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Campbelltown and Camden Councils

Integrated Transport Strategy

Final Report

September 2006

INFRASTRUCTURE | MINING & INDUSTRY | DEFENCE | PROPERTY & BUILDINGS | ENVIRONMENT

Contents

Table Index

Figure Index

Appendices

1. Introduction

1.1 Study Overview

GHD was commissioned by Campbelltown and Camden Councils to prepare an *Integrated Transport Strategy* for the Campbelltown-Camden Region.

The focus of the project is transport integration. The term "integration" refers to three distinct areas:

- The integration of transport strategies across the region of Camden and Campbelltown (and connections to surrounding regions);
- The integration of land use planning and transport objectives and policies; and
- The integration of modes of transport.

The main objectives of the *Integrated Transport 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 strategy will 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 objectives of the study are:

- To bring together the various existing transport studies and strategies affecting the region into one comprehensive strategy document;
- To outline the economic, social and environmental costs and benefits of the various transport priorities identified for the region;
- To provide the Councils with information and facts to support actions to implement and lobby for transport improvements; and
- To outline an implementation strategy for transport improvements, including costings, timing and identify responsibilities.

1.2 Purpose of the Report

This document is the final report of the study and follows three working papers outlining the regional context, options assessment and strategy implementation.

This report documents and describes the strategies recommended for implementation by Campbelltown and Camden Councils and other stakeholders in order to achieve the objectives of the project.

1.3 Structure of the Report

In order to achieve the aims, this Integrated Transport Strategy is presented under the sections of:

- This introduction
- Proposed Performance Measures
- Implementation Plan for Recommended Strategies

Following these introductory sections, specific strategies are detailed in the sections relating to the five key themes of:

- Land Use
- Road Network
- Parking
- Public Transport
- Walking and Cycling

Together, the different strategies under these sections constitute the *Integrated Transport Strategy*.

1.4 How Campbelltown and Camden Councils will use this *Integrated Transport Strategy*

This Integrated Transport Strategy has been developed to assist Campbelltown and Camden Councils to accrue maximum benefit to the local area and community (residents, workers and visitors) from the significant transport planning and implementation processes currently affecting the area.

To this end, they have an important role to play as advocate, partner and champion when dealing with the State Government (and associated authorities), developers and public transport operators.

Councils are in an excellent position to promote integration between the sometimes disparate bureaucratic structures and approaches affecting land use and transport in the area.

Whilst a number of the specific strategy elements of this *Integrated Transport Strategy* will be pursued jointly by both Councils, there will also be some strategies that will be taken forward by each Council separately. The relative priorities of each Council will at times be different and the resource levels of each Council may dictate that certain strategies be pursued at different times and with different timeframes. However, in implementing the processes outlined in this *Integrated Transport Strategy*, the outcomes across the region will be consistent and coordinated.

2. Proposed Performance Measures

The success of a strategy cannot be measured without reference to specific targets or performance measures. Therefore, to enable an overall assessment of whether the various actions recommended by the *Integrated Transport Strategy* are resulting in the desired changes to travel behaviour, a number of headline performance measures are proposed below.

Importantly, these performance measures do not specifically relate to the discrete areas of Land Use, Road Network, Parking, Public Transport and Walking and Cycling as described in this document. Rather, the following measures are indicators of the *cumulative effect* of the changes resulting from the *Integrated Transport Strategy*.

The measures proposed have also been selected as they form the basis for a straightforward comparison between performance in South West Sydney and Greater Sydney, and can be readily monitored over time.

Each of the four proposed headline performance measures is described below.

2.1 Modal Split

Reason for Adoption

This performance measure provides an indication of the relative usage of each mode of transport. At the aggregate level, mode split can provide an indication of the overall demand for private car-based transport, which is strongly correlated to the quality of the environment and level of congestion on the traffic network. A lower mode split to car use indicates a higher proportion of trips taken by public transport, walking and cycling. Such an outcome would be consistent with the *Strategy* objectives which include a move towards more sustainable travel behaviour.

Current Performance

The Campbelltown and Camden areas currently show a higher proportion of trips made by private car compared to Sydney as a whole. While public transport use is similar to the Sydney average in Campbelltown, there is a lower than average usage in Camden. The proportion of other trips (inclusive of walking and cycling) is lower in both Campbelltown and Camden against than the Sydney average.

Current performance for mode split is summarised below.

Table 1 Current Performance – Mode Split

Measure	Campbelltown LGA	Camden LGA	Sydney Statistical Division
Journey to Work			
Private vehicle	73.4%	89.4%	67.7%

Measure	Campbelltown LGA	Camden LGA	Sydney Statistical Division
Train	18.6%	7.3%	14.9%
Bus	5.3%	1.9%	9.1%
Other (includes walk and cycle trips)	2.8%	1.4%	8.2%
All Trips			
Private vehicle	78.9%	86.2%	69.6%
Train	3.7%	0.9%	4.9%
Bus	4.0%	4.5%	5.7%
Other (includes walk and cycle trips)	13.4%	8.4%	19.8%

Source: Household Travel Survey Data 1997-2005

Target

The target recommended for modal split is a 10% shift away from the private car in both *journey to work* travel (provided by the Census) and for *all trips* (provided by the Household Travel Survey) over a 10 year period.

2.2 Vehicle Kilometres Travelled (VKT)

Reason for Adoption

As with modal split, this performance measure is strongly correlated to the quality of the environment and performance of transport networks. Lower VKT will result in a lower demand for car travel overall and a resulting reduction in emissions of greenhouse gases.

Current Performance

The Campbelltown and Camden areas currently show a higher VKT per person than Sydney as a whole. This indicates that residents of the area drive further than most Sydney residents.

Current performance for VKT is summarised below.

Table 2 Current Performance – VKT

Measure	Campbelltown LGA	Camden LGA	Sydney Statistical Division
Daily VKT per person	28.6	34.5	20.3

Source: Household Travel Survey Data 1997-2005

Target

The recommended target relating to VKT is to maintain or reduce the per capita VKT from 2003 levels over a ten year period.

2.3 Travel Time

Reason for Adoption

This performance measure relates to the quality of life for local residents and travel impacts on communities. Reduced travel time will improve the quality of life by reducing the time and costs spent accessing employment, education, goods and services.

Current Performance

The average daily travel time for the Campbelltown and Camden areas is lower than the Sydney average, indicating less overall time spent travelling to access destinations including employment, education and shops.

Current performance for travel time is summarised below.

Table 3 Current Performance – Travel Time

Measure	Campbelltown LGA	Camden LGA	Sydney Statistical Division
Daily travel time per person	78.8	77.1	79.0

Source: Household Travel Survey Data 1997-2005

Target

The recommended target relating to travel time is maintain an average daily travel time of no more than the Sydney average over the next ten years.

2.4 Road Injuries

Reason for Adoption

This performance measure reflects issues relating to social and economic costs in the region and Greater Sydney.

Current Performance[1]

Current crash rates in Campbelltown and Camden are currently below the NSW average of 44 injuries per 100 million VKT.

Current performance for road safety is summarised below.

[1] Data

Table 4 Current Performance – Road Injuries

Measure	Campbelltown LGA	Camden LGA	NSW
Annual number of injuries	408	118	26,017
Annual number of fatalities	12	1	547
Total annual number of injuries and fatalities	**420**	**119**	**26,564**
Annual VKT per person[1]	8,580	10,353	
Population	148,601	49,854	
Annual Injuries[2] per 100 million VKT	**33**	**23**	**44**

1. Assumed daily weekday to annual VKT factor = 300

2. Inclusive of injuries and fatalities

Sources: Household Travel Survey Data 1997-2005, Preliminary Traffic Crash Data Monthly Bulletin, RTA June 2006, and Road Traffic Crashes in New South Wales, RTA, 2004.

Target

The target relating to road injuries is to achieve a 10% reduction in the rate of injuries per 100 million VKT over the next 10 years relative to 2006 rates.

3. Implementation Plan for Recommended Strategies

3.1 Process of Development

The development of individual strategies for the *Integrated Transport Strategy* has evolved over an ongoing process based upon close consultation with Council officers, key stakeholders and an opportunity for feedback from the public.

The first step involved identifying and analysing transport and associated issues in the Campbelltown and Camden area. This was based upon a review of extensive community consultation previously undertaken by Campbelltown and Camden Councils. Stakeholder consultation undertaken by GHD as part of the *Integrated Transport Strategy* also informed the list of issues to be addressed by the study. A review of these outcomes yielded a range of issues that were documented in Working Paper 1.

The second step was the preparation of a list of individual strategies resulting from the review of the issues identified in *Working Paper 1*. These individual strategies aimed to address each of the previously identified issues, and were structured into the five study themes of land use, road network, parking, public transport and walking and cycling.

Thirdly, these individual strategies were then refined in consultation with Campbelltown and Camden Council staff to more accurately reflect the most important issues facing the study area.

The draft individual strategies for inclusion in the *Integrated Transport Strategy* were then exhibited to a range of stakeholders, including Councillors, key stakeholders and the general community, the results of which were documented in *Working Paper 2.*

Following this process of consultation, the study team reviewed the individual strategies proposed in light of the various comments and developed a prioritised list of individual strategies. Further information was developed on the implementation processes and outcomes for each recommended strategy. This information was first presented in *Working Paper 3* and is also included in this *Final Report*.

