been installed throughout the City of Sydney. These rings can be retrofitted to existing signposts or power poles for low cost and are capable of holding up to two bicycles. An example of this style or bicycle parking is shown in Figure 5.25.

Figure 5.25: Bicycle Parking fitted to Existing Infrastructure

5.10.2 Existing Cycle Parking

Council is responsible for parking within the public domain and within its buildings. It provides parking facilities for bicycle riders as a direct response to the unsustainable growth of on-street car parking demand. Existing parking facilities within the LGA include:

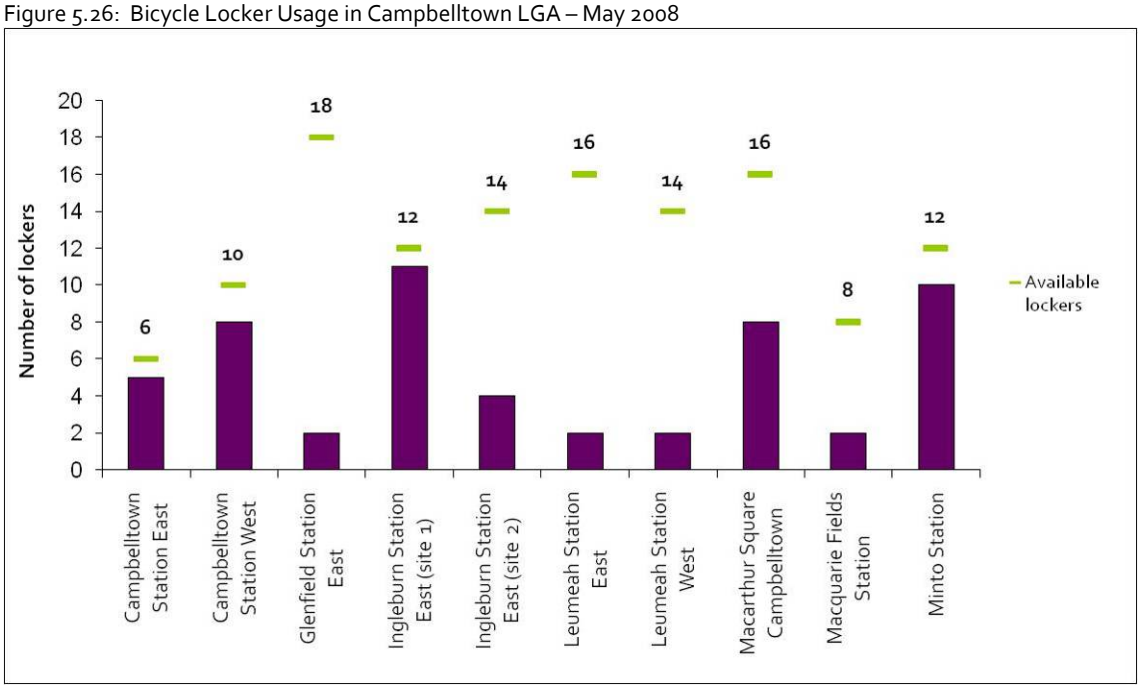
- Bicycle lockers at railway stations and shopping areas (refer Figure 5.26); and
- Bicycle racks/rails at:
  - Macarthur Square,
  - Campbelltown Mall,
  - Market Fair Shopping Centre.

It is noted that bicycle parking in the form of bicycle racks was previously installed in Queen Street, Campbelltown. However, this was removed following a fatal assault.

Bicycle Locker Usage

GTA Consultants collected information from Bicycle NSW regarding the number, location and use of existing bicycle parking lockers within the Campbelltown LGA. A total of 126 lockers are currently installed at 10 locations across the LGA. These locations were predominantly at railway stations and shopping areas. It was reported that in May 2008, approximately 43% or 54 lockers were being hired. At some of the locations, such as Campbelltown, Ingleburn and Minto, the occupancy was up towards 90%. It is noted that additional lockers have been provided at some of these locations in recent years. Existing locker usage is summarised in Figure 5.26.

Figure 5.26: Bicycle Locker Usage in Campbelltown LGA – May 2008



Low occupancy rates for a number of the above locations may be attributed to several factors. Observations indicate that some of the bicycle lockers are not well located and do not have any signage. Also, the inflexible operation of the lockers may be discouraging potential users. The general procedure currently in place in for these lockers is for potential users to contact Bicycle NSW to register. Those wishing to register for a locker are required to pay $50 per quarter, or $180 per annum, plus a $50 refundable security deposit.

Lockers are no longer considered an effective method of providing high security bicycle parking at train stations. The limitations are listed as follows when compared to the cage style system:

- Occupancy is poor;
- Space and capital intensive;
- Can only be signed out to one person at a time, even if seldom used; and
- Difficult to determine the contents of a locker (possible security risk).

A further note is that bicycle parking at stations needs to cater for both the regular and infrequent users. Whilst there may be a small degree of cross over, regular users will generally prefer high security bicycle enclosures and infrequent users will generally have their needs met by casual bicycle parking arrangements. Short term users (parking for less than 4 hours) will usually be satisfied by casual parking as well.

As such, the preferred type of facility for new bicycle parking at the stations and other large trip attractors such as the major shopping centres would be the Class 2 secure bicycle cage with rails. This type of facility should be investigated further for either complementing or replacing the existing bicycle lockers at the existing locations, and for consideration at new locations.

5.10.3 Cycle Parking Priority Locations

To allow for a staged implementation of cycle parking facilities potential locations have been prioritised. The highest priority locations are the Campbelltown, Macarthur Square and Ingleburn commercial and retail districts along with the railway stations. Bicycle parking should also be provided at all Council buildings and parks, particularly the Council Offices in Campbelltown.

It is important to have small numbers of cycle parking facilities located over a large number of locations, however not all the facilities need to be installed at once. Table 5.2 lists the priority locations and the types of parking suitable for each location.

Schools and businesses have a responsibility for providing parking for their staff, students and customers. Council has a role to promote cycling in the area and to assist them in developing positive parking programs. A useful reference is the City of Sydney website which includes a page on Cycle Friendly Work Places. This page provides information to assist organisations to determine the optimal number and type of bicycle facilities for a cycle friendly workplace, along with a spreadsheet to help determine the number of bike parking facilities for a workplace.

In terms of new developments, all efforts should be made to ensure that bicycle parking is provided as part of each development with reference to the recommended bicycle parking provisions in the NSW Department of Planning Guidelines for Walking and Cycling.

Table 5.2: Summary of recommended bicycle parking

General Location	Existing Parking Capacity	Future Parking Recommendations			
		No. of Additional Locations (minimum)	Rails	Bicycle Cages with rails	Priority
Retail/Employment					
Queen Street, Campbelltown	-	6	✓	-	1
Campbelltown Mall	10 bicycles (rails) – single location	4	✓	-	1
Macarthur Square	19 bicycles (rails) – single location 16 lockers (single location)	4	✓	-	1
Oxford Street, Ingleburn	-	4	✓	-	1
Campbelltown Council Offices	-	2	✓	-	1
Minto Mall	-	2	✓	-	1
Glenquarie	-	2	✓	-	1
Railway Street, Glenfield	-	2	✓	-	1
Airds Village Shopping Centre	-	2	✓	-	1
Bradbury Shopping Centre	-	2	✓	-	1
Rosemeadow Marketplace	-	2	✓	-	1
Glen Alpine Shopping Centre	-	1	✓	-	1
Ambarvale Shopping Centre	-	1	✓	-	1
Market Fair	8 bicycles (rails) – single location	-	-	-	-
Leisure/Recreation					
Playgrounds, tennis courts, etc	-	Approx. 30	✓	-	2
Railway Stations					
Macarthur	-	1	-	✓	2
Campbelltown	16 lockers (2 locations)	1	-	✓	2
Leumeah	30 lockers (2 locations)	1	-	✓	2

General Location	Existing Parking Capacity	Future Parking Recommendations			
		No. of Additional Locations (minimum)	Rails	Bicycle Cages with rails	Priority
Minto	12 lockers (single location)	1	-	✓	2
Ingleburn	26 lockers (2 locations)	1	-	✓	2
Macquarie Fields	8 lockers (single location)	1	-	✓	2
Glenfield	18 lockers (single location)	1	-	✓	2
Menangle Park	-	1	-	✓	2
Health, Education and Private Business – To be implemented through encouragement from Council					
Primary and Secondary Schools	-	Schools to implement	✓	✓	1
University of Western Sydney Campus	5 rail locations	University to implement	✓	✓	2
TAFE NSW South Western Sydney Institute	-	TAFE to implement	✓	✓	1
Campbelltown Hospital	-	Hospital to implement	✓	✓	2
Other businesses	-	Businesses to implement	✓	✓	2

5.10.4 Monitoring of Cycle Parking

Regular monitoring of cycle parking to identify maintenance problems and parking congestion should be incorporated into regular Council activity. Local cyclists and bicycle user groups (BUGs) can also assist in this task. Monitoring should also seek to identify locations where bikes are continually locked to street furniture as this will identify where additional parking may be required or where existing parking is poorly located.

5.11 Implementation Plan (Work Schedules)

A summary of the Priority 1 cycle proposals and implementation costs for the proposed Campbelltown Bicycle Strategy for construction during the 5 to 10 year plan period are indicated in Table 5.3.

It is noted that the costed works relate only to the Strategic Routes and Main Feeder Routes. Due to funding limitations, the works required to implement the local feeder routes have not been assessed or costed due to the need to upgrade the important high level routes.

Full detail for all Priority 1, 2 and 3 works for the Strategic and Main Feeder Routes has been provided in the work schedules contained in Appendix D.

The following recommendations are made with regards to implementation of the bicycle plan:

- Provide sufficient funds for the construction of the Priority 1 works over the plan period, including regular Council budget allocation and external funding sources such as grants, joint funding programs, etc (refer Section 8); and
- Develop suitable management programs to recognise early implementation opportunities for Priority 2 and 3 works as they arise, eg through regular road and footpath maintenance and upgrading programs, formal planning instruments.

Table 5.3: Campbelltown Bicycle Strategy Priority 1 Items

Route	Section	Description	Total Distance (m)	Priority 1 Item Cost
Strategic Routes				
Campbelltown Road/Moore Oxley Bypass/Appin Road	Moore Oxley Bypass to Campbelltown Road/Raby Rd intersection	On-road bicycle lanes, kerb works and shoulder widening, delineation	5,625	$210,000
	Campbelltown Rd – Jackson Park to St Andrews Rd	Shoulder works and delineation	3,000	$510,000
Copperfield Drive to Kellicar Road (Appin Road Alternative Route)	Copperfield Drive - Woodhouse Drive - Marsden Park - Kellicar Road	Treatments to remove pinch points, intersection treatments, delineation	1,150	$370,000
Menangle Road to Canterbury Road	Rudd Road - Pembroke Road - Minto Road - Collins Promenade - Fields Road - Harold Street - Canterbury Road	On-road bicycle lanes, intersection treatments (roundabouts and signals), delineation	13,625	$1,160,000
Narellan Road to Airds	Narellan Road - The Parkway - St Johns Road - Briar Road	Shoulder widening, intersection treatments, treatment of pinch points, delineation	2,310	$200,000
Main Feeder Routes				
Ben Lomond Road	Campbelltown Rd to Airds Rd	Intersection treatments	500	$28,000
Raby Road	Thunderbolt Drive to Campbelltown Rd off-ramp (west of M5)	Intersection treatments, bicycle shoulder lanes	2,200	$82,000
Broughton Street	Hurley St to Junction Rd	Bicycle shoulder lanes, intersection treatments	3,000	$112,000
Gilchrist Drive	Therry Rd to Narellan Rd	Bicycle shoulder lanes, intersection treatments	1,300	$56,000
Total				**$2,728,000**

6. Supporting Increased Bicycle Use

6.1 Support Program

Supporting increased bicycle use is the "software" component of the bicycle strategy which helps bicycle riders to use the "hardware" - the bicycle network and the road system generally. The Bicycle Strategy proposes a five-point support program designed to assist both the community and visitors to the region to share in the benefits of cycling (and walking) in and around the LGA and ensure a thorough and coordinated implementation of the Strategy as a whole.

A number of these recommended programs and initiatives support and encourage cycling by seeking to improve the operating skills of new and existing bicycle riders of all ages. Other programs provide support in the form of practical information such as maps and guides while others encourage and celebrate cycling in the region with events and activities.

Some programs and initiatives will be directly undertaken by Council in partnership with external organisations and the community while others will be undertaken by third party organisations with encouragement from Council.

Further to the above, the community consultation process identified strong support for the consideration of the needs of other cyclist types, including mountain bikers, BMX riders, road cyclists and track cyclists. It is noted that Council would prioritise facilities for these riders, such as BMX tracks and criterion tracks, based on the interest shown by the community along with public safety. Any proposals for establishment of new track facilities would need to be investigated further through consultation with the relevant interest groups.

Table 6.1 provides a detailed overview of the recommended support program.

Table 6.1: Support Program

Objective	Recommended program or initiative	Partners	Status
1. To increase community and visitor information, education, awareness and basic skills	Campbelltown Cycling Central - An information-rich web based resource for cycling in Campbelltown and the Macarthur Region, which aims to provide links to the Strategy's support programs and initiatives. A good opportunity exists through the Macarthur tourist website www.visitmacarthur.com.au which could include downloadable cycling maps.	Campbelltown City Council Campbelltown Visitor Information Centre Macarthur Bicycle User Group (MacBUG)	
	Bicycle Map - showing recommended bicycle routes. Available in printed paper or downloadable from Council's website. This document is currently available as a network map. However, this should be further developed into a brochure style with scenic routes and tourist-style information (refer to the example document "Cycling and Walking in Waverley and Woollahra")	Campbelltown City Council Macarthur Bicycle User Group (MacBUG)	Network map currently available, but more work required to develop into brochure style.
	Ride to the shops - maps showing recommended routes to get to shopping centres in the Campbelltown area including Campbelltown Mall, Macarthur Square and Ingleburn	Campbelltown City Council Chamber of Commerce	
	Ride for fun - a guide to outdoor recreational facilities (bike paths, parks, reserve, etc) easily accessible by bike or walking. Including bicycle-friendly parks and places to ride.	Campbelltown City Council NSW Department of Sport and Recreation Health Promotion Services, Sydney South West Area Health Service	
	Getting fit in Campbelltown - a guide to fitness and recreational sites in Campbelltown accessible by bicycle and walking. This would also refer to recommended road/training routes centred on the Macarthur area.	Campbelltown City Council Macarthur Bicycle User Group (MacBUG) Local bicycle businesses Fitness industry companies	
	Introduction to cycling - 'give it a go!' - a series of 'experiences' for beginners to introduce them to the joys of cycling and to address their issues and concerns.	Campbelltown City Council Macarthur Bicycle User Group (MacBUG) Private trainers Bicycle NSW Racing clubs	

Objective	Recommended program or initiative	Partners	Status
	Ride a Bike - promoting courses for children and adults to train and improve riding skills, including those already provided at the Bicycle Education and Road Safety Centre in Campbelltown. Other opportunities include the existing off-road routes within Campbelltown LGA parks and reserves.	Campbelltown City Council Health Promotion Services, Sydney South West Area Health Service TAFE/Education Department Private trainers	Make use of Bicycle Education and Road Safety Centre in Campbelltown
	Signs and Art Work in parks to promote safe cycling and the work by local artists	Campbelltown City Council Local artists	
	Campbelltown Heritage Trail - a self guided bicycle tour of historic sites in and around Campbelltown and the Macarthur Region. Interpretive signage is a key element.	Campbelltown City Library Campbelltown Visitor Information Centre Local historic society Macarthur Bicycle User Group (MacBUG)	
	Driver education - Promote to motorists, including general motorists and provisional licence holders, the road rules and responsibilities for sharing the road with cyclists.	Campbelltown City Council RTA Police	A current Council initiative includes the use of VMS boards to publicise road safety and cycling messages
	Gear up Girl! – this is a yearly event held by Bicycle NSW that encourages women to become involved in bike riding in a supportive environment through group rides. Campbelltown City Council should promote involvement in this event, which is held in both Sydney and Goulburn. Gear up Girl workshops are also hold regularly to teach bicycle maintenance and practical skills.	Campbelltown City Council Bicycle NSW	
2. To encourage practical use of the bicycle as transport to school and work	Ride to Work – Bicycle NSW program based on the successful Bicycle Victoria program which encourages workplaces to set up self help groups	Bicycle NSW Bicycle Victoria Business community Unions	
	Ride to School - Getting kids back on bikes and parents' cars off the streets. The NSW Government Schools Physical Activity and Nutrition Survey (SPANS) program provides a valuable resource for the local health services. The Premier's Council on Active Living may be able to assist: www.pcal.nsw.gov.au	Campbelltown City Council Education Department Health Promotion Services, Sydney South West Area Health Service Australian Government agencies	

supporting increased bicycle use

Objective	Recommended program or initiative	Partners	Status
	Ride to work – Transport Access Guides (TAGs) showing suggested bicycle and walking routes and other sustainable transport information for major employment areas.	Campbelltown City Council Major corporations Chamber of commerce NSW Department of Commerce – Office of Industrial Relations	
	Ride to school – Transport Access Guides (TAGs) showing suggested bicycle and walking routes and other sustainable transport information for schools. The RTA website provides valuable guidance for the development of TAGs.	Campbelltown City Council Private and public schools RTA and other State Government departments Health Promotion Services, Sydney South West Area Health Service	
	Campbelltown Bike Buddies - a simple self help scheme to assist individuals to get going on their cycle to work	Macarthur Bicycle User Group (MacBUG) Bicycle NSW	
	Campbelltown City Council - leading by example. Council to set up a program to encourage staff to ride to work and for short work trips. This has been successful in Sydney, Brisbane and many other places of work. Also, refer Figure 2.3 for cycling and walking catchment areas.	Campbelltown City Council City of Sydney pilot program Bicycle NSW	
3.To provide opportunities for the community to ride in Campbelltown#	Ride around Campbelltown# - Small group rides in the area hosted by the Macarthur Bicycle User Group. MacBUG currently hold regular group rides outside of the Campbelltown area including the Illawarra and Southern Highlands.	Macarthur Bicycle User Group (MacBUG) Campbelltown City Council Campbelltown Visitor Information Centre	
	Ready-to-Ride day# - This is Campbelltown's annual bike day which is currently held as part of NSW Bike Week to encourage bike riding in the local community and promote safe cycling behaviour. This event should continue to run and be considered for expansion to potential include making some of the suburbs mains streets car-free for a part of the day. Local cafes and restaurants could also become involved by providing breakfast/lunch for cyclists.	Campbelltown City Council Campbelltown Visitor Information Centre Business community Café and restaurant owners Macarthur Bicycle User Group (MacBUG) Bicycle NSW RTA	
4. To improve and expand bicycle parking and supporting infrastructure	Improve and expand the level and quality of bicycle parking in the public domain (refer Section 5.9.3)	Campbelltown City Council Macarthur Bicycle User Group (MacBUG)	

Objective	Recommended program or initiative	Partners	Status
	Enable wider community participation in Council's bicycle rack installation program (eg: BIKEast provided detailed advice to the City of Sydney on bicycle rack locations based on extensive field-work; sponsor a bike rack)	Campbelltown City Council Macarthur Bicycle User Group (MacBUG)	
	Require and encourage the private sector and government agencies to provide bicycle parking and end-of-trip facilities in and around their buildings	Campbelltown City Council State Government agencies Private sector (major employers)	Volume 2 of the Campbelltown (Sustainable City) DCP 2007 Engineering Design for Development includes a section on design for cycleways and footpath paving. However, there needs to be some general criteria set for parking and end-of-trip facilities.
	Develop effective strategies to reduce bicycle theft including: Availability of secure bike parking facilities The use of high security locking devices by bike riders Effective stolen bike recovery system and policing Lack of a ready market for stolen bikes. If and when bicycle theft becomes an issue, a joint program is required with Council, the Bicycle User Group and the Police.	Campbelltown City Council Macarthur Bicycle User Group (MacBUG) Police	
5. Promote Bicycle Tourism, Sport and Events	Encourage and support the development of bicycle tourism and sporting facilities, either as fully private initiatives or as PPP Public-Private Partnerships. Opportunities could include: BMX Track Mountain Bike Range On-road circuits for recreational and training cyclists	Campbelltown City Council Campbelltown Visitor Information Centre Macarthur Bicycle User Group (MacBUG) Cycling Australia NSW Institute of Sport Tourism NSW Bicycle shops Commercial operations (land-owners, motels, cycle tour operators, racing clubs, etc)	

Objective	Recommended program or initiative	Partners	Status
6. To integrate support for the Bicycle Strategy into all areas of Council operation	Ensure coordination and integration of cycling within Council's policies and operations - GIS, internal policies, planning instruments (DCPs and LEPs), tourism strategies, staff training (refer Section 7.2)	Campbelltown City Council Campbelltown Visitor Information Centre	
	Maintenance, repair and roadworks - Hazard reporting scheme. Regular maintenance, provision for cyclists in road works (refer Section 7.2)	Campbelltown City Council RTA	
	Cycle Plan Working Party - monthly or quarterly meetings to discuss and develop the bicycle infrastructure and support plan and bicycle tourism	Campbelltown City Council (Road Safety, Traffic, Social Planning) Campbelltown Visitor Information Centre Macarthur Bicycle User Group (MacBUG) Bicycle shops Police RTA	
[#] *All organised events require formal applications and approvals, such as Traffic Management Plans, Planning approvals and Local Traffic Committee approvals.*			

It is recommended that a detailed review of the Support Program be conducted to set target dates and allocate suitable financial and staffing resources, noting that many items are low-cost management programs or "low hanging fruit".

7. Implementation, Evaluation and Monitoring

The implementation of the bicycle network will need to be closely coordinated with the implementation of the support sections of this strategy. This coordination is essential to ensure that mutually supporting programs are delivered in a timely manner with an adequate level of funding and community support.

7.1 Monitoring and Evaluation Program

A program to monitor implementation of the Bicycle Strategy is recommended. Such a program will feed back into the ongoing development of the Bicycle Strategy and ideally will permit improvements and cost savings. An investigation of bicycle strategy monitoring programs used elsewhere has determined that this process would be valuable and provide feedback for Council and the community. As good as monitoring programs may seem, they require effort, involvement and commitment from Council and the cycling community. Inevitably there are additional costs.

A number of international monitoring schemes were selected for evaluation. Common to all programs is the need to have a comprehensive scheme which will report on a range of issues covered by the Bicycle Strategy, such as:

- Engineering works programmes;
- Bicycle use;
- Modal share;
- Bicycle crashes;
- User satisfaction levels;
- Condition of bicycle facilities;
- Network implementation; and
- Level of service improvements (LTSANZ 2004).