3.2 Classification of Individual Strategies

Three categories of individual strategies have been defined as outcomes to the *Integrated Transport Strategy*. These strategy levels refer to the level of detail to which each recommendation or strategy will be described in the *Integrated Transport Strategy*.

These categories are described below.

Primary Strategies

The *Integrated Transport Strategy* has developed these strategies to fully defined implementation plans. This includes a detailed outline of the process, and typical outputs such as maps, tables and strategy guidance. These strategies were chosen

for development into full implementation plans because they are fundamental to the achievement of other strategies.

Secondary Strategies

The *Integrated Transport Strategy* also describes Secondary Strategies as recommendations for further development by Campbelltown and Camden Councils. This includes a description of why the strategy is important and a detailed outline of the processes (including stakeholders, resources and likely costs to implement the strategy).

These strategies have been chosen for this level because an improved understanding of the Strategy arises from an outline of the implementation process, but the strategies may be dependant on other stakeholders or are medium to long-term strategies.

Tertiary Strategies

The *Integrated Transport Strategy* describes these strategies as recommendations for further development by Campbelltown and Camden Councils.

These strategies are considered to be clearly understood and are often already being implemented. They include lobbying activities that respond to easily identifiable issues and strategies that can be incorporated as part of other processes, strategies and plans. It should be noted that this classification does not indicate a lesser level of priority.

3.3 Recommended Strategy Implementation Timeframe

Consideration has also been given to the timeframe in which each strategy could be implemented. This has been determined by determining the sequential steps required to achieve certain strategies and also a consideration of the relative priority of each strategy.

Timeframes are as follows:

- Immediate - These actions will be addressed by the Strategy.
- Short term - These actions will be addressed within 0-3 years.
- Medium term - These actions will be addressed within 3-10 years.

3.4 Summary of Recommended Strategies

A summary of the recommended strategies is presented in Table 5, with each assigned a timeframe and strategy outcome as described above. The strategies were developed after a process of stakeholder and community consultation, as described in Section 3.1. Further explanations of the background, processes and outcomes for each strategy are described in Section 4 to Section 8 of this report.

The following abbreviations are used to provide a unique reference to each strategy:

- LU = Land Use
- R = Roads

- P = Parking
- PT = Public Transport
- WC = Walking and Cycling

Table 5 Recommended Strategies and Implementation Timeframes

Reference	Description	Timeframe	Strategy Outcome
Land Use Strategies			
LU1	Finalise the Sub Regional Planning Strategy in partnership with other Councils and the State Government.	Short term	Tertiary
LU2	Ensure areas of higher density housing are served by the Quality Public Transport Network, and that areas along the Quality Public Transport Network are zoned for higher density and mixed uses where appropriate.	Medium term	Tertiary
LU3	Plan for a minimum of 15 dwellings / hectare in residential zones unless constrained by environmental or heritage features.	Medium term	Tertiary
LU4	Consider the potential for a mix of land uses (such as home businesses) in appropriate locations within residential areas.	Medium term	Tertiary
LU5	Require consideration of public transport services, routes and access to stops when planning new development and redevelopment.	Medium term	Tertiary
LU6	Require major trip generators to locate near established or planned Quality Public Transport Network with orientation towards the transit stop.	Medium term	Tertiary
LU7	Encourage greater employment within the region through appropriate zoning and promotion.	Short term	Secondary
LU8	Conduct precinct master planning around public transport hubs to encourage transit use, promote economic activity and improve amenity.	Short term	Tertiary
LU9	Investigate existing accessibility to public transport and services to identify suitable areas for Transit Oriented Development.	Short term	Secondary
LU10	Establish cooperative arrangements between local Councils and the Department of Planning for planning, funding and prioritising infrastructure improvements, particularly for the South West Growth Centre.	Short term	Secondary
LU11	Provide input into Regional and Sub Regional Planning Strategies to: (1) locate new land releases around the Quality Public Transport Network; and (2) reserve necessary public transport corridors prior to land releases.	Short term	Secondary
Road Network Strategies			
R1	Revise the existing road hierarchy to incorporate consideration of integrated transport and land use objectives, in order to assist with network planning and development control.	Immediate	Primary

Reference	Description	Timeframe	Strategy Outcome
R2	Create a plan for an ultimate future urban arterial road network in the region. The network should cater for trips within as well as those passing through the region. Provide performance measures for traffic conditions and processes for intervention.	Medium term	Secondary
R3	Maintain current traffic models for assessment of major development and planning.	Short term	Tertiary
R4	Manage the local road network to achieve local accessibility objectives balanced against amenity and environmental aims. Management should incorporate defined performance measures and processes for intervention.	Short term	Tertiary
R5	Review road design guidelines to ensure best practice with regard to provision for buses, pedestrians and cyclists.	Short term	Tertiary
R6	Work with major trip generators to encourage access by modes other than private vehicles (public transport, walking and cycling).	Medium term	Tertiary
R7	Revise Council travel policies to becomes a leader for local businesses in regard to Travel Demand Management. This could incorporate modifying car leaseback arrangements, using more fuel efficient vehicles, promoting car pooling and access by public transport.	Short term	Tertiary
Parking Strategies			
P1	Create a regional parking policy that defines goals for parking provision and management. It should incorporate a parking structure plan, with a hierarchy of centres and users, and links to planning policies and development controls.	Immediate	Primary
P2	Address the Park and Ride needs in view of the parking strategy and structure plan, including: (1) Consideration of the potential costs and benefits of additional park and ride at rail stations and major bus stops, and (2) Consideration of the potential for park and ride sites away from the rail line to be served by high quality bus routes.	Short term	Secondary
P3	In view of the Regional Parking Strategy, investigate and implement more intensive parking management (e.g. parking restrictions, pricing and enforcement) in high demand parking areas.	Short term	Tertiary
P4	Consider accessibility related maximum car parking requirements for new development, based on accessibility to public transport.	Short term	Secondary
P5	Consider the need for provision of additional short stay parking in commercial centres.	Short term	Tertiary
P6	Revise development controls and contributions plans to collect funds for provision of additional parking, if required.	Medium term	Tertiary
P7	Reduce demand for commuter parking by promoting and supporting bus feeder services.	Short term	Tertiary
P8	Investigate the concept of public or shared parking in place of private parking, to accommodate shared parking for various land uses (e.g. daytime/ night time uses) through development control in town centres to maximise efficiency of parking use.	Medium term	Tertiary

Reference	Description	Timeframe	Strategy Outcome
P9	Consider developer agreements to provide more parking where appropriate in town centres.	Medium term	Tertiary
Public Transport Strategies			
PT1	Define a regional public transport network to inform regional and local planning, to be linked to development, traffic conditions and community expectations.	Immediate	Primary
PT2	Improve interchanges at rail stations and key bus nodes (e.g. lighting, shelter, seats, real-time information, security, disabled access), including improved facilities for buses, taxis and other transport functions.	Short term	Secondary
PT3	Improve facilities at major bus stops (e.g. shelter, timetable, seat, disabled access).	Short term	Secondary
PT4	Improve facilities at minor bus stops (e.g. J-pole, timetable, disabled access).	Medium term	Secondary
PT5	Investigate the potential for common branding for the transport network and naming of bus stops to create a sense of place and correlation with land uses.	Medium term	Tertiary
PT6	Investigate and implement actions to improve the public security around public transport stops, including land use, infrastructure and monitoring solutions.	Short term	Secondary
PT7	Provide and lobby for bus priority where required.	Short term	Tertiary
PT8	Work with bus operators to provide efficient bus routes in existing and planned areas.	Short term	Tertiary
PT9	Consider incentives and other arrangements to provide bus services from "Day 1" of occupation in new developments.	Short term	Tertiary
PT10	Investigate the potential for 'roaming' bus routes in off-peak periods.	Short term	Secondary
PT11	Investigate the potential for limited stops commuter bus services linking residential areas to key centres and public transport hubs.	Short term	Secondary
PT12	Facilitate late night bus and taxi services in partnership with local hotels, clubs, cinemas and major event venues.	Medium term	Tertiary
PT13	Lobby for better public transport integration (timetabling, fares, ticketing, marketing).	Short term	Secondary
PT14	Consider the potential for bus-only links in new areas to reduce bus travel time in comparison with private vehicle travel.	Medium term	Tertiary
PT15	Instigate marketing campaigns for public transport targeting non-users.	Short term	Tertiary
PT16	Consider the accessibility needs of disadvantaged user groups who are not currently well served by the existing public transport network, and consider the potential for extension of community transport services or other transport modes to meet their needs.	Short term	Secondary
PT17	Monitor public transport planning and provision in the South West Growth Centre.	Short term	Tertiary

Reference	Description	Timeframe	Strategy Outcome
PT18	Monitor and lobby for accessible public transport services in accordance with Ministry of Transport accessibility targets.	Short term	Tertiary
Walking and Cycling Strategies			
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.	Immediate	Primary
WC2	Complete the identified pedestrian and cycle network as outlined in current pedestrian and bike plans.	Short term	Tertiary
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.	Short term	Secondary
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.	Medium term	Tertiary
WC5	Promote active transport modes for health and transport.	Short term	Tertiary
WC6	Promote driver awareness of cycling to provide a safe road environment.	Short term	Tertiary
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).	Medium term	Tertiary
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).	Medium term	Tertiary
WC9	Review and implement road safety plans to improve the safety of pedestrians and cyclists.	Short term	Tertiary
WC10	Review pedestrian domain to ensure equitable access for disabled and mobility impaired users.	Short term	Secondary
WC11	Provide secure and visible cycle parking in all commercial centres and other major trip generators.	Short term	Tertiary

4. Land Use

4.1 Objective

The primary objective of the combined Land Use Strategies is to achieve better integration between land uses and public transport. Improved integration would be achieved by allowing higher densities and clusters of different land uses together around public transport nodes and corridors, such as around rail stations and high quality bus corridors. By allowing higher densities and a greater mix of land uses, including local employment, destinations are closer together, reducing travel distances. Higher densities in residential areas would also reduce land consumption, support public transport services and reduce car use.