Similarly a UK assessment process (ERCDT 2004) devised for local government recommends ten criteria for monitoring and assessment:

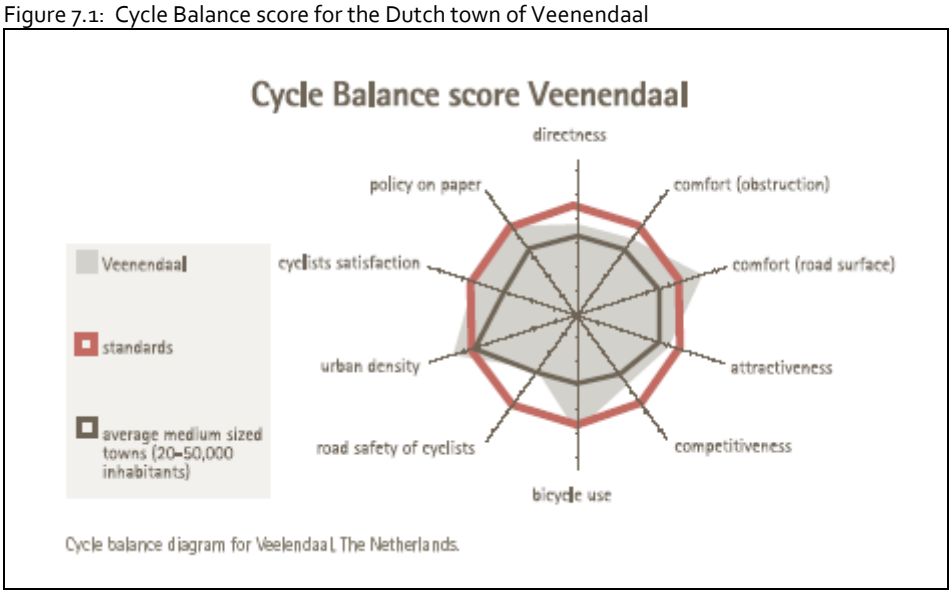
- Local Transport Plan and Cycling Strategy;
- Annual Progress Report;
- Council Commitment;
- Infrastructure;
- Cyclist Training;
- Marketing and Promotion;
- Stakeholder Engagement;

- Wider Engagement;
- Planning for Cycling; and
- Targets and Monitoring.

What many of these schemes have in common is that they have been designed as an evaluation methodology to fit the broadest range of situations, i.e. to monitor bicycle use in LGAs which often do not have a bicycle strategy in place.

In The Netherlands, where the development of networks and supporting programs is much more advanced, the national cycling organisation with substantial governmental support has developed its Cycle Balance scheme (Fietsersbond 2001) for providing an objective assessment of the physical network. The project involves riding a specially equipped bicycle fitted with sensors and recording equipment over the existing network and measuring the results.

Figure 7.1: Cycle Balance score for the Dutch town of Veenendaal



The UK methodology mentioned above, Local Authority Assessment Progress Review 2004 – Guidelines and Matrices for Assessment (ERCDT 2004) has the most relevance to the monitoring of the Bicycle Strategy implementation. It is recommended that this scheme be assessed and modified to suit the direct needs of Campbelltown.

7.2 Integration with Campbelltown Council Operations/Processes

It is a vitally important outcome of any formal planning process that projected bicycle infrastructure works and programs are integrated with other Council plans and procedures. Proper and detailed planning often results in substantial cost savings to the Council and its residents when cycle infrastructure works can be carried out as part of major new capital works construction, periodic maintenance and infrastructure upgrades.

implementation, evaluation and monitoring

To ensure the maximum integration of cycling provision across all operational departments of the Campbelltown City Council, it is recommended that:

i All bicycle routes and recommendations for physical infrastructure improvements be included in Council's geographic information system (GIS) to ensure all future works are be coordinated with other street improvements, including road resealing and maintenance works. Council are to coordinate with the RTA to ensure that this also applies to works undertaken within the LGA by the RTA;

ii Key council staff be progressively encouraged to attend RTA training courses "Designing for Bicycles and Pedestrians" for technical staff and "Bicycles and Pedestrians for Managers" as part of their normal training requirement;

iii Review Council's road and path based engineering standards to ensure that bicycle riders are always included and implicitly planned for. This is to ensure that roads and facilities which are potentially hazardous to bicycle riders are not inadvertently installed. This particularly applies to road-lane widths, intersection layouts, path clearances/widths, standard LATM designs, etc;

iv Inclusion of provision for cycling in all future council plans and developments;

v Council review its current planning policies to include provision for cycling requirement in development control plans (DCPs) and local environment plans (LEPs) for new and modified developments as detailed in the Planning Guidelines for Walking and Cycling (DOP 2004). Such provision will include but not be confined to the provision of parking and end of trip facilities, access to buildings and developments and the requirement for cycling to be included in site/place/workplace-based transport plans;

vi Develop internal process and procedures whereby all council departments can coordinate and support the development and delivery of their separate cycling programs and projects;

vii Consider establishing a Bicycle Committee or Advisory Group which would meet regularly to report and discuss cycling issues and provide representation at Traffic Committee meetings to discuss treatment of cyclists in new works. Even though this arrangement does not permit the bicycle representative a formal vote as Traffic Committees have set RTA procedures, it still allows an opportunity to progress cycling proposals and provides input to influence the final decision on other proposals;

viii Develop a Campbelltown-based hazard reporting scheme to ensure infrastructure defects are fixed promptly and efficiently in response to riders' needs. Whilst there are a range of options used by other Sydney Councils, the recommended system would be the "Report a Hazard" online system used by three local government areas south of Campbelltown – Wollondilly, Wingecarribee and Goulburn Mulwaree. More information can be found at www.reportahazard.com.au;

ix Implement a regular cycleway maintenance program to ensure that on-road and off-road bicycle facilities are kept in good repair;

x Continue the Council program of removal of old-style drainage grates; and

xi Develop a Council policy on provision for road works that includes cyclists regardless of the existence of marked bicycle routes (refer Section 10, NSW Bicycle Guidelines, RTA, 2003).

7.3 Statutory Planning Requirements for Bicycle Facilities

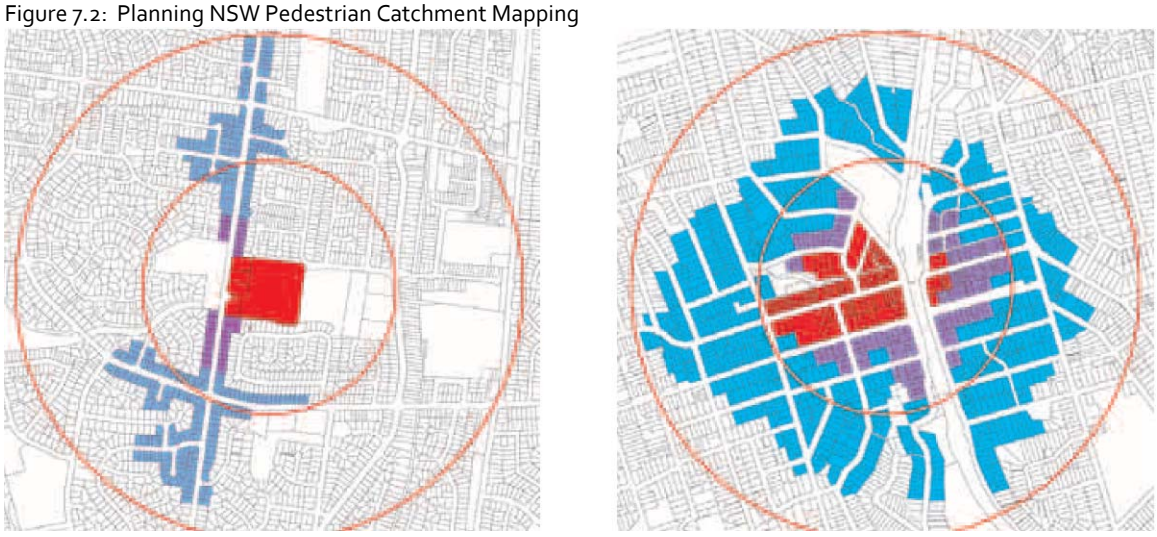
The provision of bicycle facilities as part of new development approvals can be regulated by a number of Council planning instruments, including:

- Local Environmental Plan;
- Various Development Control Plans;
- Section 94 Contributions Plan;
- "Standard" consent conditions;
- Campbelltown 2025; and
- Social Plan.

In addition to the above Council planning instruments, the Planning department within Council should ensure that future developments make allowance for through ways at the end of cul-de-sacs and easement allowances for tracks.

The NSW Planning Guidelines for Walking and Cycling (DoP 2004) provides useful information to assist in this process. For bicycle parking, it advocates a methodology based on the number of people using buildings - employees, customers, guests, students etc. There are strong planning guidelines for pedestrian and cycling catchment mapping, which help determine urban densities and thus the viability of businesses and community facilities within walking and cycling range (refer Figure 7.2).

Figure 7.2: Planning NSW Pedestrian Catchment Mapping



7.4 Bicycle Strategy Implementation

It is recommended that the physical infrastructure outlined in the Works Schedule be implemented over a five to ten year period based on available funding with periodic internal reviews. It is further recommended that MacBUG and/or a newly established Bicycle Advisory Committee undertake a key oversight role of the Strategy's implementation and report regularly to Council on progress.

8. Funding Opportunities

The recommended bicycle network plan proposes high quality infrastructure in line with contemporary community aspirations for bicycle use. As a large proportion of this network is planned to use separated bicycle facilities particularly on busy high-trafficked streets and roads, the cost of implementing the network is considerably higher than a mixed traffic network which uses mostly linemarking and signage.

Apart from Council's own resources there are a number of funding programs which may provide the additional financial support necessary for implementation of both the physical infrastructure and the related social plan to meet current and future community needs.

There are three websites that provide further detail:
http://www.cyclingresourcecentre.org.au/7/Funding
http://www.cyclingpromotion.com.au/content/view/28/51/
http://www.bicyclensw.org.au/content/advocacy-tools

Council

- Annual allocation for walking and cycling infrastructure; and
- Developer contributions.

RTA

The RTA's Bicycle Program allocates $5 million annually to NSW Council bicycle projects, which includes over $1 million for Sydney Metropolitan Councils. The dollar for dollar funding is to assist Councils with the development and implementation of their local bicycle networks. Detailed information on RTA funding for Sydney Council projects is available from the website www.rta.nsw.gov.au. Programs for potential funding include:

- Regional Road Block Grants;
- Black-spots and "black-areas";
- NSW Bike Week Funding;
- Co-Funding Program for bicycle infrastructure; and
- Bicycle User Support.

Premiers Department

- Premiers Council on Active Living.

Sport and Recreation

- Grants and financial assistance;
- Fundraising; and
- Sponsorship.

NSW Health

- Various scholarships, grants and funding.

Department for Infrastructure, Transport, Regional Development and Local Government (DITRDLG)

- AusLink National Projects;
- AusLink Roads to Recovery Program;
    - In November 2000, this program was introduced as a single intervention by the Commonwealth to address the specific problem of local roads reaching the end of their economic life, and their replacement being beyond the capacity of local government. Over four years from 1 July 2005, the Australian Government, will provide additional funding of $1.23 billion. This is in addition to its untied Financial Assistance Grants to councils for roads and other purposes. On 8 May 2007, the Australian Government announced that it will further extend the Roads to Recovery Program until June 2014. Funding for the program will also be increased from $307.5 million a year at present to $350 million a year from 2009-10. This program has been used by many Councils throughout Australia to fund bicycle infrastructure development and upgrades. It is administered by the Commonwealth Department of Transport and Regional Services;
- AusLink Black Spot Program;
    - The Black Spot program began in 1996-97. In recognition of its success the Australian Government has now extended the program until 30 June 2014 and Black Spot funding under Auslink 2 will be increased to $60 million annually from 2009-10 to 2013-14. That is an increase of 33 per cent on current program funding. The government will also provide $45 million for black spot projects in 2008-09 as part of its current Auslink program. This program has been used by many councils throughout Australia to fund bicycle infrastructure development and upgrades. It is administered by the Commonwealth Department of Transport and Regional Services;
- Strategic Regional Program;
- Regional Partnerships;
- Financial Assistance Grants;
- Infrastructure Australia fund (www.infrastructure.gov.au/department/infrastructureaustralia); and
- Sustainable Cities.

Department of Climate Change

- Various grants.

Environment & Water Resources

- Many new programs being developed.

IPWEA

- Road Safety Strategy (with MAA/RTA).

Business and Clubs

- Advertising (ped bridges, bus shelters);
- Clubs NSW – CDSE funding (www.clubsnsw.com.au/AM/ContentManagerNet/HTMLDisplay.aspx?ContentID=11935&Section=Community_Support); and
- Developers.

Cycling Promotion Fund

- Innovative projects to promote and encourage cycling.

Metropolitan Greenspace Program

The Metropolitan Greenspace Program (MGP) has provided over $15m to over 300 projects since 1990. It allocates over $1 million annually to Councils on a matching dollar basis and last year provided almost $1.5 million to Councils. The key objective of the program is to assist local government in the development and planning of regionally significant open space and to enable more effective use of these areas by the public. The program also aims to promote partnerships between State and Local Government.

DEC - Environmental Trust

The Environmental Trust is an independent statutory body established by the NSW government to support exceptional environmental projects that do not receive funds from the usual government sources. The Trust is empowered under the Environmental Trust Act 1998, and its main responsibility is to make and supervise the expenditure of grants. The Trust is administered by the Department of Environment and Climate Change.

Past and possible future Australian Government funding programs

Cycle Connect

The Australian Government has funded the installation of secure bicycle parking at public transport nodes. Cycle Connect, a $2.4 million initiative, was part of the Australian Government's 'Sustainable Cities' urban environment program*. Cycle Connect which ended in 2005-06, was a two-year grant initiative to provide secure parking, principally in the form of bike lockers, at suburban bus and train stations.

This project extended the 'catchment' areas of public transport networks by offering facilities for those who find it too far to walk to their local station but who are happy to cycle. Substituting short car trips with bicycle rides is one way of keeping fit and healthy, while reducing congestion, greenhouse gas and pollution at the same time. For each three kilometres that are cycled rather than driven, we save about a kilogram of greenhouse gas emissions.

Cycle Connect has helped to improve air quality so we have better places to live and work and help create sustainable cities. Over the duration of the project the number of secure bike lockers provided in major cities will have been boosted by approximately 3,000. It was targeted at those commuters who would use public transport regularly. Secure bike lockers and cages are a low-cost alternative for those who currently pay for their car to sit all day at their local bus or train station.

Healthy and Active Transport (HEAT) Program

This initiative of the Bicycle Sector (consisting of the bicycle industry and national and state cycling organisations) has put this proposal onto the national political agenda. The proposal calls on the Commonwealth Government to establish an infrastructure funding program of $50 million each year for four years for local government to build cycling and walking facilities. The program would fund significant, high-quality cycling and walking infrastructure projects, providing health, transport, environment and community benefits across urban, regional and rural areas.

9. References

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- Campbelltown City Council, 2001 Bicycle Plan;
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- Campbelltown City Council, 2007 Campbelltown Disability Action Plan (Draft);
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- Campbelltown City Council, Campbelltown Footpath Strategy;
- DoP 2004. *Planning Guidelines for Walking and Cycling*. NSW Department of Planning. Sydney, Australia. DIPNR 04_203;
- GHD, 2006 Campbelltown and Camden Councils Integrated Transport Strategy;
- Hurni A., 2006 Transport and Social Disadvantage in Western Sydney, A partnership research project;
- NSW Department of Planning, 2007 Draft South West Subregional Strategy;
- RDA, 2006 Campbelltown Structure Plan;
- RTA, 2003 NSW Bicycle Guidelines, Roads and Traffic Authority of NSW, Sydney;
- RTA, 2007 *How to Prepare a Bike Plan – An Easy 3 Stage Guide*, *Version 1*, Roads and Traffic Authority of NSW, Sydney;
- Campbelltown Business Centres Strategy; and
- 2007 Draft Residential Strategy Review.

Appendix A

BikePlan 2020 Press Release

Verity Firth
Minister for Environment
Minister for Climate Change

Eric Roozendaal
Minister for Roads
Minister for Commerce

M E D I A R E L E A S E

Mapping out Sydney's cycling future

30 August 2008

The Iemma Government is calling for community comment on a new NSW Bike Plan to promote and encourage cycling.

Minister for Roads Eric Roozendaal and Minister for Environment and Climate Change Verity Firth today said the Premier's Council on Active Living had been commissioned to start work on a new Bike Plan for NSW, with an in-depth study of current cycling patterns across the state being the first step.

"The NSW Government is committed to promoting cycling and improving cycling facilities as part of a balanced transport system for NSW," Mr Roozendaal said.

"The new Bike Plan will be the blueprint for the future of cycling in NSW.

"The Plan will map out the new events, new facilities and new programs needed to support the development of cycling as both a recreation activity and a commuting option.

"Since 1999, an average of 233km of cycleways have been built annually and today we have more than 4,100km of cycleways across the state, including 2,000km in Sydney."

Ms Firth said cycling had considerable environmental benefits.

"It makes sense to encourage more people to consider cycling as an environmentally-friendly and healthy means of transportation, particularly for short trips," Ms Firth said.

"Just one person who switches from driving to cycling to work during the week over a 10km trip each way saves around 1.3 tonnes of greenhouse gas emissions a year.

"And cycling doesn't just help reduce pollution, it also cuts down on traffic congestion and gets people fit.

"Last year, NSW residents purchased around 430,000 new bicycles, outstripping the number of new vehicles registered in the same period by 75,000.

"In Sydney alone, bicycle use has grown by 23 per cent on weekdays and 58 per cent on weekends since 2001."

Contacts: For Minister Roozendaal – Shehana Teixeira 0418 238 373
For Minister Firth – Kate Meagher 0437 001 027

Mr Roozendaal said the NSW BikePlan would build on current Government commitments.

“The Iemma Government is funding more than $47 million of bicycle initiatives this financial year,” Mr Roozendaal said.

“Most cycling takes place on local roads, which is why the Government is contributing funding towards 91 local bicycle projects, matched by funding from local councils.

“The Government is also committed to building off-road shared paths, where possible, when new roads are built.

“For example, last financial year the Government provided $14.8 million towards shared cycling/walking or on-road cycling facilities as part of major road construction projects including the construction of the Blacktown to Parklea T-Way and as part of the Great Western, Hume and Pacific Highway upgrades.”

Ms Firth said the NSW BikePlan would develop clear directions for future promotion and development of cycling across the state.

“Community consultation is a key component of developing this NSW BikePlan,” Ms Firth said.

“We want to hear from the community about ways in which people could be encouraged to take up cycling.

“The NSW BikePlan project team will be consulting widely with local councils, major employers, bicycle user groups, and other peak organisations with an interest in improving safe and sustainable transport options.”

Individuals are encouraged to put forward their ideas and views via email to Bike_Plan@rta.nsw.gov.au.

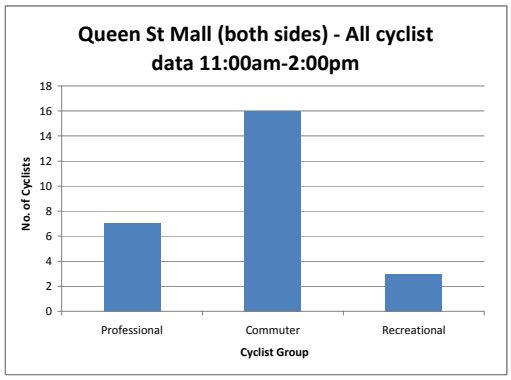
Appendix B

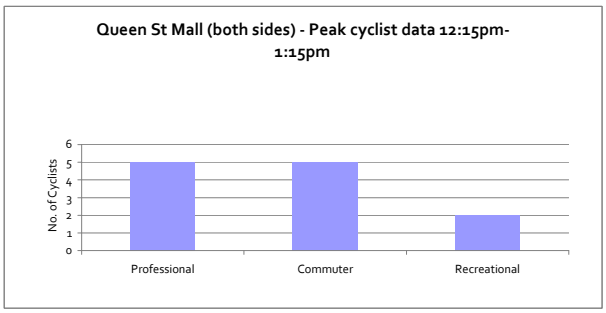
appendix b

Cycle Count Data

Time	Cyclist Group:			
	Professional	Commuter	Recreational	Total cyclists
11:00 - 11:15		2		2
11:15 - 11:30		1		1
11:30 - 11:45		1		1
11:45 - 12:00		1		1
12:00 - 12:15		3		3
12:15 - 12:30		1		1
12:30 - 12:45	2	1		3
12:45 - 13:00		1	2	3
13:00 - 13:15	3	2		5
13:15 - 13:30		1		1
13:30 - 13:45		1		1
13:45 - 14:00	2	1	1	4
Total	7	16	3	26

11:00 - 12:00	0	5	0	5
11:15 - 12:15	0	6	0	6
11:30 - 12:30	0	6	0	6
11:45 - 12:45	2	6	0	8
12:00 - 13:00	2	6	2	10
12:15 - 13:15	5	5	2	12
12:30 - 13:30	5	5	2	12
12:45 - 13:45	3	5	2	10
13:00 - 14:00	5	5	1	11





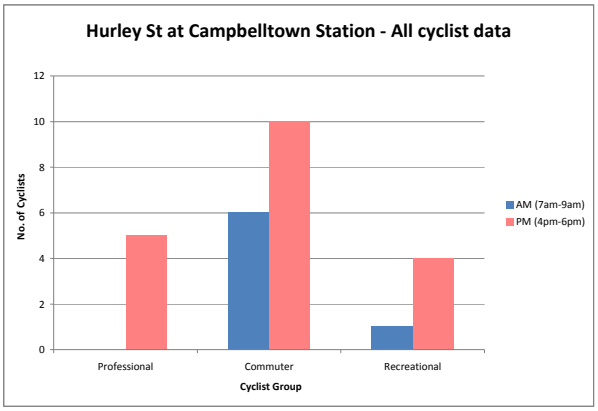
Time	Cyclist Group:		
	Professional	Commuter	Recreational
7:00 - 7:15			
7:15 - 7:30	1	2	
7:30 - 7:45			
7:45 - 8:00		1	
8:00 - 8:15			
8:15 - 8:30			
8:30 - 8:45			
8:45 - 9:00			
Total	1	3	0
11:00 - 11:15			
11:15 - 11:30			
11:30 - 11:45	1		
11:45 - 12:00			
12:00 - 12:15			
12:15 - 12:30	1		
12:30 - 12:45			
12:45 - 13:00			
13:00 - 13:15			
13:15 - 13:30			
13:30 - 13:45	1		
13:45 - 14:00			
Total	3	0	0