4.2 Approach

The management of land use integration in Campbelltown and Camden will be undertaken in such a way that:

- Recognises that land use influences transport patterns, and that land use and transport planning need to be implemented in a coordinated manner.
- Understands that different types and mixtures of land use will have varying effects on the demand for transport.
- Recognises the potential for higher densities and clusters of land uses around public transport nodes will promote increased use of public transport.
- Understands that local land uses can have a regional effect through the creation of trip destinations, such as shopping or recreational areas.
- Promotes mixed land uses will allow shorter travel distances and more travel by walking and cycling in the area.
- Provides local employment in areas that are accessible by alternative travel modes to the car.

In order to achieve these goals, it is recommended that Camden and Campbelltown Councils co-ordinate their strategic planning with the objectives of the *Integrated Transport Strategy* to ensure that land use and transport planning is well aligned.

4.3 Primary Strategy

LU1 - Finalise the Sub Regional Planning Strategy in partnership with other Councils and the State Government.

The following subsections outline the likely steps required and issues to be considered in delivering the Primary Land Use Strategy.

4.3.1 The Land Use – Transport Integration Concept

As stated above, the primary objective of the combined Land Use Strategies is to achieve better integration between land uses and public transport. The integration of land use and public transport refers to the planning of areas for purposes such as residential, commercial and industrial, and how these land uses are mixed, to promote greater use of public transport, walking and cycling.

There are typically two different land use methods for encouraging greater alternative transport modes to the car. These are density and land use mixture. In regard to density, higher residential and employment densities increase population in the area, which, if properly located, allow a greater number of people to live within close proximity to a public transport node, such as a rail station or a high quality bus station. As shown in **Map 3 in Appendix A**, there is currently little correlation between residential density and high frequency public transport routes. If a greater intensity of development is created around public transport nodes, it is likely that more people will be encouraged to use public transport. Higher densities in residential areas would also reduce land consumption and associated infrastructure costs, such as roads.

In regard to land use mixture, historically different types of land use (residential, commercial and industrial for example) have been separated into different areas of the city. This created large distances between residential and employment areas, leaving parts of the city highly inaccessible by either public transport, walking or cycling, and providing commuters with little other choice than to drive.

Recent urban development trends have seen a reversal of traditional land use zoning, with a greater mixture of residential, commercial and employment areas located nearby each other. Local employment is encouraged through a greater mixture of land uses, meaning that destinations are closer together, thus reducing travel distances and making journeys by public transport more viable.

4.3.2 Implementation Process

This strategy will be implemented as part of the Metropolitan Strategy sub-regional planning process, which is currently underway. As this process is outside of the *Integrated Transport Strategy*, no further comment on the process is provided in this report.

However, the Land Use Strategies outlined in this *Integrated Transport Strategy* will inform both Councils' input into the sub-regional planning process. In this way, the

Councils can promote a sub-regional plan that provides integrated land use-transport outcomes.

4.3.3 Indicative Integrated Land Use Plan

An outline of a possible future regional integrated land use-transport structure is presented in **Map 6 in Appendix A**. The map shows future development areas and a hierarchy of centres that, once confirmed by the Metropolitan Strategy sub-regional planning process, can be used by each Council in strategic planning and development control. This map is provided to help inform future discussions and should be considered preliminary, to be confirmed after further consultation with key stakeholders and development of planning strategies.

4.3.4 Stakeholders, Resources and Costs

The Department of Planning is steering the process of sub regional planning. Campbelltown and Camden Councils will be key stakeholders and partners in this process. Other stakeholders will be defined throughout the process.

At this stage, it is understood that there will be no additional costs to Council as actions arising from the Metropolitan Strategy sub-regional planning process will be incorporated in periodic reviews to strategic planning within each local government area.

4.4 Secondary Strategies

LU7 - Encourage greater employment within the region through appropriate zoning and promotion.

Strategy Description

Greater employment within the Campbelltown and Camden can be encouraged with land use zoning and different forms of promotion. This would reduce the need to travel long distances to other parts of Sydney for employment, and thus reduce travel distances and time travelled. Employment should be clustered in areas that can be easily accessed by the public transport network to enable access by a range of modes. Employment types should be matched to the current and future expected skills and industries of local residents if possible. This strategy would build upon work currently underway by MACROC and member Councils.

Outline of Processes

The following steps are recommended to implement this strategy:

1. Identify existing employee numbers, employment areas, industries and trends in the region
2. Identify potential future employment areas, industries and trends in the region, in consultation with business groups and State Government
3. Assess transport opportunities proximate to existing and potential future employment areas
4. Set targets for future employment levels in the region, with consideration given to existing plans including the Metropolitan Strategy
5. Implement appropriate zoning and development control changes
6. Identify other services and facilities required to support current and future employment areas
7. Work to create a favourable environment for high employment generating businesses to establish in the region. Potential steps could include establishing local industry groups, identifying strategic advantages and opportunities in the region, and working with developers to construct, market and deliver intensified or new business precincts.
8. Monitor and review progress toward greater employment in the region through review of Census employment and travel data, consultation with local industry groups and unemployment data.

Stakeholders, Resources and Costs

Strategic planning staff within Campbelltown and Camden Councils would implement this strategy. The Councils should consult regularly with local businesses and industry groups to understand current and future issues and trends with a view to encouraging shorter trips to work and greater public transport use.

It is expected that in the initial stages, tasks would be able to be completed within existing budgets and organisational structures. Beyond Step 4 (above), additional staff resources or budget allocation may be required, depending on the actions required.

Performance Measures

Performance measures will relate to the number of jobs available within each Local Government Area, the average travel distance of local residents to work, and the percentage of jobs accessible to high quality public transport services.

LU8 - Conduct precinct master planning around public transport interchanges to encourage transit use, promote economic activity and improve amenity.

Strategy Description

Land uses around rail stations currently fail to capitalise on the high level of accessibility offered by public transport services. Additionally, some rail stations (and major bus stops) currently present a poor environment in which passengers can feel unsafe. Master planning may therefore help to plan for redevelopment in a coordinated manner that takes advantage of the high level of accessibility offered by the public transport interchange. Quality public spaces, higher densities, mixed land use and encouraging activity throughout the day and evening will help to make these locations become the focus of the local area while providing a more attractive and safer environment. Integrated interchange planning also needs to be conducted to provide for a range of competing needs at stations, including buses, taxis, kiss and ride, commuter parking, and walking and cycling.

Outline of Processes

The following steps are recommended to implement this strategy:

1. Consider establishing a hierarchy of users: (1) Pedestrians, (2) Cyclists, (3) Public Transport users, (4) Kiss and Ride, (5) Park and Ride
2. Determine desired standards for safety, amenity, activity and transport operations around public transport nodes
3. Undertake audits to assess whether each interchange meets the identified standards
4. Consult the community and transport stakeholders around each public transport node about current issues and desired improvements
5. Conduct master planning around each public transport node to achieve desired levels of safety, amenity, activity and transport operations
6. Implement master planning recommendations, potentially through revisions to Local Environmental Plans, Development Control Plans, town centre policies or memorandums of understanding with stakeholder groups

Stakeholders, Resources and Costs

Strategic planning staff within Campbelltown and Camden Councils could implement this strategy. If required, consultants could be commissioned to undertake Steps 1-5 above. Key stakeholders include the transport operators using the interchange and local communities (residents, businesses and other organisations).

Costs will be dependant upon the availability of skills and resources within each Council to undertake the master plans. If consultants are required for Steps 1-5, it is

expected that costs would be in the order of $30,000 to $50,000 for major nodes and $10,000 to $20,000 for minor interchanges. Revisions to Council policies would be undertaken internally within each Council.

Performance Measures

This strategy can be measured by the completion of the audit described in Step 3 and the completion of the master planning described in Step 5. A longer term performance measure could be obtained through surveys of stakeholder satisfaction.

LU9 - Investigate existing accessibility to public transport and services to identify suitable areas for Transit Oriented Development (TOD).

Strategy Description

Through analysis of existing transport and land use characteristics, it is possible to ascertain the areas that have greater accessibility to a range of public transport services and therefore may be suitable for Transit Oriented Development (clustering higher densities and a range of land uses around public transport). Redevelopment of these areas would help to encourage travel by public transport rather that car, while reducing the land take of the built-up urban area.