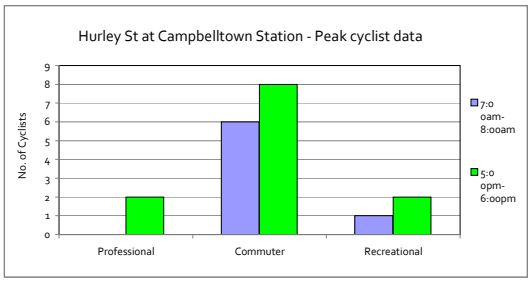
7:00 - 8:00	1	3	0
7:15 - 8:15	1	3	0
7:30 - 8:30	0	1	0
7:45 - 8:45	0	1	0
8:00 - 9:00	0	0	0

Time	Cyclist Group:			
	Professional	Commuter	Recreational	All cyclists
16:00 - 16:15	2	1		3
16:15 - 16:30		2		2
16:30 - 16:45		2		2
16:45 - 17:00	1	2		3
17:00 - 17:15		3		3
17:15 - 17:30		2		2
17:30 - 17:45				0
17:45 - 18:00				0
Total	3	12	0	15

16:00 - 17:00	3	7	0	10
16:15 - 17:15	1	9	0	10
16:30 - 17:30	1	9	0	10
16:45 - 17:45	1	7	0	8
17:00 - 18:00	0	5	0	5

Time	Cyclist Group:			
	Professional	Commuter	Recreational	All cyclists
7:00 - 7:15			1	1
7:15 - 7:30		1		1
7:30 - 7:45		3		3
7:45 - 8:00		2		2
8:00 - 8:15				0
8:15 - 8:30				0
8:30 - 8:45				0
8:45 - 9:00				0
Total	0	6	1	7
16:00 - 16:15		1	1	2
16:15 - 16:30	1	1	1	3
16:30 - 16:45				0
16:45 - 17:00	2			2
17:00 - 17:15		1		1
17:15 - 17:30	1		2	3
17:30 - 17:45	1	1		2
17:45 - 18:00		6		6
Total	5	10	4	19





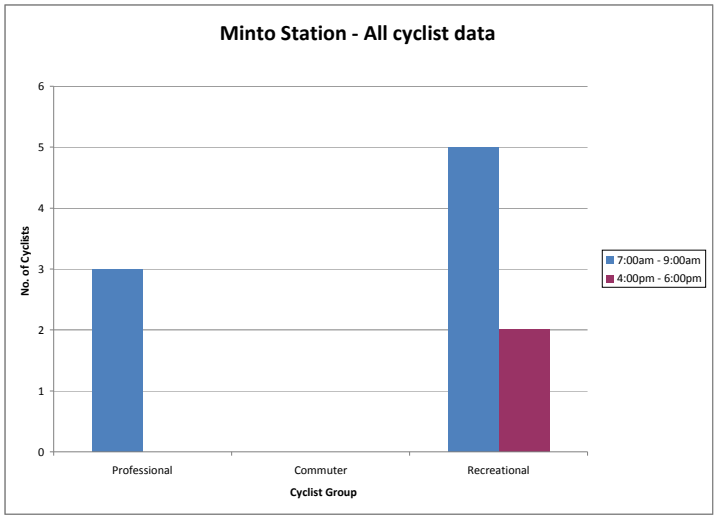
7:00 - 8:00	0	6	1	7
7:15 - 8:15	0	6	0	6
7:30 - 8:30	0	5	0	5
7:45 - 8:45	0	2	0	2
8:00 - 9:00	0	0	0	0
16:00 - 17:00	3	2	2	7
16:15 - 17:15	3	2	1	6
16:30 - 17:30	3	1	2	6
16:45 - 17:45	4	2	2	8
17:00 - 18:00	2	8	2	12

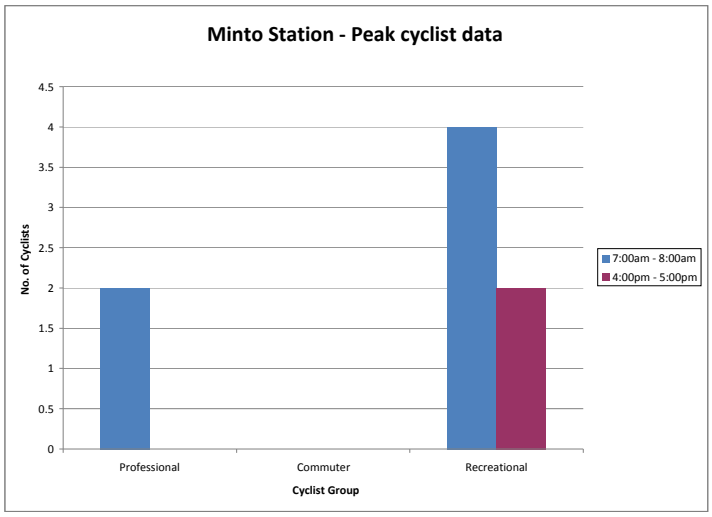
Time	Cyclist Group:			
	Professional	Commuter	Recreational	All cyclists
7:00 - 7:15				0
7:15 - 7:30	1			1
7:30 - 7:45	2			2
7:45 - 8:00				0
8:00 - 8:15	1			1
8:15 - 8:30				0
8:30 - 8:45				0
8:45 - 9:00				0
Total	4	0	0	4
16:00 - 16:15			1	1
16:15 - 16:30		1		1
16:30 - 16:45	1		1	2
16:45 - 17:00				0
17:00 - 17:15				0
17:15 - 17:30				0
17:30 - 17:45				0
17:45 - 18:00				0
Total	1	1	2	4

7:00 - 8:00	3	0	0	3
7:15 - 8:15	4	0	0	4
7:30 - 8:30	3	0	0	3
7:45 - 8:45	1	0	0	1
8:00 - 9:00	1	0	0	1
16:00 - 17:00	1	1	2	4
16:15 - 17:15	1	1	1	3
16:30 - 17:30	1	0	1	2
16:45 - 17:45	0	0	0	0
17:00 - 18:00	0	0	0	0

Time	Cyclist Group:			
	Professional	Commuter	Recreational	All cyclists
7:00 - 7:15				0
7:15 - 7:30			1	1
7:30 - 7:45	1		1	2
7:45 - 8:00	1		2	3
8:00 - 8:15				0
8:15 - 8:30			1	1
8:30 - 8:45	1			1
8:45 - 9:00				0
Total	3	0	5	8
16:00 - 16:15				0
16:15 - 16:30				0
16:30 - 16:45				0
16:45 - 17:00			2	2
17:00 - 17:15				0
17:15 - 17:30				0
17:30 - 17:45				0
17:45 - 18:00				0
Total	0	0	2	2

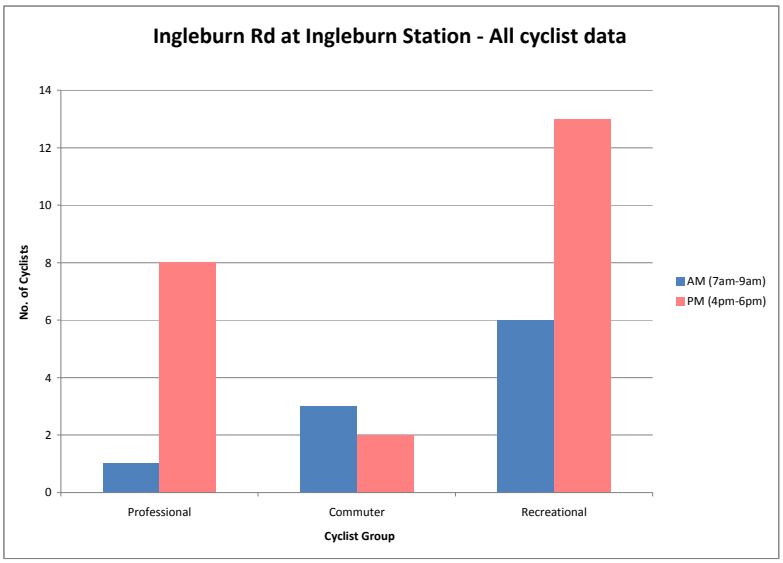
7:00 - 8:00	2	0	4	6
7:15 - 8:15	2	0	4	6
7:30 - 8:30	2	0	4	6
7:45 - 8:45	2	0	3	5
8:00 - 9:00	1	0	1	2
16:00 - 17:00	0	0	2	2
16:15 - 17:15	0	0	2	2
16:30 - 17:30	0	0	2	2
16:45 - 17:45	0	0	2	2
17:00 - 18:00	0	0	0	0

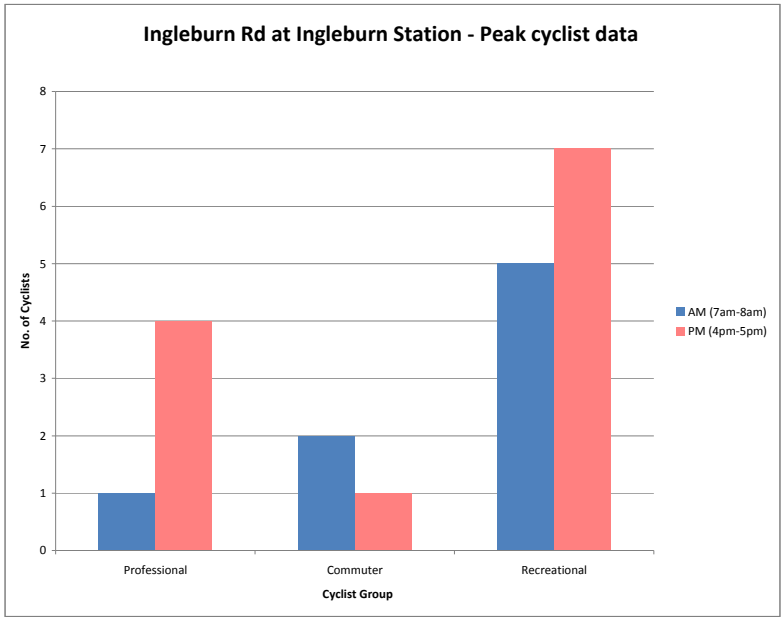




Time	Cyclist Group:			
	Professional	Commuter	Recreational	All cyclists
7:00 - 7:15				0
7:15 - 7:30				0
7:30 - 7:45	1		3	4
7:45 - 8:00		2	2	4
8:00 - 8:15				0
8:15 - 8:30				0
8:30 - 8:45		1	1	2
8:45 - 9:00				0
Total	1	3	6	10
16:00 - 16:15			4	4
16:15 - 16:30	2	1	1	4
16:30 - 16:45	2		2	4
16:45 - 17:00				0
17:00 - 17:15	1	1	2	4
17:15 - 17:30			1	1
17:30 - 17:45	1		2	3
17:45 - 18:00	2		1	3
Total	8	2	13	23

7:00 - 8:00	1	2	5	8
7:15 - 8:15	1	2	5	8
7:30 - 8:30	1	2	5	8
7:45 - 8:45	0	3	3	6
8:00 - 9:00	0	1	1	2
16:00 - 17:00	4	1	7	12
16:15 - 17:15	5	2	5	12
16:30 - 17:30	3	1	5	9
16:45 - 17:45	2	1	5	8
17:00 - 18:00	4	1	6	11





Time	Cyclist Group:		
	Professional	Commuter	Recreational
11:00 - 11:15			
11:15 - 11:30			
11:30 - 11:45			
11:45 - 12:00			
12:00 - 12:15			
12:15 - 12:30			
12:30 - 12:45			
12:45 - 13:00			
13:00 - 13:15			1
13:15 - 13:30			
13:30 - 13:45			
13:45 - 14:00			
Total	0	0	1

Time	Cyclist Group:		
	Professional	Commuter	Recreational
11:00 - 11:15			
11:15 - 11:30			
11:30 - 11:45			
11:45 - 12:00	1		2
12:00 - 12:15			
12:15 - 12:30			
12:30 - 12:45			
12:45 - 13:00		1	2
13:00 - 13:15			
13:15 - 13:30	1		2
13:30 - 13:45			
13:45 - 14:00	2		
Total	4	1	6

11:00 - 12:00	1	0	2
11:15 - 12:15	1	0	2
11:30 - 12:30	1	0	2
11:45 - 12:45	1	0	2
12:00 - 13:00	0	1	2
12:15 - 13:15	0	1	2
12:30 - 13:30	1	1	4
12:45 - 13:45	1	1	4
13:00 - 14:00	3	0	2

Appendix C

Cycling Questionnaire Summary

GTA Consultants

Campbelltown Community Survey

Our Ref: GS10800

Total number of respondants **196**

Q3 If you cycle, which of the following do you do most often?

5	Recreational	145	74%
6	Commuting	45	23%
7	Touring	27	14%
8	Cycle to keep fit and healthy	134	68%
9	Cycle to run errands locally	39	20%
		390	

Q5 Do you use existing cycleways in the Campbelltown area?

10	Yes	121	62%
11	No	74	38%
	No response	1	1%
		196	100%

Q6 Do the existing cycleways meet your needs?

12	Yes	23	12%
13	No	161	82%
	No response	12	6%
		196	100%

Q8 Are you Male or Female?

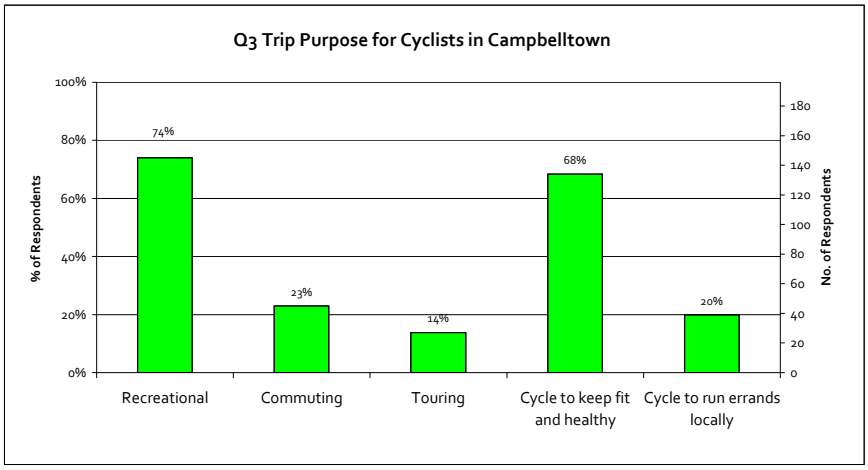
14	Male	123	63%
15	Female	73	37%
		196	100%

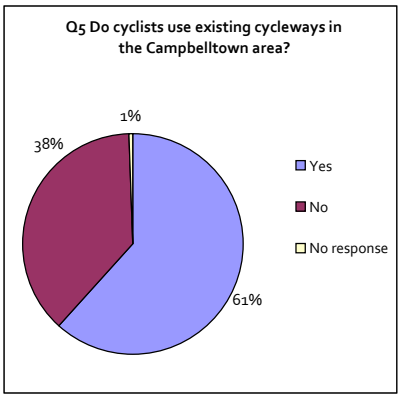
Q9 What is your postcode of residence?

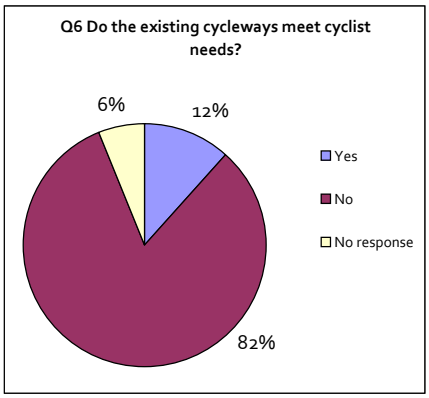
	2560	94	48%
	2566	27	14%
	2565	16	8%
	2564	10	5%
	2167	5	3%
	2558	3	2%
	2173	2	1%
	2559	1	1%
	2170	1	1%
	No response	37	19%
		196	100%

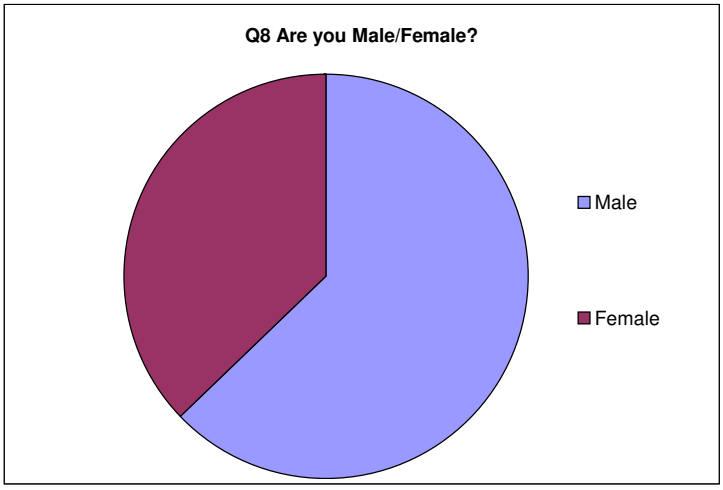
Q10 Which age group are you in?

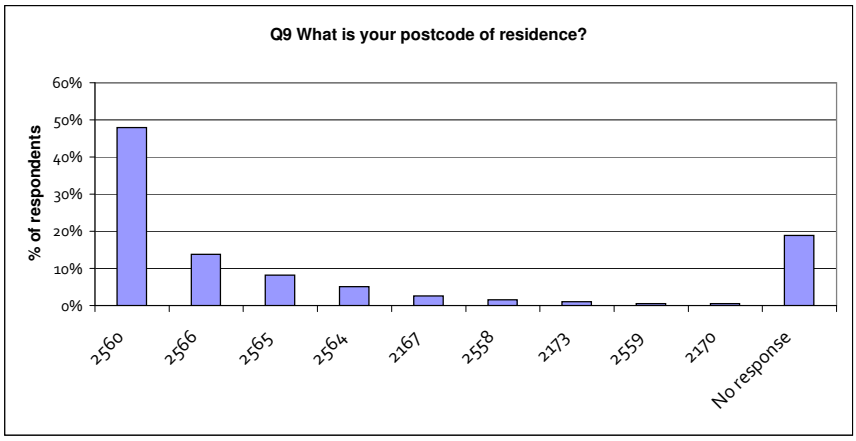
27	0 - 5 years	0	0%
28	6 - 12 years	4	2%
29	13 - 17 years	4	2%
30	18 - 30 years	31	16%
31	31 - 49 years	111	57%
32	50 - 60 years	34	17%
33	61 - 70 years	9	5%
34	70+ years	3	2%
		196	100%

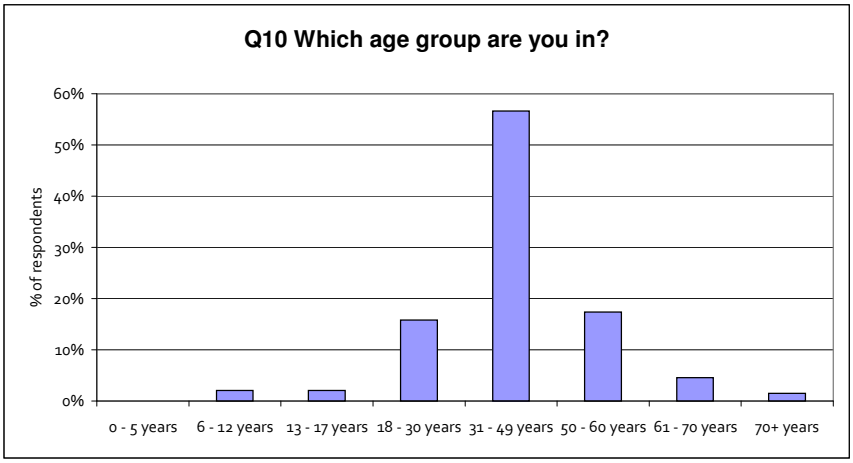

Q3 Trip Purpose for Cyclists in Campbelltown
% of Respondents
No. of Respondents
100%
80%
60%
40%
20%
0%
180
160
140
120
100
80
60
40
20
0
74%
23%
14%
68%
20%
Recreational
Commuting
Touring
Cycle to keep fit and healthy
Cycle to run errands locally


Q5 Do cyclists use existing cycleways in the Campbelltown area?
1%
38%
61%
Yes
No
No response


Q6 Do the existing cycleways meet cyclist needs?
6%
12%
82%
Yes
No
No response


Q8 Are you Male/Female?
Male
Female


Q9 What is your postcode of residence?
% of respondents
60%
50%
40%
30%
20%
10%
0%
2560
2566
2565
2564
2167
2558
2173
2559
2170
No response


Q10 Which age group are you in?
% of respondents
60%
50%
40%
30%
20%
10%
0%
0 - 5 years
6 - 12 years
13 - 17 years
18 - 30 years
31 - 49 years
50 - 60 years
61 - 70 years
70+ years

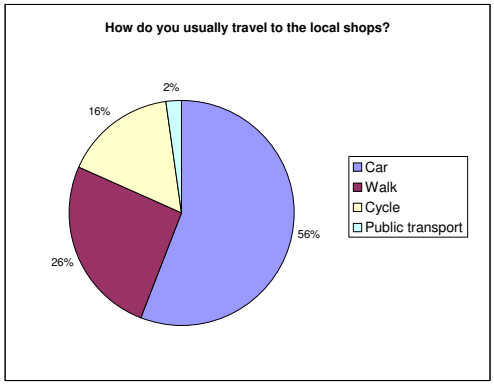
Q1 Summary

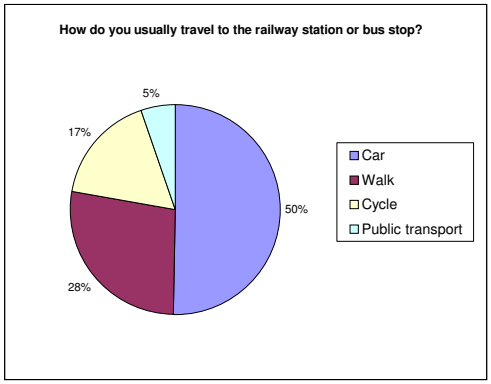
Local shops		%
Car	106	56%
Walk	49	26%
Cycle	31	16%
Public transport	4	2%
	190	