Outline of Processes

The following steps are recommended to achieve this strategy:

1. Investigate existing accessibility to public transport and services. Current methods include analysis of demographic and transport data and/or the use of GIS technology for more sophisticated accessibility mapping
2. Identify areas that are determined to be highly accessible and confirm other key features of public transport quality, including peak and off-peak service frequency and span of service (hours per day), as well as accessibility to local and major centres
3. Identify and investigate the potential for increasing intensity of development in identified high accessibility areas
4. Investigate the potential to introduce a greater mix of land uses within high accessibility corridors, such as employment, commercial and recreational destinations
5. Assess the viability of establishing transit oriented neighbourhood centres within high accessibility corridors
6. Revise Local Environmental Plans and Development Control Plans as appropriate

Stakeholders, Resources and Costs

Strategic planning staff within Campbelltown and Camden Councils could implement this strategy. If required, consultants could be commissioned for Steps 1-2 above. Consultations should be held with relevant transport operators and authorities, such as RailCorp, bus operators and the Ministry of Transport to confirm the future status of public transport services in key corridors.

It is likely that Council staff could undertake this strategy and as a result costs to Council would be minimal. If consultants are required for Steps 1-2, it is expected that

costs would be in the order of $50,000 for the Campbelltown and Camden local government areas.

Performance Measures

The successful implementation of this strategy can be measured by demonstrating the increased percentage of residents and employees within high accessibility locations.

LU10 - Establish cooperative arrangements between local Councils and the Department of Planning for planning, funding and prioritising infrastructure improvements, particularly for the South West Growth Centre.

Strategy Description

It is proposed to set up a working group or committee to address and oversee the planning, funding and prioritisation of infrastructure improvements for the South West Growth Centre and other areas in the region. This group or committee would need to include various state government representatives and each Council, covering a wide spectrum of disciplines (from urban to transport and environmental planning), and those responsible for the provision of social services such as schools and medical facilities. This group or committee may be a formalisation of existing consultative arrangements between Councils and the key stakeholders. It would give stakeholders a regular forum to address any issues or concerns relating to future land use and infrastructure changes.

Outline of Processes

The following steps are recommended to implement this strategy:

1. Identification of interested parties
2. Campbelltown and Camden Councils to approach interested parties
3. Coordination of interested parties to arrange regular meetings
4. Establishment of working party goals and objectives
5. Ongoing assessment of goals and objectives

Stakeholders, Resources and Costs

Campbelltown and Camden Councils should initiate this process. Close consultation would be required with the Metro Strategy Team in the Department of Planning and the Growth Centres Commission. Other stakeholders would be defined by the Councils but may include the RTA, RailCorp, Ministry of Transport, Department of Health, Department of Education, Department of Planning, and Liverpool City Council.

Internal resources within each Council could implement this strategy and no additional significant costs would be expected.

Performance Measures

The primary performance measure for this strategy is the establishment of a working party by a specific date. Secondary performance measures need to be based around the objectives of the working party. Goals would need to be defined and then subsequently be assessed as to whether they are being met or not.

LU11 - Provide input into Regional and Sub Regional Planning Strategies to: (1) locate new land releases around the Quality Public Transport Network; and (2) reserve necessary public transport corridors prior to land releases.

Strategy Description

Planning strategies need to incorporate both transport and urban planning as one entity, rather than as two separate disciplines. If necessary, planning strategies need to be amended so that new land use areas are identified in *conjunction* with corridors forming the Quality Public Transport Network, preferably not before or after one or the other has already been planned. In order to best utilise land use opportunities and reduce the dependence on car use, public transport corridors should be reserved prior to release of surrounding land, which will provide the best potential for high quality public transport bus and rail services in the future.

Outline of Processes

The following steps are recommended to implement this strategy:

1. Confirmation of the Quality Public Transport Network (see Primary Public Transport Strategy PT1)
2. Identification of Regional and Sub Regional planning strategies that deal with the location of new land releases
3. Identification of future mode split targets
4. Development of collaborative plans that locate new land releases around the Regional Transport Network that encourage alternative travel modes to the car
5. Reservation of land around the Regional Transport Network for future release

Stakeholders, Resources and Costs

Campbelltown and Camden Councils will initiate this strategy in consultation with State Government Stakeholders including the Department of Planning, Growth Centres Commission, the RTA, Ministry of Transport and RailCorp.

Internal resources within each Council could implement this strategy and no additional significant costs would be expected.

Performance Measures

Performance measures need to be based around the level of integration between the Regional Transport Network and future land release areas. For example, a goal for residences within a certain distance from a bus or rail stop may be used.

4.5 Tertiary Strategies

LU2 - Ensure areas of higher density housing are served by the Quality Public Transport Network, and that areas along the Quality Public Transport Network are zoned for higher density and mixed uses where appropriate.

Strategy Description

This recommendation would aim to improve overall accessibility by locating higher density residential areas and commercial areas around the existing or proposed Quality Public Transport Network. This includes the existing rail line, the proposed South West Rail Link to Leppington and high quality bus corridors. Implementation of this recommendation will potentially result in the reduction of car-based travel as more trips can be undertaken by public transport, walking and cycling.

Stakeholders

Stakeholders include Campbelltown and Camden Councils, the Department of Planning, and the Ministry of Transport.

LU3 - Plan for a minimum of 15 dwellings / hectare in residential zones where appropriate.

Strategy Description

The NSW State Government has suggested that new residential areas should be designed to accommodate a minimum of 15 dwellings per hectare[2], which is a higher density than typical suburban development. This would be achieved through a mix of apartments, townhouses and detached houses. By achieving this recommendation, a higher percentage of residents in an area can be served by public transport, public transport services can run more frequently and potentially higher rates of public transport use will result. This recommendation may not be appropriate in all areas, particularly in areas with heritage items or environmental sensitivity.

Stakeholders

The Campbelltown and Camden Councils will be responsible for this strategy. During the investigation and rezoning process, consultation is recommended with the Department of Planning, Ministry of Transport and RailCorp and local communities.

[2] *DRAFT State Environmental Planning Policy No 66 — Integration of land use and transport*, available online: http://www.planning.nsw.gov.au/plansforaction/transport_planning.asp

LU4 - Consider the potential for a mix of land uses (such as small shops and home businesses) in appropriate locations within residential areas.

Strategy Description

Greater flexibility in land use zoning may allow for a greater mix of land uses within residential areas. For example, small shops in residential areas can help reduce car-based travel and can encourage walking and cycling to reach local services. Home businesses can reduce the need for travel at peak times. This may only be appropriate for certain areas and for certain business types in order to protect residential amenity.

Stakeholders

Campbelltown and Camden Councils would implement this strategy through revisions to Local Environmental Plans in consultation with local communities.

LU5 - Require consideration of public transport services, routes and access to stops when planning new development and redevelopment.

Strategy Description

It is important that new developments are located in areas that are accessible to the public transport network to ensure that future residents, workers and visitors can travel to the site without being dependent on a private vehicle. This will potentially reduce the level of congestion on the road network and support the viability of public transport services.

Stakeholders

Campbelltown and Camden Councils would implement this strategy through revisions (if necessary) to development control plans and application of this process in development assessment.

LU6 - Require major trip generators to locate near established or planned Quality Public Transport Network with orientation towards the transit stop.

Strategy Description

If major trip generators are based near established or planned Quality Public Transport Network, then employees, residents and visitors will have improved options for travelling by public transport, reducing the need to travel by car. Furthermore, the site design of major developments should be oriented towards the public transport facilities so that commuters can easily and safely walk between the stop and their destination.

Stakeholders

Campbelltown and Camden Councils would implement this strategy through revisions (if necessary) to development control plans and application of this process in major development assessment in consultation with the RTA, Department of Planning and major trip generators.

5. Road Network

5.1 Objective

The key objective of the combined Road Network Strategies is to effectively cater for a variety of trip purposes while managing the impacts of roads on the community.

The Strategies promote management of the road network to provide maximum value to the different land uses and activities within Camden and Campbelltown. Examples of this include: facilitating the efficient movement of road freight to and from industrial areas, ensuring fast and reliable bus access to urban centres and providing passage to regional through-traffic in such a way that minimises impacts on local networks and land uses.

The strategy would ensure the road network provides safe and effective access by the full range of road users, including public transport, pedestrians and cyclists, private vehicles, freight and service vehicles.

This would include the separation of local and regional trips, where possible, so local roads serve local trips, while higher capacity roads serve regional travel. It may also involve limiting the speed and capacity of roads through sensitive areas such as town centres and residential areas. Travel Demand Management may be employed to reduce car travel to employment destinations.

5.2 Approach

The provision and management of the road network in Campbelltown and Camden will be undertaken in such a way that it:

- Provides an integrated approach to road network planning and management across the various categories of roads such as local, regional, state and national roads.
- Recognises the different roles that various roads perform and provides specific controls or objectives for each type of road environment.
- Understands the function of roads can vary along their length according to movement and access functions, and therefore objectives and tools for management should also vary.
- Manages the competing demands for access to the road network, from pedestrians, cyclists, public transport services, commercial trips and personal trips, which can be local, sub-regional or regional in nature.
- Where possible, segregates user classes across the road hierarchy, which will generally aid in maintaining the efficiency and safety of the road environment for all users.
- Provides a structured approach to road network development that recognises the changing role many roads within Campbelltown and Camden will play, as the area becomes increasingly urbanised.