School		
Car	47	56%
Walk	17	20%
Cycle	12	14%
Public transport	8	10%
	84	

Railway Station/Bus Stop		
Car	75	50%
Walk	41	28%
Cycle	25	17%
Public transport	8	5%
	149	

Work		
Car	106	62%
Walk	7	4%
Cycle	33	19%
Public transport	26	15%
	172	





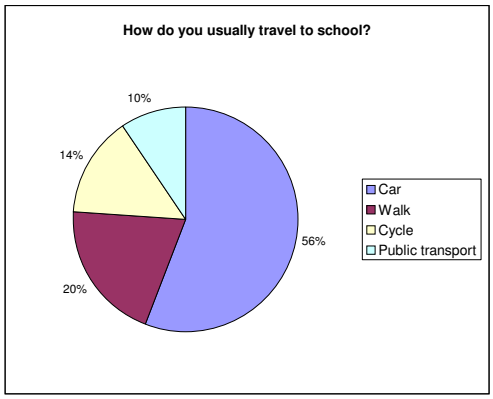
0 - 2km		%
Car	70	38%
Walk	83	46%
Cycle	29	16%
Public transport	0	0%
	182	**33%**

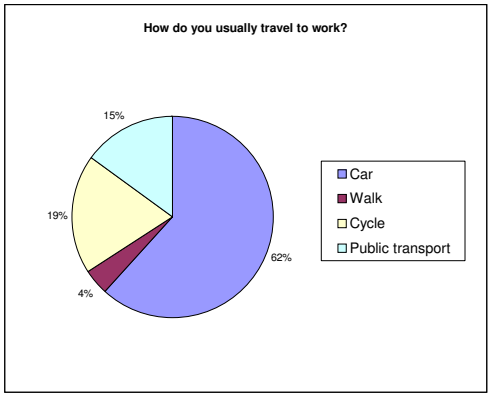
2 - 5km		
Car	98	65%
Walk	21	14%
Cycle	22	15%
Public transport	10	7%
	151	**26%**

5 - 10km		
Car	63	72%
Walk	1	1%
Cycle	21	24%
Public transport	3	3%
	88	**15%**

10 - 20km		
Car	41	69%
Walk	2	3%
Cycle	12	20%
Public transport	4	7%
	59	**10%**

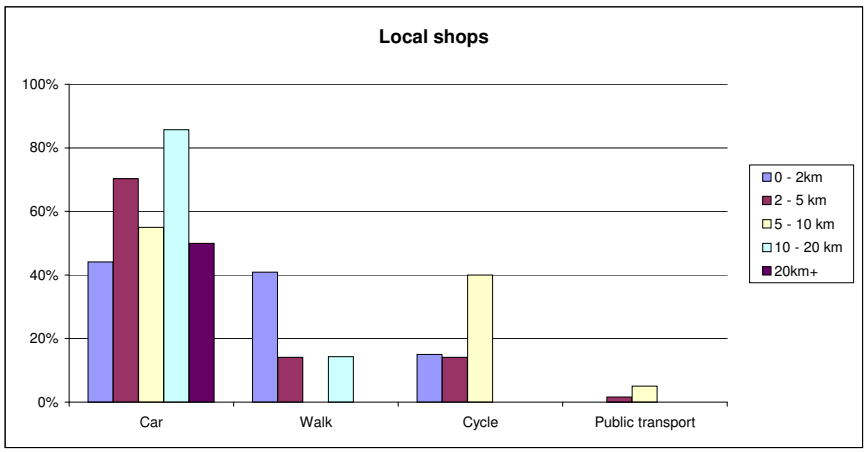
20km+		
Car	42	53%
Walk	0	0%
Cycle	15	19%
Public transport	22	28%
	79	**15%**

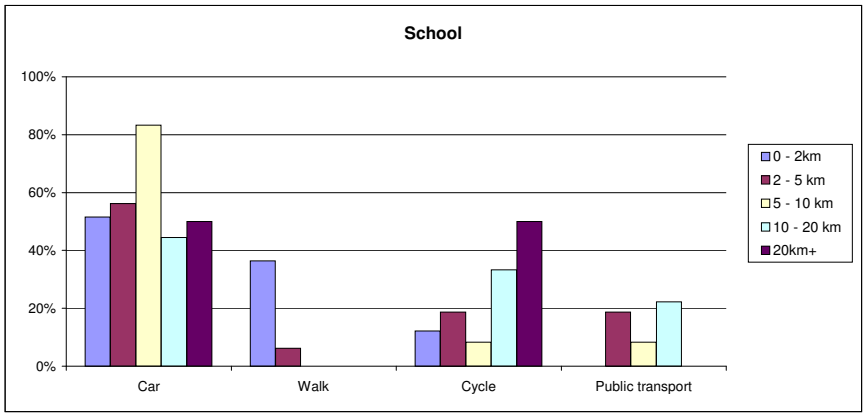


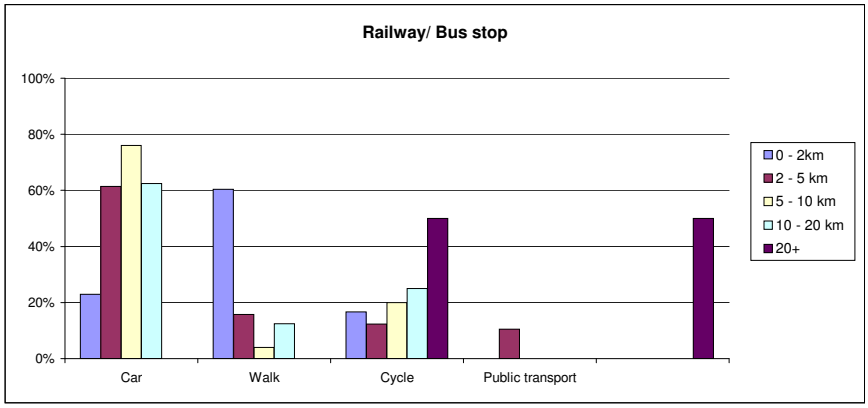


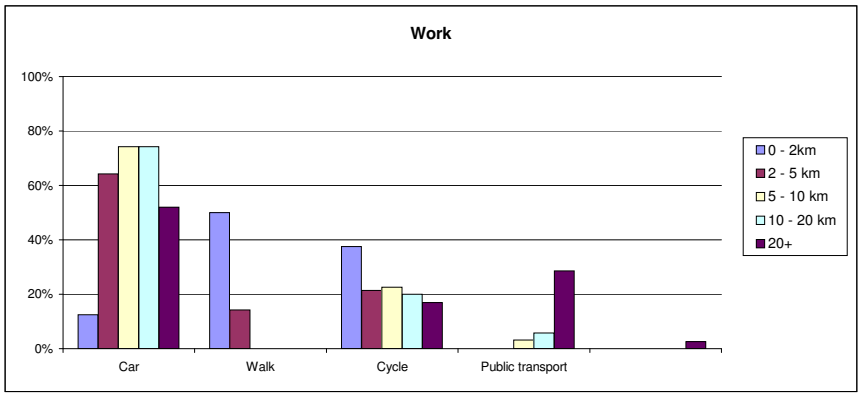
0 - 2km	169	33%
2 - 5km	134	26%
5 - 10km	79	15%
10 - 20km	53	10%
20km+	75	15%
	510	

All trips		
Car	314	56%
Walk	107	19%
Cycle	99	18%
Public transport	39	7%
	559	




School
100%
80%
60%
40%
20%
0%
Car
Walk
Cycle
Public transport
0 - 2km
2 - 5 km
5 - 10 km
10 - 20 km
20km+


Railway/ Bus stop
100%
80%
60%
40%
20%
0%
Car
Walk
Cycle
Public transport
0 - 2km
2 - 5 km
5 - 10 km
10 - 20 km
20+


Work
100%
80%
60%
40%
20%
0%
Car
Walk
Cycle
Public transport
0 - 2km
2 - 5 km
5 - 10 km
10 - 20 km
20+

Total responses 196

Q2 What would encourage you to cycle or cycle more often?	Total	Percentage
Off-road facilities	85	43%
Safe places to ride (incl for children)	82	42%
On-road lanes	50	26%
Bicycle/driver safety education	26	13%
Recreational facilities	24	12%
Parking facilities, especially at shops, etc.(bike lockers, showers)	17	9%
More/better cycleways in general	11	6%
Cycling promotions	5	3%
Less rubbish/glass in gutters	4	2%
Lighting	3	2%

Q4 What type of facilities would encourage you to cycle, or cycle more often?	Total	Percentage
Off-road facilities	96	49%
On-road lanes	89	45%
Parking facilities, especially at shops, etc.(bike lockers, showers)	50	26%
Safe places to ride (incl for children)	28	14%
Bicycle/driver safety education	11	6%
Less rubbish/glass in gutters	8	4%
Lighting	4	2%
Cycling promotions	4	2%

Q7 Do the existing facilities meet your needs? Why or why not?		
Need more cycle lanes/routes	61	31%
Unsafe cycle lanes	54	28%
Unconnected/ unaccessible cycle ways	42	21%
Obstructions in lanes/paths	20	10%
More off- road paths	12	6%
Paths/facilities to areas such as shops and station.	11	6%
Abuse by motorists	10	5%
Need cleaner cycle routes/lanes/paths	10	5%
Longer routes/paths to use for commuting	9	5%
Cycle routes not child friendly	7	4%
Poorly marked cycle ways or lack of signage/maps	6	3%
Wider paths	6	3%
Bike lanes for professional riders	5	3%
Crossing roads is dangerous	4	2%
Poor lighting	3	2%
Variety of cycle ways	2	1%
Paths/facilities to areas such as shops and station.	2	1%
On- road lanes are safe	2	1%
More cycle facilities	2	1%
Shared paths are safer	1	1%
Current good recreational paths	0	0%

Appendix D

Route Development Details and Cost Estimates

Bicycle Strategy for Campbelltown
Job No GS10800
Date Apr-09

GTAconsultants

Summary - Route Lengths (m)

Section Ref	Existing Length	Priority 1 Length	Priority 2 Length	Priority 3 Length	Total Length
Strategic Routes	15,900	25,710	4,100	40,590	**86,300**
Main Feeder Routes	12,970	7,000	14,385	8,300	**42,655**
GRAND TOTAL	**28,870**	**32,710**	**18,485**	**48,890**	**128,955**

Note. The existing length may include sections that require upgrading work, such as intersection treatments and treatment of pinch points. Most existing facilities require some upgrading, new linemarking, directional signage, pavement repairs, etc

Summary - Route Costs

Section Ref		Base Cost	Priority 1 Item Cost	Priority 2 Item Cost	Priority 3 Item Cost	Total Item Cost	*check sum*
Strategic Routes		$ 8,269,555	$ 2,443,050	$ 553,840	$ 9,157,210	$ 12,154,100	*$ 12,154,100*
Main Feeder Routes		$ 2,454,340	$ 277,540	$ 1,864,800	$ 1,409,880	$ 3,552,220	*$ 3,552,220*
GRAND TOTAL		**$ 10,723,895**	**$ 2,720,590**	**$ 2,418,640**	**$ 10,567,090**	**$ 15,706,320**	*$ 15,706,320*
	check sum	*$ 10,723,895*	*$ 2,720,590*	*$ 2,418,640*	*$ 10,567,090*	*$ 15,706,320*	

Summary - Route Costs per km

Section Ref	Priority 1 Length	Priority 2 Length	Priority 3 Length	Total Length
Strategic Routes	$ 95,000	$ 135,000	$ 226,000	$ 141,000
Main Feeder Routes	$ 40,000	$ 130,000	$ 170,000	$ 83,000
GRAND TOTAL	**$ 83,000**	**$ 131,000**	**$ 216,000**	**$ 122,000**

Notes	*compare with cost for regional bike routes in last worksheet - "North Shore Extract"*		
Other projects	*average*	*$*	*1,340,000*
	min	*$*	*340,000*
	max	*$*	*3,220,000*

Summary - Costs by Item Type

GTAconsultants

Reference	Description	Type of Works	Base Cost Per Item 2007	Unit	Priority 1	Priority 2	Priority 3	Total	*check sum*
GENERAL									
0	Existing facilities or works included in current budget allocations	EXISTING	$0		$0	$0	$0	$0	*$0*
1	Other jurisdictions	OTHER JURISDICTIONS	$0		$0	$0	$0	$0	*$0*
2	Strategic link for inclusion in future planning control	PLANNING	$0		$0	$0	$0	$0	*$0*
Subtotal - General					***$0***	***$0***	***$0***	***$0***	*$0*
CIVIL WORKS									*$0*
17	Civil - Bicycle Refuge / LATM / Traffic Facilities	CIVIL	$11,388	each	$320,210	$450,830	$33,710	$804,750	*$804,750*
16	Civil - Kerb Ramp	CIVIL	$595	each	$0	$880	$0	$880	*$880*
24	Civil - raised priority crossing	CIVIL	$21,666	each	$0	$0	$0	$0	*$0*
10	Civil - remove existing landscaping and replace	CIVIL	$20,000	each	$0	$0	$0	$0	*$0*
29	Civil - steel mesh protective fence	CIVIL	$63	m	$0	$0	$0	$0	*$0*
20	Parking - Bicycle Locker	CIVIL	$2,871	each	$0	$0	$0	$0	*$0*
7	Parking - Bike Parking U-rail	CIVIL	$949	each	$0	$0	$0	$0	*$0*
33	Parking - Bicycle Cage (shelter with rails)	CIVIL	$35,000	each	$0	$0	$0	$0	*$0*
32	Pavement - fibre glass planks	CIVIL	$1,025	m	$0	$0	$0	$0	*$0*
13	Pavement - Footpath - Bitumen (2.0m two-way) - LOW KEY	CIVIL	$289	m	$0	$0	$320,960	$320,960	*$320,960*
12	Pavement - Footpath - Concrete (2.5m, two-way)	CIVIL	$195	m	$0	$0	$6,132,750	$6,132,750	*$6,132,750*
14	Pavement - Footpath - Widen existing, Concrete (1.0m)	CIVIL	$78	m	$5,770	$43,290	$36,940	$86,000	*$86,000*
8	Pavement - Footpath reseal	CIVIL	$44	m	$0	$0	$0	$0	*$0*
21	Pavement - Green Pavement	CIVIL	$109	m	$0	$0	$0	$0	*$0*
15	Pavement - new car park - bitumen seal	CIVIL	$300	m2	$0	$0	$0	$0	*$0*
31	Pavement - sealed shoulder, 1.5m	CIVIL	$70	m	$1,273,110	$1,336,510	$3,582,590	$6,192,210	*$6,192,210*
23	Pavement - contra flow lane and mixed traffic	CIVIL	$119	m	$0	$0	$0	$0	*$0*
9	Road Safety Audit	CIVIL	$5,000	each	$0	$0	$0	$0	*$0*
26	Signals - Bike Lamps at Signals per pair	CIVIL	$1,898	pair	$5,050	$0	$5,040	$10,090	*$10,090*
27	Signals - Pedestrian Signals	CIVIL	$113,879	each	$0	$0	$0	$0	*$0*
28	Signals - Traffic Signals	CIVIL	$227,757	each	$0	$0	$0	$0	*$0*
37	Roundabout treatment B - kerb adjustments and linemarking on approaches and through intersection, logos and signage	CIVIL	$25,268	each	$187,000	$74,800	$33,610	$295,410	*$295,410*
38	Roundabout treatment C - divert onto existing/modified footpaths, kerbs ramps, logos and signage	CIVIL	$4,872	each	$54,280	$28,840	$0	$83,120	*$83,120*
39	Roundabout treatment D - kerb adjustments and linemarking on one approach and through intersection, logos and signage on other approach	CIVIL	$12,634	each	$18,700	$37,400	$56,100	$112,200	*$112,200*
Subtotal - Civil Works					***$1,864,120***	***$1,972,550***	***$10,201,700***	***$14,038,370***	*$14,038,370*
STRUCTURES									*$0*
34	Structure - Bus Shelter	CIVIL	$9,465	each	$0	$0	$0	$0	*$0*
11	Structure - Cut and cover tunnel	CIVIL	$218,309	each	$0	$0	$0	$0	*$0*
19	Structure - Retaining wall	CIVIL	$316	m	$0	$0	$0	$0	*$0*
22	Structure - Solar Street Lighting	CIVIL	$127	m	$0	$0	$0	$0	*$0*
Subtotal - Structures					***$0***	***$0***	***$0***	***$0***	*$0*
SIGNS AND MARKINGS									*$0*
18	Signs & Markings - Bicycle Logo	LINE	$101	each	$0	$0	$0	$0	*$0*
30	Signs & Markings - Linemarking	LINE	$5	m	$0	$0	$0	$0	*$0*
4	Signs & Markings - Edgeline, Laneline, Bike Logos every 100m, signs at 200m - on road, both sides	LINE	$26	m	$747,880	$399,960	$249,320	$1,397,160	*$1,397,160*
3	Signs & Markings - Centreline, Bike & Ped Logos each way every 100m, signs at 200m - off road	LINE	$11	m	$0	$0	$0	$0	*$0*
25	Signs & Markings - low key intersection improvements	LINE	$777	each	$52,310	$3,100	$5,160	$60,570	*$60,570*
35	Signs & Markings - low key shared path, regulatory signs and logos at 200m	SIGN	$215	m	$0	$0	$0	$0	*$0*
5	Signs & Markings - Directional Signs	SIGN	$407	each	$0	$0	$0	$0	*$0*
6	Signs & Markings - Regulatory, Warning, Advisory Signs	SIGN	$257	each	$0	$0	$0	$0	*$0*
36	Roundabout treatment A - linemarking adjustments on approaches and through intersection, logos and signage	LINE	$2,492	each	$56,280	$43,030	$10,310	$109,620	*$109,620*
Subtotal - Signs and Markings					***$856,470***	***$446,090***	***$264,790***	***$1,567,350***	*$1,567,350*
Total					**$2,720,590**	**$2,418,640**	**$10,466,490**	**$15,605,720**	*$15,605,720*

Bicycle Strategy for Campbelltown

Job No GS10800
Date Apr-09

Route	Section	Description	Total Distance (m)	Priority 1 Item Cost
Strategic Routes				
Campbelltown Road/Moore Oxley Bypass/Appin Road	Moore Oxley Bypass - Campbelltown Road/Raby Rd intersection	On-road bicycle lanes, kerb works and shoulder widening, delineation	5,625	$ 210,000
	Campbelltown Rd (Jackson Park) to St Andrews Road	Shoulder works and delineation	3,000	$ 510,000
Copperfield Drive to Kellicar Road (Appin Road Alternative Route)	Copperfield Drive - Woodhouse Drive - Marsden Park - Kellicar Road	Treatments to remove pinch points, intersection treatments, delineation	1,150	$ 370,000
Menangle Road to Campbelltown Road via Glenfield Road	Rudd Road - Pembroke Road - Minto Road - Collins Promenade - Fields Road - Harold Street - Canterbury Road	On-road bicycle lanes, intersection treatments (roundabouts and signals), delineation	13,625	$ 1,160,000
Narellan Road to Airds	Narellan Road - The Parkway - St Johns Road - Briar Road	Shoulder widening, intersection treatments, treatment of pinch points, delineation	2,310	$ 200,000
Total - Strategic Routes			**25,710**	**$ 2,450,000**
Main Feeder Routes				
Ben Lomond Road	Campbelltown Rd to Airds Rd	Intersection treatments	500	$ 28,000
Raby Road	Thunderbolt Drive to Campbelltown Rd off-ramp (west of M5)	Intersection treatments, on-road shoulder lanes	2,200	$ 82,000
Broughton Street/Georges River Road	Hurley St to Junction Rd	On-road shoulder lanes, intersection treatments	3,000	$ 112,000
Gilchrist Drive	Therry Rd to Narellan Rd	Bicycle shoulder lanes, intersection treatments	1,300	$ 56,000
Total - Main Feeder Routes			**7,000**	**$ 278,000**
GRAND TOTAL			**32,710**	**$ 2,728,000**
			32,710	*$ 2,720,590*
			ok	check

Bicycle Strategy for Campbelltown

Job No GS10800
Date Apr-09

Route	Section	Description	Priority	Total Distance (m)	Priority 1 Item Cost	Priority 2 Item Cost	Priority 3 Item Cost	Total Item Cost
Strategic Routes								
Campbelltown Road/Moore Oxley Bypass/Appin Road	Appin Road - Moore Oxley Bypass	On-road bicycle lanes, kerb works and shoulder widening	2	1,900	$ -	$ 469,990	$ -	$ 469,990
	Moore Oxley Bypass - Campbelltown Road/Raby Rd intersection	On-road bicycle lanes, kerb works and shoulder widening, delineation	1	5,625	$ 205,790	$ -	$ -	$ 205,790
	Raby Rd to Stranraer Drive	Existing off-road shared path (north side of carriageway)	EXISTING	400	$ -	$ -	$ -	$ -
	Campbelltown Rd (Jackson Park) to St Andrews Road	Shoulder works and delineation	1	3,000	$ 514,110	$ -	$ -	$ 514,110
	St Andrews Road to Glenfield Road/Liverpool LGA	Shoulder works, intersection treatments, delineation	3	8,840	$ -	$ -	$ 1,376,380	$ 1,376,380
	In the vicinity of future Ingleburn Gardens estate access	Existing bicycle shoulder lanes	EXISTING	300	$ -	$ -	$ -	$ -
Copperfield Drive to Kellicar Road (Appin Road Alternative Route)	Copperfield Drive - Woodhouse Drive - Marsden Park - Kellicar Road	Treatments to remove pinch points, intersection treatments, delineation	1	1,150	$ 369,180	$ -	$ -	$ 369,180
	Marsden Park	Existing off-road shared path	EXISTING	900	$ -	$ -	$ -	$ -
Menangle Road to Campbelltown Road via Glenfield Road	Menangle Road - Tindall Street - Kellicar Road - Hurley Street - Queen Street	Shoulder widening, intersection treatments, delineation	3	13,950	$ -	$ 83,850	$ 2,008,830	$ 2,092,680
	Rudd Road - Pembroke Road - Minto Road - Collins Promenade - Fields Road - Harold Street - Canterbury Road	On-road bicycle lanes, intersection treatments (roundabouts and signals), delineation	1	13,625	$ 1,156,780	$ -	$ -	$ 1,156,780
Off-Road Creek and Canal Route	Smiths Creek Bypass, Bow Bowing and Bunbury Curran Creek drainage reserves	Off-road shared path	3	20,000	$ -	$ -	$ 5,772,000	$ 5,772,000
M5 Freeway	On-road lanes along M5 shoulders	Existing shoulder lanes	EXISTING	14,300	$ -	$ -	$ -	$ -
Narellan Road to Airds	Narellan Road - The Parkway - St Johns Road - Briar Road	Shoulder widening, intersection treatments, treatment of pinch points, delineation	1	2,310	$ 197,190	$ -	$ -	$ 197,190
Total - Strategic Routes				**86,300**	**$ 2,443,050**	**$ 553,840**	**$ 9,157,210**	**$ 12,154,100**
Main Feeder Routes								
Cumberland Road	Minto Rd/Collins Parade to Macquarie Rd	Treatment of pinch points, shoulder widening, intersection treatments, delineation	2	3,680	$ -	$ 414,740	$ -	$ 414,740
Macquarie Road	Cumberland Rd to Fields Road	Delineation, intersection treatments	2	150	$ -	$ 19,560	$ -	$ 19,560
Oxford Road	Ingleburn Rd to Cumberland Rd	Shared zone through shopping area between Ingleburn Rd and Cumberland Rd	EXISTING	300	$ -	$ -	$ -	$ -
	Cumberland Rd to Bensley Rd	Delineation, intersection treatments	3	980	$ -	$ -	$ 33,560	$ 33,560
Ben Lomond Road	Campbelltown Rd to Airds Rd	Intersection treatments	1	500	$ 27,640	$ -	$ -	$ 27,640
	Airds Rd to Pembroke Rd	Use of existing footpath/s as shared use, intersection treatments	EXISTING	950	$ -	$ -	$ -	$ -
	Pembroke Rd to Hansens Rd	Delineation, off-road path on north side of carriageway, shoulder widening	3	2,050	$ -	$ -	$ 481,160	$ 481,160
St Andrews Road	Camden LGA boundary to Spitfire Drive	Shoulder widening	3	2,900	$ -	$ -	$ 598,130	$ 598,130
	Spitfire Drive to Campbelltown Rd	Intersection treatments, footpath widening at overpass	2	1,625	$ -	$ 297,620	$ -	$ 297,620
Raby Road	Camden LGA boundary to Thunderbolt Drive	Shoulder widening	3	1,300	$ -	$ -	$ 44,520	$ 44,520