In order to achieve these goals, it is recommended that Camden and Campbelltown Councils develop an integrated road network strategy that will ensure important roads throughout the region are developed and managed in a way that achieves the approach outlined above.

5.3 Background

The approach to this strategy was developed based on the following background information:

Providing for significant land use changes within the region

Perhaps more than any other sub-region in Sydney, the Campbelltown and Camden area is seeing significant changes in land use that will affect the demand for transport, especially road transport.

To the north, the opening of the M7 motorway has stimulated a large new industrial area along the M7 corridor. This zone will provide an important logistics centre for western Sydney and an increasingly important employment area. Both of these roles will see increased movement from the Campbelltown and Camden area towards the M7 zone.

Additionally, the South West Growth Centre is providing for over 100,000 dwellings of which a significant portion is in the Camden LGA. This development will have significant travel impacts across the sub-region, including the Campbelltown, Camden and Liverpool local government areas. While a mix of travel options is to be provided, including public transport, the demand for road capacity will require significant road upgrades.

Protecting the regional role of arterial roads

There are three main north-south routes within the Campbelltown and Camden area. These are the Hume Highway (F5), Campbelltown Road and Camden Valley Way. In the future, as the South West Growth Centre develops, The Northern Road (Metroad 9) will also become increasingly significant. Narellan Road provides an important east-west link between Narellan and Campbelltown.

These routes provide significant regional movement opportunities between major centres and to Sydney's Orbital Freeway network. They operate in a variety of environments from highways through town centres to grade separated freeways.

The role of safe arterial roads and efficient regional routes is vital to attracting and retaining business to the region. As such, access should be restricted to key intersections and local or property access should be avoided where possible. This approach will help maintain the high speed environment of roads (80-110 km/h) in non-urban sections.

In urban areas with an existing increased property access role, it is appropriate to slow traffic to match the surrounding land use environment. This would result in speed restrictions of approximately 40-50 km/h in high activity centres. A range of tools can be introduced to slow traffic in urban centres, including narrowed lanes, reduced

number of lanes, gateway treatments, provision for kerbside parking, frequent intersections as well as speed enforcement strategies.

East-west connectivity

A key issue for the Campbelltown and Camden area is the availability and quality of east-west road connections. At present, the major traffic movement is carried along Narellan Road, which provides the most direct link between Camden and Campbelltown. A limited number of roads currently with more minor roles, such as Raby Road and Denham Court Road, provide parallel routes.

As the South West Growth Centre develops, demand for access to regional facilities and employment in the Campbelltown LGA will grow. The limited capacity of east-west connections is likely to lead to congestion, resulting in problems for local access along these routes.

The RTA has included a number of east-west links within the South West Growth Centre boundary including Narellan Road, Badgally Road, Raby Road and Denham Court Road. Camden Council has also investigated an additional corridor, the Spring Farm Link Road. Although a previous assessment[3] has suggested that this new road is difficult to justify as an arterial road in the foreseeable future, it was recommended that the road corridor should be reserved in case development projections are exceeded. It should be noted that this previous assessment was undertaken prior to the commencement of planning for the South West Growth Centre, which significantly increases population projections in the Camden LGA.

Provision for pedestrians, cyclists and public transport

There is now a greater recognition in the community that roads are transport corridors that must provide for a range of uses in addition to private vehicle traffic. Prioritisation of infrastructure for pedestrians, cyclists and public transport is required for a range of reasons including providing for greater equity, lower environmental impacts and creation of sustainable and attractive neighbourhoods.

As roads are upgraded within the Campbelltown and Camden area, and as traffic growth leads to congestion, the need for alternative facilities for pedestrians, cyclists and public transport will become even more pressing.

Campbelltown and Camden Councils should continue to work with the RTA to achieve a more attractive, efficient and safe environment for pedestrians and cyclists. The two Councils also have an important role to work with the RTA, Ministry of Transport and bus companies to lobby for and provide bus priority on key routes, in order to promote increased public transport patronage and minimise car use. Campbelltown and Camden Councils are advocates for the wider community to ensure that high quality facilities are provided across the area as opportunities arise.

[3] *Spring Farm Link Road Feasibility and Traffic Report Route Feasibility Study,* Maunsell McIntyre, 1999.

Maintaining safety and amenity on local roads

The traditional role for local government with respect to road transport has been in relation to local roads. This role is a vitally important part of the integrated transport approach.

On local roads, the key objective will be the ability to provide for local accessibility while maintaining a safe and attractive urban environment. This is achieved through a variety of approaches including adequate network planning, maintenance and where required, traffic calming.

5.4 Primary Strategy

R1 - Revise the existing road hierarchy to incorporate consideration of integrated transport and land use objectives, in order to assist with network planning and development control.

The following subsections outline the likely steps required and issues to be considered in delivering the Road Network Strategy.

5.4.1 The Integrated Road Corridor Hierarchy Concept

Existing functional road hierarchies

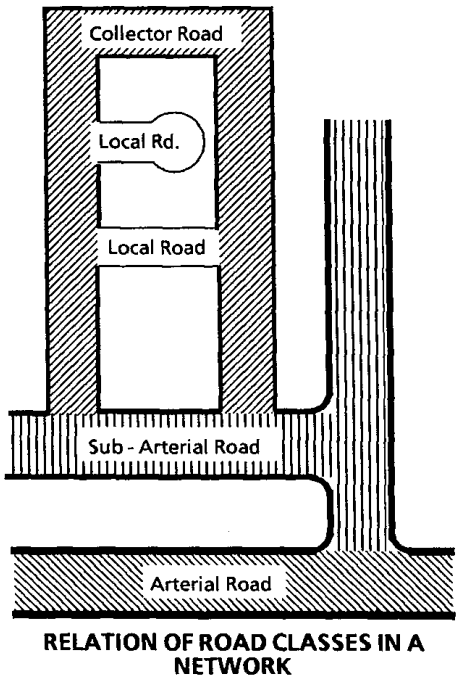
In NSW, the RTA[4] has categorised roads into a functional hierarchy that includes the following classifications:

- Arterial roads (inclusive of freeways) – predominantly carry through traffic from one region to another forming principal avenues of communication for urban traffic movements.
- Sub-arterial roads – connect the arterial road to areas of development or carry traffic directly from one part of a region to another. They may also relieve traffic on arterial roads in some circumstances;
- Collector roads – connect the sub-arterial roads to the local road system in developed areas; and
- Local roads – the sub-divisional roads within a particular developed area. These are used solely as local access roads.

This functional hierarchy is illustrated in Figure 1.

[4] Road Design Guide, Roads and Traffic Authority, 1991.

Figure 1 Functional Classification of Roads



Source: Road Design Guide, Roads and Traffic Authority, 1991

In general, higher order roads (such as arterials) are deemed to have a predominant "traffic function" while local roads have a predominant "access function". A third category, "Intermediate function", represents roads that theoretically provide a balance between traffic and access functions.

These arrangements have lead to criticism on a number of fronts, but significantly it has been argued that the needs of motor traffic have dominated the planning, design and management of roads at the expense of other user groups[5]. As an example, clearways on arterial roads accommodate the traffic function of these higher order roads, while provision for cycle lanes, pedestrian crossings and local shop parking may be removed or restricted in the interest of network efficiency.

Another problem with this linear approach is that it is assumed that as a road's function becomes increasingly associated with a traffic function, the access function will decrease. In reality, the existing land uses will largely remain and the continued access function can cause road safety and capacity issues.

Existing administrative hierarchies

Additionally, it should be noted that another form of classification of roads is defined according to the funding source or administrative body. This classification system provides for:

[5] Brindle, R. E., 1996. *Road Hierarchy and Functional Classification*, in K Ogden & S Taylor (Eds.). *Traffic Engineering and Management, Institute of Transport Studies,* Monash University, Melbourne.

- Local roads, usually local and collector level roads in the functional hierarchy, which are controlled and funded by Local Government and;
- Regional roads, usually sub-arterial roads in the functional hierarchy, which are controlled by Local Government but equally funded by Local and State Government, and;
- State roads, usually freeways and arterial roads in the functional hierarchy, which are controlled and funded by State Government (note this classification also includes National Highways, funded by the Federal Government).

It should be noted that administrative classifications for major roads in the region are currently being reviewed by RTA in partnership with Campbelltown and Camden Councils.

An integrated corridor approach

An alternative approach to the traditional functional road hierarchy has been suggested by Prof. Hans Westerman[6]. A two dimensional approach to hierarchies is proposed:

- The transport-access function is categorised as:
  - Type 1 – Transport function dominant;
  - Type 2 – Mixed transport and land use environment functions; or
  - Type 3 – Environment function dominant; and
- A land use access environment, which can be categorised as:
  - Type A – pedestrian environment;
  - Type B – vehicle access; or
  - Type C – limited access.

This classification system is illustrated in **Table 6**.

Table 6 Integrated Corridor Classifications

	Dominant Function		
Access Environment	Transport (Type 1)	Mixed (Type 2)	Environment (Type 3)
Pedestrian Env't (Type A)	-	2A	3A
Vehicle Access (Type B)	1B	2B	3B
Limited Access (Type C)	1C	2C	-

Type 1A and Type 3C corridor types would generally not be found in typical road environments and thus are not shown above.[7]

[6] Westerman, H. L., 1998. *Cities for Tomorrow – Integrated Land Use, Transport and the Environment*, Austroads.

[7] For example, Type 1A corridors are not typically found as higher order Type 1 roads by definition carry a high volume of vehicles, precluding a pedestrian-dominated environment. Similarly, Type 3C corridors are

(Footnote continued next page)

Type 1, Type 2 and Type 3 corridors can often be aligned with the more typical road classifications of arterial, sub-arterial and local roads, respectively.

There are a number of advantages to this approach:

- The road environment needs of pedestrian-focussed corridors versus vehicle-focussed corridors can be recognised and planned for;
- It provides a mechanism for road corridors that change their function during peak and non-peak periods or along their length;
- It provides an approach to classify and manage road environments in strong correlation with their surrounding land use environment; and
- Critically, it provides a transparent approach for management of “Intermediate” or Type II roads where competing demands for road space and function can otherwise lead to unbalanced management strategies that can be to the detriment of non-car users.

Once the road hierarchy has been redefined to align with the above classifications, Integrated Corridor Management Plans would be developed. These plans would outline an agreed approach to management of existing road corridors and adjacent land uses in a manner that will meet the long term objectives for the corridor. The Integrated Corridor Management Plan outlines the agreed role of the corridor and defines a number of performance criteria by which all future changes to the road and land use environments can be assessed. These can vary, but it is suggested they relate to:

1. Transport function
2. Transport growth and change
3. Transport space
4. Transport performance
5. Land use function
6. Redevelopment and change of use
7. Property and development
8. Land use performance
9. Streetscape management

The final outcome of this approach is that it can suggest when and where alternative routes should be investigated. This may be triggered by traffic volumes that exceed defined performance criteria for a corridor where a balance between the land use environment and the transport function is desired.

precluded as the lower order transport function complements local pedestrian and vehicle movements, rather than through movements with limited access.

5.4.2 Indicative Integrated Road Network Plan

In order to assist Camden and Campbelltown Councils' understanding of the application of the *Road Corridor Classification* concept (outlined above), we have developed an indicative *Integrated Road Network Plan*. This plan has been developed based on GHD's understanding of the study area as well as consultation with appropriate stakeholders (in this case the RTA and the Department of Planning).

It should be noted that this plan does not aim to define a revised road hierarchy, but instead provides an indication of a hypothetical road network that provides for integrated corridor management. More detailed, targeted work would need to be undertaken with the RTA to develop the actual Integrated Road Network Plan.

The indicative Integrated Road Network Plan is provided below in **Map 7 in Appendix A** and an example of typical characteristics (existing or desired) are outlined in **Table 7**.

Table 7 Indicative Typical Characteristics of Corridor Classifications

	Type	1B	1C	2A	2B	2C	3A	3B
Transport Function	Functional Classification	Arterial	Arterial	Sub-arterial	Sub-arterial	Sub-arterial	Collector	Collector and Local
	Typical Modes	Cars, trucks, buses, cyclists	Cars, trucks	Cars, trucks, buses, cyclists, pedestrians	Cars, trucks, buses, cyclists,	Cars, trucks, buses,	Cars, buses, cyclists, pedestrians	Cars, buses, cyclists, pedestrians
	Design Speed	70-100 km/h	80-110 km/h	50 km/h	60 km/h	60-70 km/h	40 km/h	40-50 km/h
	AADT	>15,000	>15,000	5,000 - 20,000	5,000 - 20,000	5,000 - 20,000	<5,000	<5,000 Collector <2,000 Local
	Max. % HV	No restriction	No restriction	5%	8%	15%	None	None
	Degree of Saturation	<0.85	<0.85	<1.0	<1.0	<1.0	Not applicable	Not applicable
Road Design	Lanes (total)	4	4-6	4	4	4	2	2
	Cycleways	Shared path	Shared path or none	Cycle lane	Cycle lane / shared path	Shared path	Cycle lane / shared lane	Cycle lane / shared lane
	Footpaths	Shared path	Shared path	Both sides	Both sides	One side	Both sides	One side
	Cycle/Ped Crossings	Signals / grade separated	Grade separated	Signals, marked, refuge	Signals, refuge	Signals	Signals, marked, refuge	Marked, refuge
	Bus Priority	Where required	Not applicable	Where required	Where required	Where required	Not applicable	Not applicable
Friction and Impact	Frontage Land Use Generation	Limited vehicle	None	Pedestrian	Vehicle	None	Pedestrian	Vehicle
	Vehicular Property Access	Very limited	None	Very limited	Limited	None	Limited	All properties
	Road Access	Class 1, 2 roads	Class 1, 2 roads	Class 1, 2, 3 roads	Class 1, 2, 3 roads	Class 1, 2 roads	Class 2, 3 roads	Class 2, 3 roads
	Access Spacing	1 km	1 km	500 m	500 m	500 m	As required	As required
	On-street Parking	None	None	Yes, short stay	Preferably none	None	Yes, short stay	Yes, long stay

Note the table above is an indicative set of characteristics that may assist in classifying road corridors. This would be expanded when determining specific Integrated Corridor Management Plan objectives in consultation with key stakeholders.

5.4.3 Implementation Process

This subsection provides a *sketch* of a potential implementation process for the Primary Road Network Strategy.

Step 1 - Identify needs, issues and objectives

Consult with the RTA, other councils and if possible, selected stakeholder groups regarding the current problems resulting from traffic, frontage land uses and the conflicts between the two. Relate this investigation to other strategic documents such as the Metropolitan Strategy Sub-regional Plan, this *Integrated Transport Strategy*, and each Council's vision / social plan documents.

The objectives for future corridor management should also be defined at a high level. These objectives will inform future steps in the implementation process.

Step 2 - Understand future growth in land use and trips

Develop an understanding of and document the likely future growth in land use and transport movements within the sub-region. This should be agreed between key stakeholders including the Department of Planning, the RTA and other councils. The analysis of such future scenarios can be aided by computer simulation of land use-transport scenarios if available. It should be noted that both Camden and Campbelltown Councils have recently developed traffic models and undertaken scenario modelling.

Step 3 - Revise road hierarchy and agree on responsibilities

Complete the review of the existing regional road network in partnership with the RTA and other affected local councils. The outcome of this task will be to define the higher order road network into Type 1 or Type 2 corridors, and also on whether the movement / land use function relates best to Type A, B, or C.

The revised road hierarchy should also clearly define the role of each authority in managing the road-land use environment that affects each corridor.

Step 4 - Develop performance criteria

A range of performance criteria should be set to guide the ongoing management of road corridors for each classification. As outlined in the section above, this should relate to a range of transport and land use focussed measures that will define the target performance for the corridor similar to those proposed in **Table 7**.

Step 5 - Identify deficiencies

Application of the performance criteria to the road network will provide an understanding of the sections of the road network that are not performing to a desired standard. This step may require a range of existing likely future performance data that can be related to the agreed criteria.

As a second step, the future likely changes to each corridor can be analysed using current trends, growth forecasts and if available, computer simulation outputs. Future years of intervention can be identified.

Step 6 - Develop options and staged program for improvements

Following the identification of deficiencies, options will need to be developed to address these issues in a manner that is consistent with the overall road network strategy and associated performance criteria. Typically, these options would be

developed within the context of an Integrated Corridor Management Plan[8] and would be subject to input from the community and key stakeholders to ensure that all needs are identified and addressed. Options should be evaluated against the agreed performance criteria for that corridor and the potential impact on other related corridors, before a preferred solution is adopted for implementation.

Step 7 - Implement agreed improvements

Once adopted, the agreed improvements to the integrated road network should be implemented by the appropriate stakeholder. This may be a planning response (e.g. restrict future vehicle access to the corridor) or a physical infrastructure response (e.g. provide additional road capacity or traffic calming).

Step 8 - Monitor network performance against criteria

The performance of the road network against the agreed criteria should be regularly reviewed in order to assess the impact of changes in traffic volumes and land use changes. If deficiencies are noted, appropriate steps as outlined above should be taken to address the deficiency. It may also be appropriate at less regular intervals to reassess the road hierarchy and performance criteria. If this is undertaken, it should be at the agreement of all primary stakeholders and it should be in response to a change in conditions that needs to be addressed at the regional level.

5.4.4 Stakeholders, Resources and Costs

Campbelltown and Camden Councils are the primary stakeholders in this strategy. They will need to initiate the urban road network and hierarchy plan, and work with the key stakeholders.

The RTA is a key stakeholder that will be a partner in the development of this strategy. The success of the strategy relies on effective cooperation with the RTA as the owner and manager of state roads.

The Ministry of Transport and Department of Planning should also be given opportunity for comment at key stages of this plan to ensure continuity with other state government planning.

The community and other non-government stakeholders should also be consulted at the appropriate stages of the process. For example, when changes are proposed to a section of an existing road corridor.

At present, costs to implement this strategy are undefined. Initially, planning tasks can be undertaken by Council officers at minimal additional expense to Council. Once discussions are held with the RTA to confirm the process for implementation, additional tasks and related costs can be estimated.