Bicycle Strategy for Campbelltown

Job No GS10800
Date Apr-09

Route	Section	Description	Priority	Total Distance (m)	Priority 1 Item Cost	Priority 2 Item Cost	Priority 3 Item Cost	Total Item Cost
	Thunderbolt Drive to Campbelltown Rd off-ramp (west of M5)	Intersection treatments, on-road shoulder lanes	1	2,200	$ 81,760	$ -	$ -	$ 81,760
Badgally Road	Eagle Vale Drive to Farrow Rd/Watsford Rd	Intersection treatments including kerb works, off-road shared path to link with existing path, mixed traffic treatment	3	1,070	$ -	$ -	$ 252,510	$ 252,510
		Bicycle shoulder lanes	EXISTING	900	$ -	$ -	$ -	$ -
		Off-road shared path	EXISTING	500	$ -	$ -	$ -	$ -
Broughton Street/Georges River Road	Hurley St to Junction Rd	On-road shoulder lanes, intersection treatments	1	3,000	$ 112,270	$ -	$ -	$ 112,270
Englorie Park Drive	Cleopatra Dr to Gilchrist Dr	Existing bicycle shoulder lanes and intersection treatments	EXISTING	2,600	$ -	$ -	$ -	$ -
Gilchrist Drive	Englorie Park Dr to Therry Rd	Bicycle shoulder lanes	EXISTING	270	$ -	$ -	$ -	$ -
	Therry Rd to Narellan Rd	Bicycle shoulder lanes, intersection treatments	1	1,300	$ 55,870	$ -	$ -	$ 55,870
Eagle Vale Drive	Badgally Rd to Raby Rd	Shoulder widening, off-road link, intersection treatment	2	2,400	$ -	$ 499,190	$ -	$ 499,190
Epping Forest Drive	Eagle Vale Drive to Raby Rd	Mixed traffic treatment, treatment of pinch points, intersection treatments	2	2,500	$ -	$ 223,760	$ -	$ 223,760
Thunderbolt Drive/Spitfire Drive	Raby Rd to St Andrews Rd	Mixed traffic treatment, treatment of pinch points	2	1,600	$ -	$ 105,360	$ -	$ 105,360
St Johns Road/Waminda Avenue/Macquarie Avenue/Angle Road/O'Sullivan Road	Briar Rd to Rudd Rd	Intersection treatments, treatment of pinch points, delineation	2	390	$ -	$ 71,450	$ -	$ 71,450
		Existing bicycle shoulder lanes	EXISTING	4,300	$ -	$ -	$ -	$ -
Rose Payten Drive	Campbelltown Rd to Leumeah Rd	Existing off-road shared path (south side of carriageway)	EXISTING	850	$ -	$ -	$ -	$ -
Smiths Creek Bypass	Pembroke Rd to Leumeah Rd	Shoulder widening and delineation	2	380	$ -	$ 78,380	$ -	$ 78,380
Leumeah Road	Smiths Creek Bypass to Junction Rd	Intersection treatments, bicycle shoulder lanes	2	850	$ -	$ 39,040	$ -	$ 39,040
Junction Road	Georges River Rd to Leumeah Rd	Intersection treatments, off-road/service road treatment, treatment of pinch points	2	810	$ -	$ 115,700	$ -	$ 115,700
		Existing bicycle shoulder lanes	EXISTING	2,300	$ -	$ -	$ -	$ -
Total - Main Feeder Routes				**42,655**	**$ 277,540**	**$ 1,864,800**	**$ 1,409,880**	**$ 3,552,220**
Grand Total				**128,955**	**$ 2,720,590**	**$ 2,418,640**	**$ 10,567,090**	**$ 15,706,320**
				128,955	*$ 2,720,590*	*$ 2,418,640*	*$ 10,567,090*	*$ 15,706,320*
				ok	ok	ok	ok	ok

Bicycle Strategy for Campbelltown

Job No GS10800
Date Apr-09

GTAconsultants

Section Ref	Works Ref	Route Name	Route Description	Item	Priority	Works Type	Standard Cost Ref	Total Distance (m)	On-Road Distance (m)	Multiplier*	Base Cost	Contingencies	Maintenance and Repairs	Minor Utility Adjustments	Landscaping & Urban Design	Work Under Traffic	Design Fees	Total Mark Up	Priority 1 Item Cost	Priority 2 Item Cost	Priority 3 Item Cost	Total Item Cost
Strategic Routes																						
1		Campbelltown Road/Moore Oxley Bypass/Appin Road	Appin Road - Moore Oxley Bypass - Campbelltown Road/Raby Rd intersection	Appin Rd/Copperfield Dr roundabout treatment - kerb works and lanes through intersection	2	CIVIL	37			1	$25,268	30%	5%	10%	0%	0%	3%	48%	$0	$37,400	$0	$37,400
1				Repair shoulders between Copperfield and north of cutting (both directions)	2	CIVIL	31	1,100	1,100	2,200	$153,295	30%	5%	10%	0%	0%	3%	48%	$0	$226,880	$0	$226,880
1				Repair shoulder on southbound carriageway between Fitzgibbon and Woodland	2	CIVIL	31	800	800	1,600	$111,487	30%	5%	10%	0%	0%	3%	48%	$0	$165,000	$0	$165,000
1				Woodland Rd signals - northbound (logos and signage), southbound (some kerb works required)	2	CIVIL	39			1	$12,634	30%	5%	10%	0%	0%	3%	48%	$0	$18,700	$0	$18,700
1				St Johns Rd signals - northbound (logos and signage), southbound (some kerb works required)	2	CIVIL	39			1	$12,634	30%	5%	10%	0%	0%	3%	48%	$0	$18,700	$0	$18,700
1				Therry Rd signals - northbound (realignment of bike lane between the left and through lanes, continue lane through the intersection), southbound (logos/signage)	2	LINE	36			1	$2,492	10%	20%	0%	0%	0%	3%	33%	$0	$3,310	$0	$3,310
1				Narellan Rd signals - extend lanes on approaches and through intersection	1	LINE	36			1	$2,492	10%	20%	0%	0%	0%	3%	33%	$3,310	$0	$0	$3,310
1				Moore Oxley Bypass (between Narellan Rd and Bradbury Ave) - New shoulders on southbound carriageway, shoulders existing on northbound carriageway	1	CIVIL	31	550	550	550	$38,324	30%	5%	10%	0%	0%	3%	48%	$56,720	$0	$0	$56,720
1				Moore Oxley Bypass (between Narellan Rd and Bradbury Ave) - linemarking and signage	1	LINE	4	550	550	550	$14,163	10%	20%	0%	0%	0%	3%	33%	$18,840	$0	$0	$18,840
1				Bradbury Ave to Chamberlain St - on-road lanes in both directions	1	LINE	4	1,300	1,300	1,300	$33,477	10%	20%	0%	0%	0%	3%	33%	$44,520	$0	$0	$44,520
1				Chamberlain St to Queen St - logos/signage on existing northbound lane, new on-road lane on southbound	1	LINE	4	800	800	800	$20,601	10%	20%	0%	0%	0%	3%	33%	$27,400	$0	$0	$27,400
1				Northbound at Queen St signals - delineation across left turn slip lane	1	LINE	25			1	$777	10%	20%	0%	0%	0%	3%	33%	$1,030	$0	$0	$1,030
1				Blaxland Rd signals - northbound on-road lane treatment, southbound shoulder logos/signage	1	LINE	36			1	$2,492	10%	20%	0%	0%	0%	3%	33%	$3,310	$0	$0	$3,310
1				Continuation of lane at left turn slip lane into car dealer (between Blaxland and Harbord)	1	LINE	25	100	100	1	$777	10%	20%	0%	0%	0%	3%	33%	$1,030	$0	$0	$1,030
1				Harbord St/Plough Inn Rd intersection - linemarking and kerb works	1	CIVIL	25			2	$1,554	30%	5%	10%	0%	0%	3%	48%	$2,300	$0	$0	$2,300
1				Collaroy Rd treatment (northbound shoulder lane)	1	LINE	25	75	75	1	$777	10%	20%	0%	0%	0%	3%	33%	$1,030	$0	$0	$1,030
1				Rose Payten Dr treatment (southbound shoulder lane)	1	LINE	25	75	75	1	$777	10%	20%	0%	0%	0%	3%	33%	$1,030	$0	$0	$1,030
1				Signs and markings on Campbelltown Rd (northbound) to Raby Rd roundabout	1	LINE	4	1,900	1,900	950	$24,464	10%	20%	0%	0%	0%	3%	33%	$32,540	$0	$0	$32,540
1				Raby Road roundabout treatment	1	LINE	36			1	$2,492	10%	20%	0%	0%	0%	3%	33%	$3,310	$0	$0	$3,310
1				Raby Road to Stranraer Dr - existing off-road path on north side	EXISTING	EXISTING	-	400		400	$0	10%	0%	0%	0%	0%	3%	13%	$0	$0	$0	$0
1				Raby Road from Stranraer Dr to Campbelltown Rd - on-road lanes	1	LINE	4	275	275	275	$7,082	10%	20%	0%	0%	0%	3%	33%	$9,420	$0	$0	$9,420
1			Campbelltown Rd between Raby Rd and Liverpool LGA	Jackson Park to Raby Rd - shoulder works	1	CIVIL	31	900	900	1,800	$125,423	30%	5%	10%	0%	0%	3%	48%	$185,630	$0	$0	$185,630
1				Jackson Park to Raby Rd - delineation/signage	1	CIVIL	4	900	900	900	$23,176	30%	5%	10%	0%	0%	3%	48%	$34,300	$0	$0	$34,300
1				Raby Rd roundabout - lanes through roundabout (some kerb works and signage/markings)	1	CIVIL	37			1	$25,268	30%	5%	10%	0%	0%	3%	48%	$37,400	$0	$0	$37,400
1				Raby Rd to St Andrews Rd - some shoulder works and delineation	1	CIVIL	31	1,200	1,200	2,400	$167,231	30%	5%	10%	0%	0%	3%	48%	$247,500	$0	$0	$247,500
1				Signals at Ben Lomond Rd (new southbound lane through intersection, logos on northbound)	1	LINE	25			2	$1,554	10%	20%	0%	0%	0%	3%	33%	$2,070	$0	$0	$2,070
1				Roundabout at St Andrews Rd - divert lanes onto paths	1	CIVIL	38			1	$4,872	30%	5%	10%	0%	0%	3%	48%	$7,210	$0	$0	$7,210
1				St Andrews Rd to Williamson Rd/Hume Hwy on-ramp - formalise shoulders with linemarking and signage	3	LINE	4	1,500	1,500	1,500	$38,627	10%	20%	0%	0%	0%	3%	33%	$0	$0	$51,370	$51,370
1				Central Park Drive intersection - adjust linemarking and continue cycle lane on southbound direction	3	LINE	25	270	270	1	$777	10%	20%	0%	0%	0%	3%	33%	$0	$0	$1,030	$1,030
1				Roundabout at Williamson Rd/Hume Hwy on-ramp	3	LINE	36			1	$2,492	10%	20%	0%	0%	0%	3%	33%	$0	$0	$3,310	$3,310
1				Williamson Rd to north of M5 overpass (Sweeneys driveway) - northbound off-road path behind guardrail	3	CIVIL	13	750	750	750	$216,868	30%	5%	10%	0%	0%	3%	48%	$0	$0	$320,960	$320,960
1				M5 overpass to Denham Court Rd - widening, shoulder works/drainage, delineation	3	CIVIL	31	2,000	2,000	4,000	$278,718	30%	5%	10%	0%	0%	3%	48%	$0	$0	$412,500	$412,500
1				Denham Court Rd roundabout	3	LINE	37			1	$25,268	10%	20%	0%	0%	0%	3%	33%	$0	$0	$33,610	$33,610
1				Denham Court Rd to Macdonald Rd - southbound shoulder works	3	CIVIL	31	3,000	3,000	3,000	$209,039	30%	5%	10%	0%	0%	3%	48%	$0	$0	$309,380	$309,380
1				Macdonald Rd signalised intersection - delineation through intersection	3	LINE	25			1	$777	10%	20%	0%	0%	0%	3%	33%	$0	$0	$1,030	$1,030
				Macdonald Rd to Off-road path south of M5 overpass - shoulder	3	CIVIL	31	1,000	1,000	2,000	$139,359	30%	5%	10%	0%	0%	3%	48%	$0	$0	$206,250	$206,250
				In the vicinity of future Ingleburn Gardens estate access - existing shoulder lanes and linemarking	EXISTING	EXISTING	-	300	300	300	$0	10%	0%	0%	0%	0%	3%	13%	$0	$0	$0	$0
1				Off-road path south of M5 overpass - widen by 1.0m	3	CIVIL	14	320		320	$24,960	30%	5%	10%	0%	0%	3%	48%	$0	$0	$36,940	$36,940
								20,065			$1,752,463								$719,900	$469,990	$1,376,380	$2,566,270
1		Copperfield Drive to Kellicar Road (Appin Road Alternative Route)	Copperfield Drive - Woodhouse Drive - Marsden Park - Kellicar Road	Copperfield Drive School zone entry - pinch points at 3 locations	1	CIVIL	17			3	$34,164	30%	5%	10%	0%	0%	3%	48%	$50,560	$0	$0	$50,560
1				Copperfield Dr speed hump/zebra crossing pinch points at 5 locations	1	CIVIL	17			5	$56,939	30%	5%	10%	0%	0%	3%	48%	$84,270	$0	$0	$84,270
1				Pinch points on both Copperfield Rd approaches at Julius Rd roundabout	1	CIVIL	37			1	$25,268	30%	5%	10%	0%	0%	3%	48%	$37,400	$0	$0	$37,400
1				Dickens Rd chicane intersection treatment - pinch point on both Copperfield Rd approaches	1	CIVIL	17			1	$11,388	30%	5%	10%	0%	0%	3%	48%	$16,850	$0	$0	$16,850
1				Harthouse Rd chicane intersection treatment - pinch point on both Copperfield Rd approaches	1	CIVIL	17			1	$11,388	30%	5%	10%	0%	0%	3%	48%	$16,850	$0	$0	$16,850
1				Woodhouse Dr roundabout - pinch points on both approaches	1	CIVIL	37			1	$25,268	30%	5%	10%	0%	0%	3%	48%	$37,400	$0	$0	$37,400
1				Woodhouse Dr on-road lanes	1	LINE	4	1,100	1,100	1,100	$28,326	10%	20%	0%	0%	0%	3%	33%	$37,670	$0	$0	$37,670
1				Woodhouse Drive pinch points - school zone entries x 2, crossings x 2	1	CIVIL	17			4	$45,551	30%	5%	10%	0%	0%	3%	48%	$67,420	$0	$0	$67,420

Bicycle Strategy for Campbelltown
Job No GS10800
Date Apr-09

GTAconsultants

Section Ref	Works Ref	Route Name	Route Description	Item	Priority	Works Type	Standard Cost Ref	Total Distance (m)	On-Road Distance (m)	Multiplier*	Base Cost	Contingencies	Maintenance and Repairs	Minor Utility Adjustments	Landscaping & Urban Design	Work Under Traffic	Design Fees	Total Mark Up	Priority 1 Item Cost	Priority 2 Item Cost	Priority 3 Item Cost	Total Item Cost
				Woodhouse Drive Roundabout intersections x 2	1	LINE	36			2	$4,984	10%	20%	0%	0%	0%	3%	33%	$6,630	$0	$0	$6,630
1				Woodhouse Drive/Therry Road roundabout	1	LINE	36			1	$2,492	10%	20%	0%	0%	0%	3%	33%	$3,310	$0	$0	$3,310
1				Off-road shared path through Marsden Park	EXISTING	EXISTING	-	900		-	$0	10%	0%	0%	0%	0%	3%	13%	$0	$0	$0	$0
1				Shared path link along south side of Kellicar Rd - widen existing footpath	1	CIVIL	14	50		50	$3,900	30%	5%	10%	0%	0%	3%	48%	$5,770	$0	$0	$5,770
				Kellicar Rd/Narrellan Rd signalised intersection - bicycle crossing lamps on the south and east intersection crossings	1	LINE	26			2	$3,796	10%	20%	0%	0%	0%	3%	33%	$5,050	$0	$0	$5,050
								2,050			$253,463								$369,180	$0	$0	$369,180
1		Menangle Road to Campbelltown Road via Glenfield Road	Menangle Road - Tindall Street - Kellicar Road - Hurley Street - Queen Street - Rudd Road - Pembroke Road - Minto Road - Collins Promenade - Fields Road - Harold Street - Canterbury Road - Glenfield Road	Menangle Rd - shoulder works, delineation, signage	3	CIVIL	31	8,700	8,700	17,400	$1,212,424	30%	5%	10%	0%	0%	3%	48%	$0	$0	$1,794,390	$1,794,390
1				Menangle Rd/Tindall St T-intersection - lanes through intersection	3	LINE	25			1	$777	10%	20%	0%	0%	0%	3%	33%	$0	$0	$1,030	$1,030
1				Tindall St - on-road lanes	3	LINE	4	200	200	200	$5,150	10%	20%	0%	0%	0%	3%	33%	$0	$0	$6,850	$6,850
1				Tindall St/Kellicar Rd signalised intersection - bicycle crossing lamps	3	LINE	26			1	$1,898	10%	20%	0%	0%	0%	3%	33%	$0	$0	$2,520	$2,520
1				Kellicar Rd on-road lanes	3	LINE	4	350	350	350	$9,013	10%	20%	0%	0%	0%	3%	33%	$0	$0	$11,990	$11,990
1				Kellicar Rd/Narrellan Rd signalised intersection - new bicycle/pedestrian crossing on west leg	3	LINE	-			-	$20,000	10%	20%	0%	0%	0%	3%	33%	$0	$0	$26,600	$26,600
1				Kellicar Rd/Hurley Street signalised intersection - bicycle crossing lamps on north leg	3	LINE	26			1	$1,898	10%	20%	0%	0%	0%	3%	33%	$0	$0	$2,520	$2,520
1				Hurley St - on-road lanes	3	LINE	4	1,500	1,500	1,500	$38,627	10%	20%	0%	0%	0%	3%	33%	$0	$0	$51,370	$51,370
				Shopping centre entrance roundabout treatment - lanes through intersection	3	LINE	36			1	$2,492	10%	20%	0%	0%	0%	3%	33%	$0	$0	$3,310	$3,310
1				Queen Street - on-road lanes	3	LINE	4	1,000	1,000	1,000	$25,751	10%	20%	0%	0%	0%	3%	33%	$0	$0	$34,250	$34,250
1				Queen St/Campbelltown Rd intersection - lanes through intersection	1	LINE	36			1	$2,492	10%	20%	0%	0%	0%	3%	33%	$3,310	$0	$0	$3,310
1				Rudd Rd - on-road lanes between Campbelltown Rd and O'Sullivan Rd	1	LINE	4	700	700	700	$18,026	10%	20%	0%	0%	0%	3%	33%	$23,970	$0	$0	$23,970
1				Rudd Rd/O'Sullivan Rd/Pembroke Rd single lane roundabout - divert to footpath	1	CIVIL	38			1	$4,872	30%	5%	10%	0%	0%	3%	48%	$7,210	$0	$0	$7,210
1				Pembroke Rd on-road lanes - update logos and delineation, some shoulder widening works required	1	CIVIL	31	4,500	4,500	4,500	$313,558	30%	5%	10%	0%	0%	3%	48%	$464,070	$0	$0	$464,070
1				Pembroke Rd/Old Leumeah Rd signals - lanes through intersection	1	LINE	36			1	$2,492	10%	20%	0%	0%	0%	3%	33%	$3,310	$0	$0	$3,310
1				Rose Payten Dr signalised intersection	EXISTING	EXISTING	-			-	$0	10%	0%	0%	0%	0%	3%	13%	$0	$0	$0	$0
1				Westmoreland Rd signalised intersection - lanes through intersection	1	LINE	25			2	$1,554	10%	20%	0%	0%	0%	3%	33%	$2,070	$0	$0	$2,070
1				Stonny Batter Rd roundabout - lanes through intersection	1	LINE	36			1	$2,492	10%	20%	0%	0%	0%	3%	33%	$3,310	$0	$0	$3,310
1				Ben Lomond Rd roundabout - divert to footpath	1		38			1	$4,872	10%	0%	0%	0%	0%	3%	13%	$5,510	$0	$0	$5,510
1				Redfern Rd signalised intersection - lanes through intersection	1	LINE	36			1	$2,492	10%	20%	0%	0%	0%	3%	33%	$3,310	$0	$0	$3,310
1				Minto Rd T-intersection - linemarking with some median island adjustments	1	CIVIL	25			1	$3,777	30%	5%	10%	0%	0%	3%	48%	$5,590	$0	$0	$5,590
1				Minto Rd on-road lanes - update logos and delineation, some shoulder widening works required	1	CIVIL	31	725	725	725	$50,518	30%	5%	10%	0%	0%	3%	48%	$74,770	$0	$0	$74,770
1				Minto Rd/Cumberland Rd/Collins Prom roundabout - kerb adjustments, lanes through intersection	1	CIVIL	37			1	$25,268	30%	5%	10%	0%	0%	3%	48%	$37,400	$0	$0	$37,400
1				Collins Prom on-road lanes - delineation upgrades, minor shoulder works	1	CIVIL	4	2,000	2,000	2,000	$51,503	30%	5%	10%	0%	0%	3%	48%	$76,220	$0	$0	$76,220
1				Eagleview Rd T-intersection - adjust linemarking	1	LINE	25			1	$777	10%	20%	0%	0%	0%	3%	33%	$1,030	$0	$0	$1,030
1				Collins Prom/Chester Rd roundabout - divert cyclists to footpath	1		38			1	$4,872	10%	0%	0%	0%	0%	3%	13%	$5,510	$0	$0	$5,510
1				Collins Prom/Oxford Rd/Harold St signalised intersection - linemarking and minor widening	1	CIVIL	31	100	100	200	$13,936	30%	5%	10%	0%	0%	3%	48%	$20,630	$0	$0	$20,630
1				Linemarking and signage for sealed shoulder lanes between Oxford and Henderson Rd	1	LINE	4	900	900	900	$23,176	10%	20%	0%	0%	0%	3%	33%	$30,820	$0	$0	$30,820
1				Harold St/Henderson Rd roundabout - kerb works to widen, lanes through intersection	1	CIVIL	31	100	100	200	$13,936	30%	5%	10%	0%	0%	3%	48%	$20,630	$0	$0	$20,630
1				Henderson to Evelyn - widening and delineation	1	CIVIL	31	600	600	1,200	$83,615	30%	5%	10%	0%	0%	3%	48%	$123,750	$0	$0	$123,750
1				Harold St/Evelyn Rd roundabout - widening on northbound approach, linemarking adjustments on southbound approach	1	CIVIL	39			1	$12,634	30%	5%	10%	0%	0%	3%	48%	$18,700	$0	$0	$18,700
1				Harold St between Evelyn St and Victoria Rd (two lanes in each direction) - wide kerbside lane with delineation/logos	1	LINE	4	1,800	1,800	1,800	$46,352	10%	20%	0%	0%	0%	3%	33%	$61,650	$0	$0	$61,650
1				Harold St/Saywell Rd two-lane roundabout - divert to footpath	1	CIVIL	38			1	$4,872	30%	5%	10%	0%	0%	3%	48%	$7,210	$0	$0	$7,210
1				Harold St/Parliament Rd signalised intersection - approach treatments	1	LINE	25			2	$1,554	10%	20%	0%	0%	0%	3%	33%	$2,070	$0	$0	$2,070
1				Harold St/Rosewood Dr signalised intersection - approach treatments	1	LINE	25			2	$1,554	10%	20%	0%	0%	0%	3%	33%	$2,070	$0	$0	$2,070
1				Complex intersection at Glenquarie - redesign, kerb works and linemarking	1	CIVIL	17			2	$22,776	30%	5%	10%	0%	0%	3%	48%	$33,710	$0	$0	$33,710
1				Harold St/Victoria Rd/Canterbury Rd roundabout - island modifications, linemarking adjustments	1	CIVIL	37			1	$25,268	30%	5%	10%	0%	0%	3%	48%	$37,400	$0	$0	$37,400
1				Canterbury Road between Victoria Rd and Harrow Rd (one lane in each direction) - adjust linemarking to include cycle lane	1	LINE	4	700	700	700	$18,026	10%	20%	0%	0%	0%	3%	33%	$23,970	$0	$0	$23,970
1				Canterbury Rd/Harrow Rd signalised intersection - approach treatments	1	LINE	25			2	$1,554	10%	20%	0%	0%	0%	3%	33%	$2,070	$0	$0	$2,070
1				Canterbury Road between Harrow Rd and Cambridge Avenue (two lanes in each direction) - wide kerbside lane with delineation/logos	1	LINE	4	1,500	1,500	1,500	$38,627	10%	20%	0%	0%	0%	3%	33%	$51,370	$0	$0	$51,370
1				Canterbury Rd/Belmont Rd signalised intersection - approach treatments	1	LINE	25			2	$1,554	10%	20%	0%	0%	0%	3%	33%	$2,070	$0	$0	$2,070
1				Canterbury Rd/Trafalgar St signalised intersection - approach treatments	1	LINE	25			2	$1,554	10%	20%	0%	0%	0%	3%	33%	$2,070	$0	$0	$2,070

Bicycle Strategy for Campbelltown
Job No GS10800
Date Apr-09

GTAconsultants

Section Ref	Works Ref	Route Name	Route Description	Item	Priority	Works Type	Standard Cost Ref	Total Distance (m)	On-Road Distance (m)	Multiplier*	Base Cost	Contingencies	Maintenance and Repairs	Minor Utility Adjustments	Landscaping & Urban Design	Work Under Traffic	Design Fees	Total Mark Up	Priority 1 Item Cost	Priority 2 Item Cost	Priority 3 Item Cost	Total Item Cost
1				Railway overpass link between Canterbury Road and Glenfield Road - requires off-road link (current bridge too narrow) - needs further investigation	3	PLANNING	2			-	$0	10%	0%	0%	0%	0%	3%	13%	$0	$0	$0	$0
1				Glenfield Rd - bicycle shoulder lanes	2	CIVIL	4	2,200	2,200	2,200	$56,653	30%	5%	10%	0%	0%	3%	48%	$0	$83,850	$0	$83,850
1				Glenfield Rd intersection - bicycle/pedestrian crossing of Campbelltown Road	3	CIVIL	27a			1	$50,000	30%	5%	10%	0%	0%	3%	48%	$0	$0	$74,000	$74,000
								27,575			$2,225,231								$1,156,780	$83,850	$2,008,830	$3,249,460
1		Off-Road Creek and Canal Route	Smiths Creek Bypass, Bow Bowing and Bunbury Curran Creek drainage reserves	Off-road path	3	CIVIL	12	20,000		20,000	$3,900,000	30%	5%	10%	0%	0%	3%	48%	$0	$0	$5,772,000	$5,772,000
								20,000			$3,900,000								$0	$0	$5,772,000	$5,772,000
1		M5 Freeway	On-road lanes along M5 shoulders	Existing	EXISTING	EXISTING	-	14,300	14,300	-	$0	10%	0%	0%	0%	0%	3%	13%	$0	$0	$0	$0
								14,300			$0								$0	$0	$0	$0
1		Narellan Road to Airds	Narellan Road - The Parkway - St Johns Road - Briar Road	Narellan Rd eastbound - widening along M5 on-ramp slip lane	1	CIVIL	31	400	400	400	$27,872	30%	5%	10%	0%	0%	3%	48%	$41,250	$0	$0	$41,250
1				Narellan Rd eastbound - widening from off-ramp crossing and adjacent to off-ramp slip lane	1	CIVIL	31	120	120	120	$8,362	30%	5%	10%	0%	0%	3%	48%	$12,380	$0	$0	$12,380
1				Narellan Rd westbound - signage, logos and linemarking for treatment at M5 on-ramps and off-ramps at both sides of the interchange	1	LINE	25			2	$1,554	10%	20%	0%	0%	0%	3%	33%	$2,070	$0	$0	$2,070
1				Narellan Rd westbound - continue bike lane through signalised intersection at TAFE/Uni	1	LINE	4	130	130	65	$1,674	10%	20%	0%	0%	0%	3%	33%	$2,230	$0	$0	$2,230
1				Narellan Rd eastbound - widen intersection approach lane and formalise intersection departure at Blaxland Rd signals	1	LINE	4	150	150	75	$1,931	10%	20%	0%	0%	0%	3%	33%	$2,570	$0	$0	$2,570
1				Narellan Rd westbound - widen approach and departure lanes at Gilchrist Dr signals	1	LINE	4	150	150	75	$1,931	10%	20%	0%	0%	0%	3%	33%	$2,570	$0	$0	$2,570
1				Narellan Rd lanes on both sides over rail bridge are narrow - re-linemark (ultimately need to provide off-road separated link along this alignment)	1	LINE	4	350	350	350	$9,013	10%	20%	0%	0%	0%	3%	33%	$11,990	$0	$0	$11,990
1				Narellan Rd between Kellicar Rd and Appin Rd - widen shoulders to address narrow lanes and edge drop off	1	CIVIL	31	250	250	250	$17,420	30%	5%	10%	0%	0%	3%	48%	$25,780	$0	$0	$25,780
1				The Parkway - eastbound departure from Appin Rd - logos and linemarking	1	LINE	25	140	140	1	$777	10%	20%	0%	0%	0%	3%	33%	$1,030	$0	$0	$1,030
1				The Parkway and Narellan Rd - Appin Rd approach linemarking adjustments and departure treatment linking to on-road lane across vehicle slip lane	1	LINE	4	120	120	120	$3,090	10%	20%	0%	0%	0%	3%	33%	$4,110	$0	$0	$4,110
1				Treatment across Lawn Ave T-intersection	1	LINE	25			1	$777	10%	20%	0%	0%	0%	3%	33%	$1,030	$0	$0	$1,030
1				Treatment across Olympic Circuit T-intersection	1	LINE	25			1	$777	10%	20%	0%	0%	0%	3%	33%	$1,030	$0	$0	$1,030
1				The Parkway/Campbellfield Ave roundabout - mixed traffic treatment	1	LINE	36			1	$2,492	10%	20%	0%	0%	0%	3%	33%	$3,310	$0	$0	$3,310
1				The Parkway - treatment across Bradbury Shopping Centre driveway	1	LINE	25			1	$777	10%	20%	0%	0%	0%	3%	33%	$1,030	$0	$0	$1,030
1				Traffic calming/School zone entry treatment - cyclist pinch point in both directions	1	CIVIL	17			1	$11,388	30%	5%	10%	0%	0%	3%	48%	$16,850	$0	$0	$16,850
1				The Parkway - Marked zebra crossing at Bradbury Primary School - cyclist pinch point in both directions	1	CIVIL	17			1	$11,388	30%	5%	10%	0%	0%	3%	48%	$16,850	$0	$0	$16,850
1				The Parkway/Airdsley Lane roundabout - mixed traffic treatment	1	LINE	36			1	$2,492	10%	20%	0%	0%	0%	3%	33%	$3,310	$0	$0	$3,310
1				Treatment across Greenoaks Ave T-intersection	1	LINE	25			1	$777	10%	20%	0%	0%	0%	3%	33%	$1,030	$0	$0	$1,030
1				The Parkway/St Johns Rd roundabout - mixed traffic treatment	1	LINE	36			1	$2,492	10%	20%	0%	0%	0%	3%	33%	$3,310	$0	$0	$3,310
1				Treatment across Jacaranda Ave T-intersection	1	LINE	25			1	$777	10%	20%	0%	0%	0%	3%	33%	$1,030	$0	$0	$1,030
1				Treatment across Athel Tree Cres T-intersection	1	LINE	25			1	$777	10%	20%	0%	0%	0%	3%	33%	$1,030	$0	$0	$1,030
1				Treatment across Bangalla Ave T-intersection	1	LINE	25			1	$777	10%	20%	0%	0%	0%	3%	33%	$1,030	$0	$0	$1,030
1				Treatment across Akuna Ave T-intersection	1	LINE	25			1	$777	10%	20%	0%	0%	0%	3%	33%	$1,030	$0	$0	$1,030
1				Treatment across Macleay St T-intersection	1	LINE	25			1	$777	10%	20%	0%	0%	0%	3%	33%	$1,030	$0	$0	$1,030
1				St Johns Rd/Briar Rd roundabout - mixed traffic treatment	1	LINE	36			1	$2,492	10%	20%	0%	0%	0%	3%	33%	$3,310	$0	$0	$3,310
1				Treatment across Kullaroo Ave T-intersection	1	LINE	25			1	$777	10%	20%	0%	0%	0%	3%	33%	$1,030	$0	$0	$1,030
1				Briar Rd between St Johns Rd and Riverside Dr - on-road lanes · linemarking and logos	1	LINE	4	500	500	500	$12,876	10%	20%	0%	0%	0%	3%	33%	$17,120	$0	$0	$17,120
1				Treatment at intersection of Briar Rd and Riverside Dr - modify T-intersection	1	CIVIL	17			1	$11,388	30%	5%	10%	0%	0%	3%	48%	$16,850	$0	$0	$16,850
								2,310			$138,398								$197,190	$0	$0	$197,190
Total - Strategic Routes								**86,300**			**$8,269,555**								**$2,443,050**	**$553,840**	**$9,157,210**	**$12,154,100**
Main Feeder Routes											$0	10%	0%	0%	0%	0%	3%	13%	$0	$0	$0	$0
2		Cumberland Road	Minto Rd/Collins Parade to Macquarie Rd	Cumberland Rd at Minto Rd/Collins Prom roundabout	2	LINE	36			1	$2,492	10%	20%	0%	0%	0%	3%	33%	$0	$3,310	$0	$3,310
2				Between Minto Rd and Sackville St - shoulder lanes - repair and widen shoulders and linemarking and logos	2	CIVIL	31	650	650	1,300	$90,583	30%	5%	10%	0%	0%	3%	48%	$0	$134,060	$0	$134,060
2				Sackville St signalised intersection - approach and departure linemarking in both directions	2	LINE	4	180	180	180	$4,635	10%	20%	0%	0%	0%	3%	33%	$0	$6,160	$0	$6,160
2				Signage and logos between Sackville St and Macquarie Rd	2	LINE	4	2,800	2,800	2,800	$72,104	10%	20%	0%	0%	0%	3%	33%	$0	$95,900	$0	$95,900
2				Traffic calming pinch points x 3 between Sackville St and Chester Rd	2	CIVIL	17			3	$34,164	30%	5%	10%	0%	0%	3%	48%	$0	$50,560	$0	$50,560
2				Cumberland Rd/Chester Rd 2-lane roundabout - direct cyclists onto footpath	2	CIVIL	38			1	$4,872	30%	5%	10%	0%	0%	3%	48%	$0	$7,210	$0	$7,210
2				Traffic calming pinch points x 4 between Chester Rd and Oxford Rd	2	CIVIL	17			4	$45,551	30%	5%	10%	0%	0%	3%	48%	$0	$67,420	$0	$67,420
2				Oxford Rd signalised intersection - approach and departure linemarking in both directions	2	LINE	25			2	$1,554	10%	20%	0%	0%	0%	3%	33%	$0	$2,070	$0	$2,070
2				Pinch point across Cambridge St T-intersection	2	CIVIL	17			0	$2,847	30%	5%	10%	0%	0%	3%	48%	$0	$4,210	$0	$4,210
2				Pinch point across Koala Ave T-intersection	2	CIVIL	17			0	$2,847	30%	5%	10%	0%	0%	3%	48%	$0	$4,210	$0	$4,210
2				Pinch point across Flint St T-intersection	2	CIVIL	17			0	$2,847	30%	5%	10%	0%	0%	3%	48%	$0	$4,210	$0	$4,210
2				Traffic calming pinch points x 2 between Oxford Rd and Macquarie Rd	2	CIVIL	17			2	$22,776	30%	5%	10%	0%	0%	3%	48%	$0	$33,710	$0	$33,710
2				Lane treatment on Cumberland Rd leg of Macquarie Rd roundabout	2	LINE	4	50	50	50	$1,288	10%	20%	0%	0%	0%	3%	33%	$0	$1,710	$0	$1,710
								3,680			$288,559								$0	$414,740	$0	$414,740

Section Ref	Works Ref	Route Name	Route Description	Item	Priority	Works Type	Standard Cost Ref	Total Distance (m)	On-Road Distance (m)	Multiplier*	Base Cost	Contingencies	Maintenance and Repairs	Minor Utility Adjustments	Landscaping & Urban Design	Work Under Traffic	Design Fees	Total Mark Up	Priority 1 Item Cost	Priority 2 Item Cost	Priority 3 Item Cost	Total Item Cost
2		Macquarie Road	Cumberland Rd to Fields Road	Lane markings, signage and logos between Cumberland Rd and Henderson Rd	2	LINE	4	150	150	150	$3,863	10%	20%	0%	0%	0%	3%	33%	$0	$5,140	$0	$5,140
2				Henderson Rd 2-lane roundabout - direct cyclists on to footpath	2	CIVIL	38			1	$4,872	30%	5%	10%	0%	0%	3%	48%	$0	$7,210	$0	$7,210
2				Treatment at Fields Road - divert to footpaths	2	CIVIL	38			1	$4,872	30%	5%	10%	0%	0%	3%	48%	$0	$7,210	$0	$7,210
								150			$13,606								$0	$19,560	$0	$19,560
2		Oxford Road	Ingleburn Rd to Bensley Rd	Shared zone through shopping area between Ingleburn Rd and Cumberland Rd	EXISTING	EXISTING	-	300	300	-	$0	10%	0%	0%	0%	0%	3%	13%	$0	$0	$0	$0
2				Linemarking at intersection with Cumberland Rd including approaches and departures in both directions	3	LINE	4	150	150	150	$3,863	10%	20%	0%	0%	0%	3%	33%	$0	$0	$5,140	$5,140
2				Linemarking at Collins Prom/Harold St signalised intersection approach and departure on west leg	3	LINE	4	130	130	130	$3,348	10%	20%	0%	0%	0%	3%	33%	$0	$0	$4,450	$4,450
2				Mixed traffic with logos and signage between Collins Prom and Bensley Rd	3	LINE	4	700	700	700	$18,026	10%	20%	0%	0%	0%	3%	33%	$0	$0	$23,970	$23,970
								1,280			$25,236								$0	$0	$33,560	$33,560
2		Ben Lomond Road	Campbelltown Rd to Hansens Rd	Lanes and logos between Campbelltown Rd and Airds Rd	1	LINE	4	500	500	500	$12,876	10%	20%	0%	0%	0%	3%	33%	$17,120	$0	$0	$17,120
2		Note: off-road preferable to on-road		Cary/Holmes roundabout - linemarking through intersection	1	LINE	36			1	$2,492	10%	20%	0%	0%	0%	3%	33%	$3,310	$0	$0	$3,310
2		between Campbelltown Rd and		Airds Rd roundabout - divert onto footpath	1	CIVIL	38			1	$4,872	30%	5%	10%	0%	0%	3%	48%	$7,210	$0	$0	$7,210
2		Pembroke Rd		Use existing footpath on north side of carriageway between Airds Rd and Pembroke Rd	EXISTING	EXISTING	-	950		-	$0	10%	0%	0%	0%	0%	3%	13%	$0	$0	$0	$0
2				Pembroke 2-lane roundabout intersection - use footpaths	1	CIVIL	38				$0	30%	5%	10%	0%	0%	3%	48%	$0	$0	$0	$0
2				Treatment between Pembroke Rd and Townson Ave, including Townson Ave roundabout - linemarking and treatment of pinch points	3	CIVIL	17	150	150	2	$22,776	30%	5%	10%	0%	0%	3%	48%	$0	$0	$33,710	$33,710
2				Townson Ave to Eagleview Rd - off-road shared path on the north side of the carriageway. Note that recent traffic calming works with a central island have reduced the lane widths and are too narrow for bike and vehicle lane	3	CIVIL	12	630		630	$122,850	30%	5%	10%	0%	0%	3%	48%	$0	$0	$181,820	$181,820
2				Edward Edgar St roundabout - off-road crossing	EXISTING	EXISTING	-			-	$0	10%	0%	0%	0%	0%	3%	13%	$0	$0	$0	$0
2				Eagleview Rd roundabout - mixed traffic through intersection	3	CIVIL	36			1	$2,492	30%	5%	10%	0%	0%	3%	48%	$0	$0	$3,690	$3,690
2				2-lane/2-way rural road east of Eagleview Rd - either road widening with on-road lanes (preferred) or mixed traffic with logos and signage	3	CIVIL	31	1,270	1,270	2,540	$176,986	30%	5%	10%	0%	0%	3%	48%	$0	$0	$261,940	$261,940
								3,500			$345,343								$27,640	$0	$481,160	$508,800
2		St Andrews Road	Camden LGA boundary to Campbelltown Rd	Rural road north of Spitfire Drive (shoulder works and delineation required)	3	CIVIL	31	2,900	2,900	5,800	$404,141	30%	5%	10%	0%	0%	3%	48%	$0	$0	$598,130	$598,130
2				Spitfire Dr roundabout treatment - lanes through intersection	2	LINE	36	100	100	1	$2,492	10%	20%	0%	0%	0%	3%	33%	$0	$3,310	$0	$3,310
2				Shoulder widening with delineation south of Spitfire Drive	2	CIVIL	31	150	150	300	$20,904	30%	5%	10%	0%	0%	3%	48%	$0	$30,940	$0	$30,940
2				South of Spitfire Drive - narrow lanes and bridge over M5, pinch point at ped crossing - widen existing footpath	2	CIVIL	14	375		375	$29,250	30%	5%	10%	0%	0%	3%	48%	$0	$43,290	$0	$43,290
2				South of M5 overpass - on-road shoulder lanes with shoulder widening	2	CIVIL	31	1,000	1,000	2,000	$139,359	30%	5%	10%	0%	0%	3%	48%	$0	$206,250	$0	$206,250
2				Treatment across Aberdeen Rd T-intersection (seagull) - extend lanes through junction	2	LINE	36			1	$2,492	10%	20%	0%	0%	0%	3%	33%	$0	$3,310	$0	$3,310
2				Ballantrae Dr roundabout - extend lanes through intersection	2	LINE	36			1	$2,492	10%	20%	0%	0%	0%	3%	33%	$0	$3,310	$0	$3,310
2				Campbelltown Rd large roundabout - divert onto footpath	2	CIVIL	38			1	$4,872	30%	5%	10%	0%	0%	3%	48%	$0	$7,210	$0	$7,210
								4,525			$606,002								$0	$297,620	$598,130	$895,750
2		Raby Road	Camden LGA boundary to Campbelltown Rd off-ramp (west of M5)	On-road lanes north of Thunderbolt - need improved signage and linemarking	3	LINE	4	1,300	1,300	1,300	$33,477	10%	20%	0%	0%	0%	3%	33%	$0	$0	$44,520	$44,520
2				Treatment at Epping Forest Dr/Thunderbolt Dr roundabout - lanes through roundabout	1	LINE	36			1	$2,492	10%	20%	0%	0%	0%	3%	33%	$3,310	$0	$0	$3,310
2				Linemarking of on-road lanes between Epping Forest Dr and Eagle Vale Drive	1	LINE	4	1,700	1,700	1,700	$43,777	10%	20%	0%	0%	0%	3%	33%	$58,220	$0	$0	$58,220
2				Treatment at Eschol Park Drive T-intersection - lanes through intersection	1	LINE	25			1	$777	10%	20%	0%	0%	0%	3%	33%	$1,030	$0	$0	$1,030
2				Eagle Vale Drive 2-lane roundabout - divert to footpath	1	CIVIL	38	150		1	$4,872	30%	5%	10%	0%	0%	3%	48%	$7,210	$0	$0	$7,210
2				Linemarking of on-road lanes between Eagle Vale Dr and Campbelltown Rd off-ramp	1	LINE	4	350	350	350	$9,013	10%	20%	0%	0%	0%	3%	33%	$11,990	$0	$0	$11,990
								3,500			$94,407								$81,760	$0	$44,520	$126,280
2		Badgally Road	Eagle Vale Drive to Farrow Rd/Watsford Rd	Eagle Vale Drive to Dobell Rd - existing on-road lanes (excl. intersection treatments)	EXISTING	EXISTING	-	900	900	-	$0	10%	0%	0%	0%	0%	3%	13%	$0	$0	$0	$0
2				Badgally Rd/Clydesdale Dr roundabout intersection - lanes through intersection (some kerb works required)	3	CIVIL	39			1	$12,634	30%	5%	10%	0%	0%	3%	48%	$0	$0	$18,700	$18,700
2				Badgally Rd/Shetland Dr roundabout intersection - lanes through intersection (some kerb works required)	3	CIVIL	39			1	$12,634	30%	5%	10%	0%	0%	3%	48%	$0	$0	$18,700	$18,700
2				Badgally Rd/Dobell Rd roundabout intersection - lanes through intersection (some kerb works required)	3	CIVIL	39			1	$12,634	30%	5%	10%	0%	0%	3%	48%	$0	$0	$18,700	$18,700
2				Dobell Rd to Johnson Rd - off-road shared path	3	CIVIL	12	620		620	$120,900	30%	5%	10%	0%	0%	3%	48%	$0	$0	$178,930	$178,930
2				Johnson Rd to Blaxland Rd - off-road shared path	EXISTING	EXISTING	-	500		-	$0	10%	0%	0%	0%	0%	3%	13%	$0	$0	$0	$0
2				Blaxland Rd signals - linemarking and logos at both approaches and departures	3	LINE	25			2	$1,554	10%	20%	0%	0%	0%	3%	33%	$0	$0	$2,070	$2,070
2				Mixed traffic with logos and signage south of Blaxland Rd to station	3	LINE	4	450	450	450	$11,588	10%	20%	0%	0%	0%	3%	33%	$0	$0	$15,410	$15,410
2				Missing link across railway line to connect Badgally Rd and Broughton St NE of Campbelltown Station - to be considered in future works	3	PLANNING	2			1	$0	10%	0%	0%	0%	0%	3%	13%	$0	$0	$0	$0
								2,470			$171,943								$0	$0	$252,510	$252,510
2		Broughton Street/Georges River Road	Hurley St to Junction Rd	On-road shoulder lanes along total length - linemarking, signage and logos	1	LINE	4	3,000	3,000	3,000	$77,254	10%	20%	0%	0%	0%	3%	33%	$102,750	$0	$0	$102,750
2				Moore Oxley bypass - signalised intersection treatment on approaches	1	LINE	25			2	$1,554	10%	20%	0%	0%	0%	3%	33%	$2,070	$0	$0	$2,070
2				Lindesay St - roundabout intersection treatment - mixed traffic	1	LINE	36			1	$2,492	10%	20%	0%	0%	0%	3%	33%	$3,310	$0	$0	$3,310