[8] For further information on Integrated Corridor Management Plans, see Westerman, H. L., 1998. *Cities for Tomorrow – Integrated Land Use, Transport and the Environment*, Austroads.

5.5 Secondary Strategies

R2 - Create a plan for an ultimate future urban arterial road network in the region. The network should cater for trips within as well as those passing through the region. Provide performance measures for traffic conditions and processes for intervention.

Strategy Description

As the Campbelltown-Camden area further develops, increased pressure will be placed on the existing arterial road network. Additional and upgraded roads will be required to serve increased travel demand and new centres as they emerge. To this end, it is recommended that Councils engage with key stakeholders such as the RTA and Growth Centres Commission to provide an appropriate level of network capacity and density of arterial roads. This includes provision for the full range of the range of users of the road network, including car based local and regional trips, freight and commercial movements, public transport, walking and cycling. Performance measures such as Level of Service and traffic volumes would need to be defined and then continually monitored. Regular reviews of performance measures would also need to occur.

Outline of Processes

To achieve this strategy the following steps need to be taken:

1. Initial consultation with key stakeholders including the RTA and Growth Centres Commission to determine objectives and agree on a preferred approach
2. Identification of existing travel patterns in the Campbelltown and Camden region
3. Identification of future growth areas, key destinations and inter-regional trips
4. Review the existing arterial road network to determine deficiencies, inconsistencies and opportunities
5. Develop a future arterial road network plan that provides for all road users, including car trips, freight and commercial movements, public transport, walking and cycling
6. Establish implementation mechanisms such as timeframes (including project “trigger points”), responsibilities and funding opportunities
7. Implementation of the urban road network plan

Stakeholders, Resources and Costs

Campbelltown and Camden Councils will work closely with the RTA and Growth Centres Commission to implement this strategy. Other key stakeholders include the Ministry of Transport and Department of Planning. There would also be opportunities to consult with other non-government and community stakeholders throughout the process as appropriate.

This strategy will require internal resources from each Council from the with the Traffic Engineering and Strategic Planning departments. It will require ongoing consultation, development and lobbying in partnership with key stakeholders.

Performance Measures

Two levels of performance measures are appropriate to this strategy. The first is the implementation of the strategy steps as outlined above. The second is the measurement of transport objectives and performance measures as defined by Step 1 of the strategy process.

R6 - Work with major trip generators to encourage access by modes other than private vehicles (public transport, walking and cycling)

Strategy Description

A Workplace Travel Plan is one method of reducing car travel to employment destinations and other major trip generators. A Workplace Travel Plan involves assessing how employees or visitors travel and how they might travel by more sustainable modes. To assist in the reduction of car-based travel, major trip generators in the Campbelltown and Camden region need to be identified and encouraged to participate in a Workplace Travel Plan. Several incentives can be used to assist employees or visitors to reduce car-based travel. Some examples are free or subsidised public transport tickets, either in conjunction with one of the councils, the employer or the public transport provider and appropriate cycling and/or showering facilities if people want to cycle to work.

Outline of Processes

The following steps are recommended to implement this strategy:

1. Campbelltown and Camden Councils to identify and contact employers
2. Consult with employers and employees to assess travel requirements
3. Assess options and make recommendations for each employer to assist employees to reduce vehicle use
4. Monitor and review success of the program

Stakeholders, Resources and Costs

Campbelltown and Camden Councils are primary stakeholders who can implement this strategy. Council staff will be working in partnership with major employers involved in the Travel Demand Management Project as primary stakeholders. Public transport providers and agencies may be able to contribute to the program through information provision and marketing initiatives such as subsidised tickets. The Ministry of Transport may be able to take a support role through travel behaviour programs such as TravelSmart.

While Council can resource this task with internal staff, the time requirement is likely to be high and there is potential for an additional part-time or full-time position associated with this role. It is recommended, however, that a pilot program be established in the initial stages to gauge potential partners and measures of success before rolling out the program to a wide range of major trip generators.

Performance Measures

Performance measures relevant to this task are establishing the pilot program, and secondly implementing Travel Demand Management initiatives for a wide range of trip generators.

5.3 Tertiary Strategies

R3 - Maintain a current traffic model for assessment of major development and planning.

Strategy Description

Maintenance of a traffic model would allow the Campbelltown and Camden Councils to assess current and proposed developments in the region, and investigate how developments in different areas of the region would affect the transport network. This would assist in maintaining a strategic approach to transport management and expansion over the medium to long term. Each Council is currently developing a traffic model for this purpose, which would need to be regularly updated to maintain currency.

It is noted that the development and use of traffic models need to be undertaken carefully as incorrect assumptions or inputs and ill-considered application of outputs can bring significant negative impacts.

Stakeholders

This recommendation would be undertaken by Campbelltown and Camden Councils in partnership with the RTA and the Transport and Population Data Centre (part of the Department of Planning).

R4 - Manage the local road network to achieve local accessibility objectives balanced with amenity and environmental aims, with defined performance measures and processes for intervention.

Strategy Description

Local road networks need to be managed in such a way to achieve local accessibility objectives. The local road network must be robust enough to accommodate local traffic flows, but also support amenity and environmental aims, such as encouraging walking and cycling and limiting traffic impacts in residential areas. Performance measures would need to be defined and then monitored over time. Reviews of these performance measures would also need to occur at designated intervals. Some guidance can be given by the RTA's Guide to Traffic Generating Developments in terms of environmental capacity of local roads.

Stakeholders

Campbelltown and Camden Councils would undertake this recommendation, with some input from the RTA.

R5 - Review road design guidelines to ensure best practice with regard to provision for buses, pedestrians and cyclists.

Strategy Description

Road design guidelines need to be periodically reviewed and updated to ensure "best practice". Relevant information can be sourced from relevant guidelines published by the NSW Department of Planning, Austroads and other sources. This would aim to ensure provision for a variety of individual needs on roads for cars, trucks, pedestrians, cyclists and public transport.

Stakeholders

Campbelltown and Camden Councils would complete this strategy.

R7 - Revise Council travel policies to become a leader for local businesses in regard to Travel Demand Management. This could incorporate modifying car leaseback arrangements, using more fuel-efficient vehicles, promoting car pooling and access by public transport.

Strategy Description

Campbelltown and Camden Councils have an opportunity to become leaders in transport demand management in relation to local businesses by modifying employee travel to work patterns. Such initiatives could take many forms and are adaptable to cover increased public transport use (possibly through incentives), car-pooling, more fuel-efficient vehicles and modifying car leaseback arrangements. By promoting more sustainable travel options, Council employees can set an example for other employers in the area.

Stakeholders

Campbelltown and Camden Councils would initiate and complete this strategy internally.

6. Regional Parking Facilities

6.1 Objective

The primary objective for the combined Regional Parking Strategies is to develop a regional approach to parking management. This would recognise the competing demands for car parking and set out a framework to manage the use of parking for the benefit of the wider community. This would aim to stimulate activity in town centres by enabling short term parking for access to facilities and services, while providing for longer stay commuter and employee parking in appropriate locations such as dedicated facilities or outside of major centres.

6.2 Approach

The provision and management of parking in Campbelltown and Camden will be undertaken in such a way that:

- Understands and respects the local parking needs and balances them with the needs of the surrounding region.
- Recognises that as the intensity of development increases, it will not be possible to meet unrestrained parking demand in some parts of the study area.
- Reflects the strong potential for parking to be a travel demand management measure and an important part of a package of measures to improve overall accessibility, manage traffic levels and reduce transport impacts.
- Extracts the highest value out of parking facilities – especially if on public or council owned land. This includes:
  - Recognising that parking in the public domain is not an entitlement, but rather a resource to be distributed within the community
  - Removing hidden subsidies associated with “free” or discounted parking - i.e. more equity in transport/access
  - Recognising that the cost of parking is a useful tool for meeting the transport aims of the area
- Recognises the current evolution in the land use of Camden and Campbelltown (from rural to suburban and suburban to urban) and how this evolution will affect the communities’ expectations with respect to parking provision and management. For example, in rural and even suburban areas, the community has traditionally expected parking availability where and when desired. In more urban areas, however, there is an elevated expectation that parking will be restricted and could involve direct costs to users.

It will therefore be necessary for Camden and Campbelltown Councils to develop a regional parking framework (and associated controls) that will best achieve the transport and accessibility aspirations of the area.

6.2.1 Background

The approach to this strategy was developed based on the following background information.

Community Input

Consultation with various communities, from inner city to outer suburbs and rural cities and towns shows that some community members invariably raise lack of parking as a concern.

As noted in Working Paper 1, the Campbelltown and Camden communities offer no exception, and view parking availability as an important issue. Some members of the community felt that there is an insufficient supply of parking at major centres and train stations, affecting access to local facilities, services and regional public transport links.

Parking Demand

The nature of demand for parking is highly dependent on the location and mix of land uses in a particular area. For example, parking demand is usually highest in mixed use areas and at shopping centres, transport nodes and in employment areas. The parking duration for these land uses vary. Shopping trips require short-term parking (one to two hours duration), while parking at transport nodes and employment areas is typically for the duration of the workday. The presence of (all day) commuter parking is sometimes at the expense of higher turnover short stay parking.