Bicycle Strategy for Campbelltown

Job No GS10800
Date Apr-09

GTAconsultants

Section Ref	Works Ref	Route Name	Route Description	Item	Priority	Works Type	Standard Cost Ref	Total Distance (m)	On-Road Distance (m)	Multiplier*	Base Cost	Contingencies	Maintenance and Repairs	Minor Utility Adjustments	Landscaping & Urban Design	Work Under Traffic	Design Fees	Total Mark Up	Priority 1 Item Cost	Priority 2 Item Cost	Priority 3 Item Cost	Total Item Cost
2				Waminda Avenue - signalised intersection treatment on approaches	1	LINE	25			2	$1,554	10%	20%	0%	0%	0%	3%	33%	$2,070	$0	$0	$2,070
2				Riverside Drie - Seagull intersection - continue lanes through intersection	1	LINE	25			2	$1,554	10%	20%	0%	0%	0%	3%	33%	$2,070	$0	$0	$2,070
								3,000			$84,407								$112,270	$0	$0	$112,270
2		Englorie Park Drive	Cleopatra Dr to Gilchrist Dr	Bicycle shoulder lanes and intersection treatments along total length	EXISTING	EXISTING	-	2,600	2,600	-	$0	10%	0%	0%	0%	0%	3%	13%	$0	$0	$0	$0
								2,600			$0								$0	$0	$0	$0
2		Gilchrist Drive	Englorie Park Dr to Narellan Rd	Englorie Park Dr to Therry Rd - Bicycle shoulder lanes	EXISTING	EXISTING	-	270	270	-	$0	10%	0%	0%	0%	0%	3%	13%	$0	$0	$0	$0
2				Therry Rd roundabout intersection - divert to existing footpaths	1	CIVIL	38			1	$4,872	30%	5%	10%	0%	0%	3%	48%	$7,210	$0	$0	$7,210
2				Therry Rd to Narellan Rd - linemarking and logos for on-road bicycle shoulder lanes	1	LINE	4	1,300	1,300	1,300	$33,477	10%	20%	0%	0%	0%	3%	33%	$44,520	$0	$0	$44,520
2				Kellicar Rd signalised intersection treatment on approaches	1	LINE	25			2	$1,554	10%	20%	0%	0%	0%	3%	33%	$2,070	$0	$0	$2,070
2				Parc Guell Dr signalised intersection treatment on approaches	1	LINE	25			2	$1,554	10%	20%	0%	0%	0%	3%	33%	$2,070	$0	$0	$2,070
								1,570			$41,456								$55,870	$0	$0	$55,870
2		Eagle Vale Drive	Badgally Rd to Raby Rd	Shoulder widening with delineation from Badgally Rd to Gould Rd	2	CIVIL	31	2,400	2,400	4,800	$334,462	30%	5%	10%	0%	0%	3%	48%	$0	$495,000	$0	$495,000
2				Link to off-road paths at Eschol Park (Gould Road)	2	CIVIL	16			1	$595	30%	5%	10%	0%	0%	3%	48%	$0	$880	$0	$880
2				Roundabout treatment at Epping Forest Drive - linemarking through intersection	2	LINE	36			1	$2,492	10%	20%	0%	0%	0%	3%	33%	$0	$3,310	$0	$3,310
								2,400			$337,549								$0	$499,190	$0	$499,190
2		Epping Forest Drive	Eagle Vale Drive to Raby Rd	Mixed traffic with logos and signage along total length	2	LINE	4	2,500	2,500	2,500	$64,378	10%	20%	0%	0%	0%	3%	33%	$0	$85,620	$0	$85,620
2				Traffic calming pinch points x 7	2	CIVIL	17			7	$79,715	30%	5%	10%	0%	0%	3%	48%	$0	$117,980	$0	$117,980
2				Eschol Park Dr T-intersection pinch point	2	CIVIL	17			1	$11,388	30%	5%	10%	0%	0%	3%	48%	$0	$16,850	$0	$16,850
2				Rio Grande Drive roundabout intersection treatment - mixed traffic through intersection	2	LINE	36			1	$2,492	10%	20%	0%	0%	0%	3%	33%	$0	$3,310	$0	$3,310
								2,500			$157,973								$0	$223,760	$0	$223,760
2		Thunderbolt Drive/Spitfire Drive	Raby Rd to St Andrews Rd	Mixed traffic with logos and signage along total length	2	LINE	4	1,600	1,600	1,600	$41,202	10%	20%	0%	0%	0%	3%	33%	$0	$54,800	$0	$54,800
2				Traffic calming pinch points x 3 at school	2	CIVIL	17			3	$34,164	30%	5%	10%	0%	0%	3%	48%	$0	$50,560	$0	$50,560
								1,600			$75,366								$0	$105,360	$0	$105,360
2		St Johns Road/Waminda Avenue/Macquarie	Briar Rd to Rudd Rd	St Johns Rd - bicycle shoulder lanes (excluding intersection treatments)	EXISTING	EXISTING	-	1,350	1,350	-	$0	10%	0%	0%	0%	0%	3%	13%	$0	$0	$0	$0
2		Avenue/Angle Road/O'Sullivan Road		St Johns Rd/Hoddle Ave/McLaughlin Cct roundabout - continue lanes through intersection	2	LINE	36			1	$2,492	10%	20%	0%	0%	0%	3%	33%	$0	$3,310	$0	$3,310
2				St Patricks College Access - roundabout and traffic calming pinch point - continue lanes - kerb works and markings	2	CIVIL	17	100	100	2	$22,776	30%	5%	10%	0%	0%	3%	48%	$0	$33,710	$0	$33,710
2				St Johns Rd/Waminda Ave roundabout treatment - lanes through intersection	2	LINE	36			1	$2,492	10%	20%	0%	0%	0%	3%	33%	$0	$3,310	$0	$3,310
2				Waminda Avenue - St Johns Rd to south of Macquarie Ave - bicycle shoulder lanes	EXISTING	EXISTING	-	1,500	1,500	-	$0	10%	0%	0%	0%	0%	3%	13%	$0	$0	$0	$0
2				Waminda Ave in the vicinity of Macaquarie Ave and Burns Rd - linemarking and logos for on-road bicycle lanes	2	LINE	4	220	220	220	$5,665	10%	20%	0%	0%	0%	3%	33%	$0	$7,530	$0	$7,530
2				Waminda Ave between Burns Rd and Angle Rd - existing bicycle shoulder lane	EXISTING	EXISTING	-	250	250	-	$0	10%	0%	0%	0%	0%	3%	13%	$0	$0	$0	$0
2				Waminda Ave slip lane into Angle Rd - logos and signage	2	LINE	25			1	$777	10%	20%	0%	0%	0%	3%	33%	$0	$1,030	$0	$1,030
2				Angle Rd - existing on-road bicycle shoulder lanes	EXISTING	EXISTING	-	500	500	-	$0	10%	0%	0%	0%	0%	3%	13%	$0	$0	$0	$0
2				Angle Rd traffic calming - speed humps pinch points x 2	2	CIVIL	17			1	$11,388	30%	5%	10%	0%	0%	3%	48%	$0	$16,850	$0	$16,850
2				Angle Rd/O'Sullivan Rd roundabout intersection treatment - lanes through intersection	2	LINE	36			1	$2,492	10%	20%	0%	0%	0%	3%	33%	$0	$3,310	$0	$3,310
2				Illawong Rd to Lindesay St - on road lanes	EXISTING	EXISTING	-	700	700	-	$0	10%	0%	0%	0%	0%	3%	13%	$0	$0	$0	$0
2				Southern leg of O'Sullivan Rd/Pembroke Rd intersection - linemarking and logos	2	LINE	4	70	70	70	$1,803	10%	20%	0%	0%	0%	3%	33%	$0	$2,400	$0	$2,400
								4,690			$49,884								$0	$71,450	$0	$71,450
2		Rose Payten Drive	Campbelltown Rd to Leumeah Rd	Off-road shared path - south side	EXISTING	EXISTING	-	850		-	$0	10%	0%	0%	0%	0%	3%	13%	$0	$0	$0	$0
								850			$0								$0	$0	$0	$0
2		Smiths Creek Bypass	Pembroke Rd to Leumeah Rd	On-road shoulder lanes - some widening required along with delineation	2	CIVIL	31	380	380	760	$52,956	30%	5%	10%	0%	0%	3%	48%	$0	$78,380	$0	$78,380
								380			$52,956								$0	$78,380	$0	$78,380
2		Leumeah Road	Smiths Creek Bypass to Junction Rd	Wyangala Cres roundabout treatment - continue on-road lanes through intersection	2	LINE	36			1	$2,492	10%	20%	0%	0%	0%	3%	33%	$0	$3,310	$0	$3,310
2				Bicycle shoulder lanes along total length	2	LINE	4	850	850	850	$21,889	10%	20%	0%	0%	0%	3%	33%	$0	$29,110	$0	$29,110
2				Parkhill Ave roundabout treatment - continue on-road lanes through intersection	2	LINE	36			1	$2,492	10%	20%	0%	0%	0%	3%	33%	$0	$3,310	$0	$3,310
2				Hansens Rd/Junction Rd roundabout treatment - linemarking through intersection	2	LINE	36			1	$2,492	10%	20%	0%	0%	0%	3%	33%	$0	$3,310	$0	$3,310
								850			$29,364								$0	$39,040	$0	$39,040
2		Junction Road	Georges River Rd to Leumeah Rd	Georges River Rd to Nambucca St - use off-road shared path and link to service road on west side	2	LINE	4	750	750	750	$19,313	10%	20%	0%	0%	0%	3%	33%	$0	$25,690	$0	$25,690
2				Oberon Rd to Leumeah Rd - existing on-road shoulder lanes	EXISTING	EXISTING	-	2,300	2,300	-	$0	10%	0%	0%	0%	0%	3%	13%	$0	$0	$0	$0
2				Traffic calming pinch points at school x 3	2	CIVIL	17			3	$34,164	30%	5%	10%	0%	0%	3%	48%	$0	$50,560	$0	$50,560
2				Junction Rd/Cook Rd roundabout - kerb works and delineation to provide lanes through intersection	2	CIVIL	37			1	$25,268	30%	5%	10%	0%	0%	3%	48%	$0	$37,400	$0	$37,400
2				Southern leg of Leumeah Rd roundabout - formalise cycle lanes	2	LINE	4	60	60	60	$1,545	10%	20%	0%	0%	0%	3%	33%	$0	$2,050	$0	$2,050
								3,110			$80,290								$0	$115,700	$0	$115,700
Total - Main Feeder Routes								**42,655**			**$2,454,340**								**$277,540**	**$1,864,800**	**$1,409,880**	**$3,552,220**
GRAND TOTAL								128,955			$10,723,895								$2,720,590	$2,418,640	$10,567,090	$15,706,320

Bicycle Strategy for Campbelltown

Job No GS10800
Date Apr-09

Standard Costs

Reference	Description	Type of Works	Cost 2003 (some other years)	Cost 2009	Unit	Source	Comment
0	Existing facilities or works included in current budget allocations	EXISTING	$ -	$ -			
1	Other jurisdictions	OTHER JURISDICTIONS	$ -	$ -			Other Council, private developers, etc
2	Strategic link for inclusion in future planning control	PLANNING	$ -	$ -			eg Masterplans, S94, LEP, DCP, etc
3	Signs & Markings - Centreline, Bike & Ped Logos each way every 100m, signs at 200m - off road	LINE	$ 8.39	$ 10.62	m	2	Thermoplastic, combination of Line Items 6, 18 & 30, plus back to back shared path sign every 200m
4	Signs & Markings - Edgeline, Laneline, Bike Logos every 100m, signs at 200m - on road, both sides	LINE	$ 20.35	$ 25.75	m	2	Thermoplastic, combination of Line Items 6, 18 & 30
5	Signs & Markings - Directional Signs	SIGN	$ 321.75	$ 407.12	each	2	Supply and install, includes one stem with two plates
6	Signs & Markings - Regulatory, Warning, Advisory Signs	SIGN	$ 203.50	$ 257.49	each	2	Supply and install, includes one stem with single plate
7	Parking - Bike Parking U-rail	CIVIL	$ 750.00	$ 948.99	each	3	at least two per site, incl sign and logo. Alternative is multi-space bike racks vs U-rail. Also used as generic item for seating provision.
8	Pavement - Footpath reseal	CIVIL	$ 34.65	$ 43.84	m	1	1.5m wide
9	Road Safety Audit	CIVIL	$ 5,000.00	$ 6,326.60	each	--	Nominal fee based on Jamieson Foley experience
10	Civil - remove existing landscaping and replace	CIVIL	$ 20,000.00	$ 25,306.38	each	10	
11	Structure - Cut and cover tunnel	CIVIL	$ 172,532.48	$ 218,308.63	each	7	specific dimensions detailed in attached worksheet
12	Pavement - Footpath - Concrete (2.5m, two-way)	CIVIL		$ 195.00	m	12	
12a	Pavement - Footpath - Concrete (1.5m, pedestrian)	CIVIL		$ 117.00	m	12	
13	Pavement - Footpath - Bitumen (2.0m two-way) - LOW KEY	CIVIL	$ 228.53	$ 289.16	m	1	
14	Pavement - Footpath - Widen existing, Concrete (1.0m)	CIVIL		$ 78.00	m	12	
15	Pavement - new car park - bitumen seal	CIVIL	$ 236.78	$ 299.60	m2	1	
16	Civil - Kerb Ramp	CIVIL	$ 470.25	$ 595.02	each	1	Lipless
17	Civil - Bicycle Refuge / LATM / Traffic Facilities	CIVIL	$ 9,000.00	$ 11,387.87	each	1	2 concrete islands, 2.5mX10m, linemarking, signage, 2 kerb crossings. These costs have also been applied to other minor civil works.
18	Signs & Markings - Bicycle Logo	LINE	$ 79.83	$ 101.01	each	2	Thermoplastic
19	Structure - Retaining wall	CIVIL	$ 250.00	$ 316.33	m	8	Assume 1.0m high, backfilled with earth and planting re-established
20	Parking - Bicycle Locker	CIVIL	$ 2,269.00	$ 2,871.01	each	4	Vertical locker fits 1 bike. Horizontal locker fits 2 bikes. Includes site establishment costs, slab and supply and delivery of locker by DoT nominated contractor LEDA.
21	Pavement - Green Pavement	CIVIL	$ 86.34	$ 109.25	m	5	1.5m wide
22	Structure - Solar Street Lighting	CIVIL	$ 100.00	$ 126.53	m	7	
23	Pavement - contra flow lane and mixed traffic	CIVIL	$ 94.15	$ 119.13	m	--	green pavement 1.5m wide, PLUS combination of Line Items 6, 18 & 30, PLUS bike lane sign every 100m
24	Civil - raised priority crossing	CIVIL	$ 17,123.20	$ 21,666.31	each	1,2	6.6x6m concrete platform, signs and markings, 2 kerb crossings
25	Signs & Markings - low key intersection improvements	LINE	$ 613.96	$ 776.86	each	1	includes continuity lines, holding line, giveway sign, 20m wide, bike logos
26	Signals - Bike Lamps at Signals per pair	CIVIL	$ 1,500.00	$ 1,897.98	pair	11	
27	Signals - Pedestrian Signals	CIVIL	$ 90,000.00	$ 113,878.71	each	11	includes minor civil works, such as kerbramps as well as signage
27a	Signals - additional pedestrian crossing legs at existing traffic signals (allowance only)	CIVIL		$ 50,000.00	1-2 legs		includes moving signal posts but minimal civil intervention - intersection specific
28	Signals - Traffic Signals	CIVIL	$ 180,000.00	$ 227,757.42	each	11	includes minor civil works, such as kerbramps as well as signage
29	Civil - steel mesh protective fence	CIVIL	$ 50.00	$ 63.27	m	7	
30	Signs & Markings - Linemarking	LINE	$ 4.18	$ 5.29	m	2	Thermoplastic
31	Pavement - sealed shoulder, 1.5m	CIVIL	$ 55.07	$ 69.68	m	1	
32	Pavement - fibre glass planks	CIVIL	$ 1,025.00	$ 1,296.95	m	9	Use fibre glass panels such as those provided by "Anderson Products" in Newcastle (cf John Whitton Bridge). Panels are 0.6mX6.0m and cost $1230 (2005) each. Assume 5 panels wide and divide by 6m to get linear metre costs.
33	Parking - Bicycle Cage (shelter with rails)	CIVIL		$ 35,000.00	each		dependent of type and quality of structure, accomodates 15-20 bikes
34	Structure - Bus Shelter	CIVIL	$ 7,480.00	$ 9,464.59	each	1	Relocate
35	Signs & Markings - low key shared path, regulatory signs and logos at 200m	SIGN	$ 169.84	$ 214.90	m	3	Thermoplastic, combination of Line Items 6 & 18, using existing posts, powerpoles and sign stems
36	Roundabout treatment A - linemarking adjustments on approaches and through intersection, logos and signage	LINE	$ 1,969.32	$ 2,491.82	each		Combination of line items 6, 18 & 30
37	Roundabout treatment B - kerb adjustments and linemarking on approaches and through intersection, logos and signage	CIVIL	$ 19,969.32	$ 25,267.56	each		Combination of line items 17, 6, 18 & 30
38	Roundabout treatment C - divert onto existing/modified footpaths, kerbs ramps, logos and signage	CIVIL	$ 3,850.32	$ 4,871.88	each		Combination of line items 16, 6, 18 & 30
39	Roundabout treatment D - kerb adjustments and linemarking on one approach and through intersection, logos and signage on other approach	CIVIL	$ 9,984.66	$ 12,633.78	each		Combination of line items 17, 6, 18 & 30
40	Light/Power Pole Relocation (allowance only)	CIVIL		$ 5,000.00	each		BDM Estimate based on simple relocation - will escalate with any HV or bi-directional cabling
41	Remove Bollards/Fence/sign,relocate bin	CIVIL		$ 500.00	each		allowance only, depends on task difficulty and resources required
42	General maintenance (eg. Tree trimming)	MAINTENANCE	$ -	$ -			Included in regular Council maintenance program

Notes

1. *all costs for supply and install*
2. *25% discount applied to all pavement works, based on Council schedule due to economies of scale (>30M^2)*
3. *15% discount applied to all other works, based on Council schedule due to economies of scale (>30M^2)*
4. *CPI 4%*

Sources

1. *Leichhardt Council Annual Cost Schedule for 2003/2004 (JFT&T Ref #4736, attached)*
2. *Quotes for Leichhardt Council by HVS Services on three separate occasions (JFT&T Ref #4736)*
3. *Information provided by South Sydney Council based on recent projects*
4. *DoT / Bicycle NSW Locker Program (attached)*
5. *Internal RTA advice re costs of green pavement from Peter Mann dated 11 October 2002 (attached)*
6. *Bridges and Paths Averages worksheet(attached)*
7. *JFA/STC North Shore Cycleway Rpt, July 2003, p65 (attached)*
8. *Rawlinsons Australian Construction Handbook Seventeenth Edition 1999*
9. *Verbal quotation obtained by Jamieson Foley in Feb 05*
10. *Experience by The Environment Works Pty Ltd, Jan 2006*
11. *Verbal advice from RTA 4 April 2005*
12. *Advice from Campbelltown Council based on contract rates 2008/09*

Bicycle Strategy for Campbelltown
Job No GS10800
Date Apr-09

GTAconsultants

Base Costs of Works from Leichhardt Council 2003/2004

WORKS AND SERVICES

Line Reference	DESCRIPTION	GST Position	PROPOSED FEE 2003/2004 Inclusive Amount	GST Amount	Exclusive Amount	PRIOR YEAR FEE Inclusive Amount	Basis of Fee	Receipt Code
886	**ROAD AND FOOTPATH OPENINGS**							
887	Deposits and Charges							
888	Permit Fee (non refundable)	Exempt	62.00	0.00	62.00	60.00	Full	
889	plus							
890	Deposit - refundable on full payment of restoration amount	Nil	611.00	0.00	611.00	590.00	Deposit	
891	plus							
892	*Calculated cost of road and footpath restoration (in accordance with rates below):-*							
893	***Road Openings - Per m2***							
894	(Note: 25% discount for openings exceeding 30m2)							
895	Asphalt (Bitumen, Tar)	Taxable	315.70	28.70	287.00	304.70	Full	
896	Asphalt resheet only (25mm thick)	Taxable	48.95	4.45	44.50	47.30	Full	
897	Asphalt on concrete base	Taxable	387.20	35.20	352.00	374.00	Full	
898	Concrete	Taxable	382.80	34.80	348.00	369.60	Full	
899	***Footpath Openings - Per m2***							
900	(Note: 25% discount for openings exceeding 30m2)							
901	grass verge	Taxable	42.35	3.85	38.50	40.70	Full	
902	Asphalt (Bitumen, Tar)	Taxable	152.35	13.85	138.50	147.40	Full	
903	Asphalt resheet only (12mm thick)	Taxable	30.80	2.80	28.00	29.70	Full	
904	Asphalt on concrete base	Taxable	182.05	16.55	165.50	176.00	Full	
905	Concrete (or concrete, brick or block paving)	Taxable	188.10	17.10	171.00	181.50	Full	
906	Precast concrete slab	Taxable	298.65	27.15	271.50	288.20	Full	
907								
908	***Crossings -***							
909	115mm residential	Taxable	248.60	22.60	226.00	239.80	Full	
910	150mm industrial	Taxable	315.70	28.70	287.00	304.70	Full	
911	200mm industrial	Taxable	449.90	40.90	409.00	434.50	Full	
912								
913	***Other***							
914	Concrete Kerb only or Gutter only - per meter	Taxable	169.95	15.45	154.50	163.90	Full	
915	Sandstone Kerb only - per meter	Taxable	224.40	20.40	204.00	216.70	Full	
916	Concrete Kerb and Gutter - per meter	Taxable	242.55	22.05	220.50	234.30	Full	
917	Sandstone Kerb and Concrete Gutter - per meter	Taxable	291.50	26.50	265.00	281.60	Full	
918	Hole in Kerb - per hole	Taxable	85.25	7.75	77.50	82.50	Full	
919	Laying 100mm stormwater pipe - per meter	Taxable	36.30	3.30	33.00	35.20	Full	
920	Saw cutting - establishment fee	Taxable	231.00	21.00	210.00	223.30	Full	
921	25mm run - per meter	Taxable	26.40	2.40	24.00	25.30	Full	
922	Minimum charge	Taxable	413.60	37.60	376.00	399.30	Full	
923	Minimum charge will be one unit of area or length except sawcutting.							
924	Charge will be calculated to nearest 0.2 unit of area or length.							
925	Mainstreet Footpath Paver - per m2	Taxable	93.50	8.50	85.00	0.00	Full	
926								
927	***Example*** *:To open a trench 0.5m wide across a 3.6m wide footpath (half concrete, half grass) and 6m into asphalt roadway.*							
928	Permit Fee	Exempt	62.00	0.00	62.00	59.00	Full	
929	Deposit (refundable)	Nil	611.00	0.00	611.00	587.00	Full	
930	Path concrete 1.8 x 0.5 = 1m2 (up to nearest 0.2)	Taxable	188.10	17.10	171.00	181.50	Full	
931	Grass 1.8 x 0.5 = 1m2 (up to nearest 0.2)	Taxable	42.35	3.85	38.50	40.70	Full	
932	Concrete Kerb and Gutter 0.5 = 0.6m (up to nearest 0.2)	Taxable	145.53	13.23	132.30	140.80	Full	
933	Asphalt Road 6 x 0.5 = 3m2	Taxable	947.10	86.10	861.00	914.10	Full	
934	Payment Required	Taxable	2063.38	187.58	1,875.80	1,923.10	Full	
935	Important Note 1: On final inspection the cost of any restoration for areas in excess of nominated areas will be deducted from the deposit or charged separately to the applicant.							
936	The applicant must return permit to Council before restoration will proceed.							
937								
938	**Vehicle Crossings & Associated Works**							
939	Application fee for vehicular crossing	Taxable	57.20	5.20	52.00	55.00	Full	
940	- 115mm residential per m2	Taxable	248.60	22.60	226.00	239.80	Full	
941	- 150mm industrial per m2	Taxable	315.70	28.70	287.00	304.70	Full	
942	- 200mm industrial per m2	Taxable	449.90	40.90	409.00	434.50	Full	
943	Minimum charge	Taxable	922.90	83.90	839.00	891.00	Full	
944	Concrete Kerb only/Gutter only per metre	Taxable	169.95	15.45	154.50	163.90	Full	

WORKS AND SERVICES

Line Reference	DESCRIPTION	GST Position	PROPOSED FEE 2003/2004 Inclusive Amount	GST Amount	Exclusive Amount	PRIOR YEAR FEE Inclusive Amount	Basis of Fee	Receipt Code
945	Sandstone Kerb only per metre	Taxable	224.40	20.40	204.00	216.70	Full	
946	Concrete Kerb and Gutter per metre	Taxable	242.55	22.05	220.50	234.30	Full	
947	Sandstone Kerb and Concrete Gutter per metre	Taxable	291.50	26.50	265.00	281.60	Full	
948	Footpath concrete per m2	Taxable	188.10	17.10	171.00	181.50	Full	
949	Footpath asphalt per m2	Taxable	152.35	13.85	138.50	146.30	Full	
950	Relaying stormwater drainage per metre	Taxable	36.30	3.30	33.00	35.20	Full	
951	Relaying grass verge per m2	Taxable	42.35	3.85	38.50	40.70	Full	
952	Landscaped garden beds per m2	Taxable	102.30	9.30	93.00	99.00	Full	
953	Asphalt resheet to gutter per m2	Taxable	81.95	7.45	74.50	79.20	Full	
954	Kerb Ramps	Taxable	627.00	57.00	570.00	605.00	Full	
955								
956	**EXCAVATION**							
957	Rock excavation (allows for removal of spoil) per m3	Taxable	392.15	35.65	356.50	378.40	Full	
958	Excavation other than rock (allows for removal of spoil) per m3	Taxable	192.50	17.50	175.00	185.90	Full	
959	Rock excavation (allows for reuse of materials) per m3	Taxable	354.20	32.20	322.00	342.10	Full	
960	Excavation other than rock (allows for reuse of materials) per m3	Taxable	161.70	14.70	147.00	156.20	Full	
961								
962	**DRAINAGE WORKS**							
963	Construction of standard gully pit with extended kerb inlet	Taxable	3644.30	331.30	3,313.00	3517.80	Full	
964	Supply and installation of extended kerb inlet	Taxable	892.10	81.10	811.00	861.30	Full	
965	Construction of a concrete manhole or standard gully pit	Taxable	3037.10	276.10	2,761.00	2931.50	Full	
966								
967	**Excavation Supply and laying of reinforced concrete pipes in other than rock**							
968	* 300mm dia RCP per metre	Taxable	311.30	28.30	283.00	300.30	Full	
969	* 375mm dia RCP per metre	Taxable	361.35	32.85	328.50	348.70	Full	
970	* 450mm dia RCP per metre	Taxable	427.35	38.85	388.50	412.50	Full	
971	* 525mm dia RCP per metre	Taxable	546.70	49.70	497.00	528.00	Full	
972	* 600mm dia RCP per metre	Taxable	660.00	60.00	600.00	636.90	Full	
973								
974	**DISCOUNTS (Applied to total for each site)**							
975	For accounts up to $3,000 - Nil						Full	
976	For accounts > $ 3,000 up to $ 4,000 - 2.5%						Full	
977	For accounts > $ 4,000 up to $ 5,000 - 5.0%						Full	
978	For accounts > $ 5,000 up to $ 6,000 - 7.5%						Full	
979	For accounts > $ 6,000 up to $15,000 - 10%						Full	
980	For accounts > $15,000 - 15%						Full	
981								
982								
1085	**Removal of street furniture including cost of restoring original site.**							
1086	Seat	Taxable	330.00	30.00	300.00	0.00	Full	
1087	Bin	Taxable	330.00	30.00	300.00	0.00	Full	
1088	Bus Shelter	Taxable	3850.00	350.00	3500.00	0.00	Full	
1089	J C Decaux phone booth	Taxable	1650.00	150.00	1500.00	0.00	Full	
1090								
1091	**Relocation of street furniture including cost of restoring original site & installation at alternative position**							
1092	Seat	Taxable	495.00	45.00	450.00	0.00	Full	
1093	Bin	Taxable	495.00	45.00	450.00	0.00	Full	
1094	Bus Shelter (includes relocation of communications & electricity connections)	Taxable	8800.00	800.00	8000.00	0.00	Full	
1095	J C Decaux phone booth (includes capping off of communications & electricity)	Taxable	3850.00	350.00	3500.00	0.00	Full	

Bicycle Strategy for Campbelltown

Job No GS10800
Date Apr-09

Bridge Construction Cost

CPI *4%*

Location	Length	Width	Cost Est	Year	Cost 2006	Cost 2006 per Square Metre
Ex North Shore Cycleway 2003						
Falcon Street Ramp & Bridge	210	4.0	$ 1,600,000	2003	$ 1,799,782	$ 2,143
Ernest Street Underpass (cut and cover tunnel)	75	4.0	$ 170,000	2003	$ 191,227	$ 637
West Street Ramp	108	4.0	$ 1,000,000	2003	$ 1,124,864	$ 2,604
Brook Street Ramp & Bridge	184	4.0	$ 1,250,000	2003	$ 1,406,080	$ 1,910
Triple Bridges over Park Street and Drainage Channels	110	4.0	$ 800,000	2003	$ 899,891	$ 2,045
Brand Street Circular Ramp	159	4.0	$ 1,000,000	2003	$ 1,124,864	$ 1,769
Mowbray Road Underpass	86.5	4.0	$ 420,000	2003	$ 472,443	$ 1,365
Total	**932.5**	**4.0**	**$ 6,240,000**		**$ 7,019,151**	**$ 1,882**
Ex Bay Run Cycle Way 1999						
Iron Cove Bridge - Bridge Path	470	4.4	$ 6,204,000	1999	$ 8,164,041	$ 3,948
Iron Cove Bridge - Southern Abutment Undrpass	30	3.8	$ 342,000	1999	$ 450,049	$ 3,948
Iron Cove Bridge - Northern Cycleway Ramp	150	3.8	$ 1,710,000	1999	$ 2,250,243	$ 3,948
Iron Cove Creek - new structure	22	5.0	$ 308,000	1999	$ 405,307	$ 3,685
Total	**672**	**4.3**	**$ 8,564,000**		**$ 11,269,640**	**$ 3,938**
GRAND TOTAL	**1604.5**	**4.1**	**$ 14,804,000**		**$ 18,288,791**	**$ 2,774**

Major Pathways Construction Cost

Project	Cost / km (2003)	Cost / km (2006)	
Currently Preferred Route (North Shore Cycleway)	$2,650,000	$2,980,890	$2,980,000
Previously Preferred Route (North Shore Cycleway)	$280,000	$314,962	$310,000
Western Sydney Orbital	$1,250,000	$1,406,080	$1,410,000
Bay Run Cycleway	$1,070,000	$1,203,604	$1,200,000
Strathfield to Eastwood (rail corridor)	$400,000	$449,946	$450,000
Parramatta to Liverpool (rail corridor)	$700,000	$787,405	$790,000
M4 Viaducts	$2,166,667	$2,437,205	$2,440,000
Prospect Cycleway	$950,000	$1,068,621	$1,070,000
M5 East Motorway	$450,000	$506,189	$510,000
Average	**$1,101,852**	**$1,239,433**	$1,240,000
		min	**$310,000**
		average	**$1,240,000**
		max	**$ 2,980,000**

Sources
JFA/STC North Shore Cycleway Rpt, July 2003, p65
JFA/STC Bay Run Cycleway Rpt, Nov 1999, p31

Bicycle Strategy for Campbelltown

Job No GS10800
Date Apr-09

Sample Locker/Site Costings
Provided by Bicycle NSW

Costs calculated on proposed supply tender contract costs as at Sept 03.

Assumes metro location, no travel costs. No GST.

Basic Costs	**Horizontal**	**Vertical**
Locker Unit	$1,407.00	$1,342.00
Slab Cost	$810.00	$810.00
Numbering	$52.00	$26.00
Cost	$2,269.00	$2,178.00
No. of Bikes	2	1
Cost per bike	**$1,134.50**	**$2,178.00**
Additional Items		
Lighting	$1,450.00	$1,450.00
Site Signage	$158.00	$158.00
Muliple Lockers		
Cost per 4 bikes	$4,538.00	$8,712.00
Cost per 6 bikes	$6,807.00	$13,068.00
Cost per 8 bikes	$9,076.00	$17,424.00
Cost per 10 bikes	$11,345.00	$21,780.00
Cost per 12 bikes	$13,614.00	$26,136.00
Cost per 18 bikes	$20,421.00	$39,204.00

Sample Site - 6 Boxes		
	Horizontal	**Vertical**
6 Lockers	$6,807.00	$13,068.00
Light	$1,450.00	$1,450.00
Signage	$158.00	$158.00
Total Cost	**$8,415.00**	**$14,676.00**

Green Pavement Costs

From: PICONE Robert
Sent: Friday, 11 October 2002 14:40
To: SHERWIN Stephen; MORAN Craig; VARGA Keith; MARGISON Phil; DONALDSON Brad; LUNSMANN Rolf
Subject: FW: red SMA7

FYI.

I had previously calculated the red SMA to be $28.00 per square metre based on the $500 per tonne rate that I was given by SCS. It is now nearly double at $53.22 per square metre. Notwithstanding, still cheaper that the epoxy overlay product at about $60.
53.22
Regards
RP

-----Original Message-----
From: MANN Peter
Sent: Friday, 11 October 2002 14:27
To: PICONE Robert
Subject: red SMA7

Robert

I've been going through Boral's alternative tender for the last asphalt contract. They actually priced the red SMA7 at $53.22 (GST inclusive)/m2. Given the surface voids of SMA and the thickness of only 25mm, the bulk density of the compacted asphalt is closer to 2 tonne/m3 instead of 2.4 for dense grade asphalt with basalt aggregate. This equates closer to $1000/tonne than the $500 you have previously used. I'd pay more attention to the square metre rate which is what the coaters use. This rate is in the same ball park as the better coatings (on new work only).

regards
Peter

Bicycle Strategy for Campbelltown

Job No GS10800
Date Apr-09

Extract - North Shore Cycleway Report

North Sydney to Chatswood
4419
Jun-03

Preliminary Cost Estimates

Section	Length (m)	New Pavement	Pavement Repairs	New Jersey Barrier	Protective Fence	Bridge Structures	Retaining Walls	Priority Bicycle Intersection	Lighting	Signposting and Linemarking	Contin-gencies	Total
Cost rate per linear metre		*$160*	*$20*	*$300*	*$50*	*N/A*	*$1,000*		*$100*	*$20*	*30%*	
Warringah Expressway Corridor												
Falcon Street to Ernest Street[1)]	240		$4,800	$72,000	$9,600	$1,600,000				$4,800	$507,360	***$2,198,560***
Ernest Street to Miller Street[7)]	450		$9,000	$135,000	$18,000	$170,000				$9,000	$102,300	***$443,300***
Miller Street to West Street[2)]	250		$5,000	$75,000	$10,000	$1,000,000				$5,000	$328,500	***$1,423,500***
West Street to Brook Street[3)]	400	$6,400	$8,000	$120,000	$16,000	$1,250,000		$30,000		$8,000	$431,520	***$1,869,920***
Brook Street to Merrenburn Avenue[4)]	490		$9,800	$147,000	$19,600					$9,800	$55,860	***$242,060***
Subtotal Warringah Expressway Corridor	***1,830***	***$6,400***	***$36,600***	***$549,000***	***$73,200***	***$4,020,000***	***$0***	***$30,000***	***$0***	***$36,600***	***$1,425,540***	***$6,177,340***
North Shore Railway Corridor												
Chelmsford Avenue to Burra Street[4)]	810	$129,600			$40,500	$800,000			$81,000	$16,200	$320,190	***$1,387,490***
Burra Street to Brand Street[5)]	410	$32,800	$4,100		$20,500	$1,000,000			$41,000	$8,200	$331,980	***$1,438,580***
Brand Street to Mowbray Road[6)]	350	$56,000			$17,500	$420,000			$35,000	$7,000	$160,650	***$696,150***
Mowbray Road to Nelson Street	150	$24,000			$7,500		$150,000	$30,000	$15,000	$3,000	$68,850	***$298,350***
Nelson Street to Chatswood Oval Underpass	380	$60,800			$19,000		$190,000		$38,000	$7,600	$94,620	***$410,020***
Subtotal North Shore Railway Corridor	***2,100***	***$303,200***	***$4,100***	***$0***	***$105,000***	***$2,220,000***	***$340,000***	***$30,000***	***$210,000***	***$42,000***	***$976,290***	***$4,230,590***
GRAND TOTAL	***3,930***	***$309,600***	***$40,700***	***$549,000***	***$178,200***	***$6,240,000***	***$340,000***	***$60,000***	***$210,000***	***$78,600***	***$2,401,830***	***$10,407,930***

Sources
1) Rawlinsons (1999). Australian Construction Handbook. 17th edition. Figures increased by 4% per annum to 2003.
2) Jamieson Foley et al (1998). Two Regional Bicycle Routes. North Sydney to Chatswood. North Sydney to Macquarie. Final Report
3) Bridge cost estimates provided by Max Brand Consulting specifically for this project

Notes
1) Includes bridge structure over existing / modified northbound off-ramp; excludes realignment of pathway from Ridge Street
excludes realignment of pathway from Ridge Street
2) Includes bridge structure on southern apporach to West Street
3) Includes bridge structure over Brook Street on-ramp
4) Excludes works proposed under Lane Cove Tunnel project such as pathway north of Merrenburn Avenue, pathway south of Gore Hill Freeway, pedestrian bridge amplification at Willoughby Road
excludes proposed modifications to Lane Cove Tunnel project at pedestrian overbridge and Chelmsford Avenue
includes triple bridges at Park Street over "camel's humps"
5) Includes bridge structure at Brand Street
excludes works adjacent to Artarmon Railway Station
6) Includes bridge structure at Mowbray Road
7) Includes cut&civer tunnel at Millar Street off-ramp, as calculated by Jamieson Foley

Summary Table

Section	Length (m)	Pavement & New Jersey Barriers	Bridge Structures	Other Costs	Total
Warringah Expressway Corridor					
Falcon Street to Ernest Street1)	240	$76,800	$1,600,000	$521,760	$2,198,560
Ernest Street to Miller Street7)	450	$144,000	$170,000	$129,300	$443,300
Miller Street to West Street2)	250	$80,000	$1,000,000	$343,500	$1,423,500
West Street to Brook Street3)	400	$134,400	$1,250,000	$485,520	$1,869,920
Brook Street to Merrenburn Avenue4)	490	$156,800		$85,260	$242,060
Subtotal Warringah Expressway Corridor	***1,830***	***$592,000***		***$1,565,340***	***$6,177,340***
North Shore Railway Corridor					
Chelmsford Avenue to Burra Street4)	810	$129,600		$1,257,890	$1,387,490
Burra Street to Brand Street5)	410	$36,900		$1,401,680	$1,438,580
Brand Street to Mowbray Road6)	350	$56,000	$420,000	$220,150	$696,150
Mowbray Road to Nelson Street	150	$24,000		$274,350	$298,350
Nelson Street to Chatswood Oval Underpass	380	$60,800		$349,220	$410,020
Subtotal North Shore Railway Corridor	***2,100***	***$307,300***	***$420,000***	***$3,503,290***	***$4,230,590***
GRAND TOTAL	***3,930***	***$899,300***	***$420,000***	***$5,068,630***	***$10,407,930***

Cost Comparison

Project	Cost / km (2008)	Cost / km (2003)	Cost / km (1998)	Relative Costs	Length	Total Cost
Currently Preferred Route (North Shore Cycleway)	3,220,000	$2,650,000		1.00		$ -
Previously Preferred Route (North Shore Cycleway)	340,000	$280,000	$230,000	9.46		$ -
Western Sydney Orbital	1,520,000	$1,250,000		2.12	40	$ 50,000,000
Bay Run Cycleway	1,300,000	$1,070,000	$880,000	2.48	7	$ 7,490,000
Strathfield to Eastwood (rail corridor)	490,000	$400,000	$325,487	6.63	8	$ 3,200,000
Parramatta to Liverpool (rail corridor)	850,000	$700,000		3.79	17	$ 11,900,000
M4 Viaducts	2,640,000	$2,170,000		1.22	6	$ 13,020,000
Prospect Cycleway	1,160,000	$950,000		2.79		$ -
M5 East Motorway	550,000	$450,000	$370,000	5.89	16	$ 7,200,000
Average	**1,340,000**	**1,100,000**	**450,000**			
CPI	*4%*					

Cost of Cut & Cover Tunnel at Miller Street off Ramp

Element	volume	unit	rate	cost
cut - 5m wide, 3m high, 15m wide (sandstone)	225	m3	120	$27,000
cover - 5m long, 15m wide road bridge	75	m2	1380.4331	$103,532
path - 3m wide, 15m long	15	m	160	$2,400
approaches - 30m path each side	60	m	160	$9,600
landscaping & miscellaneous		say		$30,000
				$172,532