Parking must therefore be sensitively located and managed. With these fluctuating demands for parking, a balanced approach is needed that incorporates both local accessibility to nearby shops and other services, whilst also catering for all-day commuter parking.

The Benefits and Costs of Parking

Increasing parking availability can be used as a tool to stimulate activity in centres by improving access to facilities and services. However, widespread car park construction would be costly, add to congestion on the road network and may be to the detriment of nearby centres. Therefore, a common approach is to increase the availability of parking spaces by encouraging greater turnover. This can be achieved by limiting the duration of parking (e.g. to 1-2 hours) or by charging a time-based fee, usually via parking meters.

Parking as Part of an Integrated Transport Strategy

A regional strategy focussing on the provision and management of parking facilities is necessary in the Campbelltown and Camden area to ensure that parking provision and management is linked to other regional level transport strategies.

Parking should be seen as one part of an integrated system to provide access to centres and services, in conjunction with travel by other modes such including public transport, walking and cycling. The impacts of parking and associated traffic generation should also be understood and managed.

Parking demand needs to be considered in the wider context of the region, the roads that provide access to potential parking facilities and the availability of alternatives such as public transport. Therefore, the parking provision will depend on the level of road access and the quality of alternative modes of access. For example, parking provision in major centres with good access to rail and bus services should provide a limited quantity of employee parking to encourage access by these modes. Commuter parking should be provided near train stations and possibly at high frequency bus stops where there is good accessibility to the arterial road network and where the commuter parking demand will not conflict with short term parking demand. Travellers should be provided with the right information to allow them to modify their travel patterns to take advantage of new parking options or alternative access modes.

In the medium to long term, a reduction in the availability of car parking will encourage the use of alternative modes, resulting in positive effects for the local and regional environment. However, in order to maintain accessibility, this option is only possible if implemented in conjunction with high quality public transport alternatives.

6.3 Primary Strategy

P1 - Create a regional parking plan that defines goals for parking provision and management. It should incorporate a parking structure plan, with a hierarchy of centres and users, and links to planning policies and development controls.

The following subsections outline the likely steps required and issues to be considered in delivering the Regional Parking Strategy. It is based on an approach recommended by Litman (2006)[9].

6.3.1 The Regional Parking Structure Plan Concept

As outlined above, the Regional Parking Strategy is based on developing a parking structure plan, with a hierarchy of centres and users.

Parking User Types

The different types of parking users are described in the table below, with graphical illustrations of the application of these to different locations provided later in Figure 2, Figure 3 and Figure 4.

Table 8 Parking User Types

User Type	Description
On-street, Short stay	**Location**: Public roads **Configuration**: On-street parking **Main Users**: Short term visitors **Limits**: Short stay, 15 mins to 2 hours **Control**: Enforcement, and / or time-based pricing (parking meters) **Ownership**: Public / Council
Commercial Parking	**Location**: Close to commercial areas, preferably in a location with good road access that will minimise traffic in the central area looking for parking. **Configuration**: At grade or multi-deck parking facilities. Should be configured to serve as a *shared* parking facility to serve surrounding land uses. **Main Users**: Medium term visitors (including shoppers) **Limits**: Short - medium stay, ½ hour to 6 hours. **Control**: Access control and/or time-based pricing. **Ownership**: Council (may be privately operated) / privately owned. **Comments**: While such facilities could be at-grade in the short term, ideally they will be incorporated into future development / re-development in such a way that provides high quality urban design

[9] For further information see the Victoria Transport Institute, available online: http://www.vtpi.org/

User Type	Description
	and traffic outcomes.
Commuter Parking (public transport)	**Location**: Up to 400 m from the train station, although preferably away from the central (commercial) area. In locations with good road access that will minimise impacts on surrounding land uses and transport networks. **Configuration**: At grade or multi-deck parking facilities. **Main Users**: Public transport passengers. **Limits**: Long stay, although some provision should be made for public transport users that are not commuters **Control**: Location of facility should discourage non-public transport users. Otherwise access to facilities could be linked to train passes or controlled through time-based pricing. **Ownership**: MOT, RailCorp or Council (may be privately operated). **Comments**: Given the long-stay nature of commuter parking, and where there is competition between commuter and commercial parking, it is appropriate that people using these facilities walk up to 400 m (five minute walk) to access them. User perceptions of safety, security and amenity should be considered in the design of the facility *and access to the facility*.
Local Employee Parking (people who park close to where they work)	**Location**: At the edge of the commercial area, in locations with good road access that will minimise impacts on surrounding land uses and transport networks. **Configuration**: At grade or multi-deck parking facilities. **Main Users**: Commuters who drive to work in the commercial area. **Limits**: Long stay, although some provision should be made for public transport users that arrive throughout the day when long stay parking may be full. **Control**: Location of facility should not displace short term commercial parking. Otherwise it may be appropriate to encourage parking turnover through time-based pricing. **Ownership**: Council (may be privately operated) / privately owned. **Comments**: Given the long-stay nature of employee parking, it is appropriate that people using these facilities walk up to 400 m (five minute walk) to access them. User perceptions of safety, security and amenity should be considered in the design of the facility and access to the facility.

Generic Parking Structure Plans

GHD has developed a set of generic Parking Structure Plans to cover the different locations in the Camden and Campbelltown area where parking planning and management is likely to be required. These are provided graphically on the following pages.

Legend to generic parking structure plans:

	Commercial area		Arterial road
	Commercial parking		Local road (with street parking)
	Employee parking		Major bus route
	Commuter parking (rail)		Minor bus route
	Commuter parking (bus)		Railway

Figure 2 Parking Structure Plan for Major Centre / Public Transport Hub

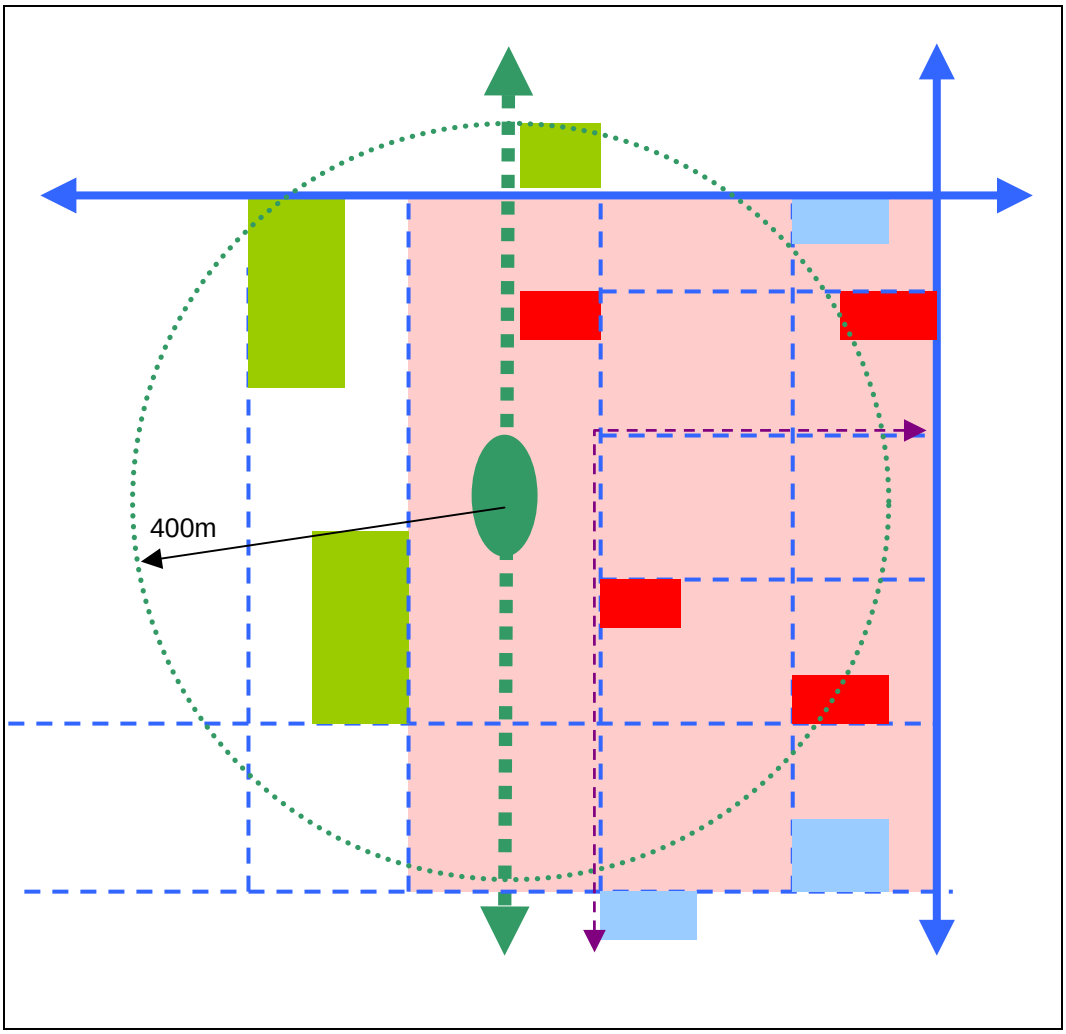


Figure 3 Parking Structure Plan for Town Centre / QPTN Corridor

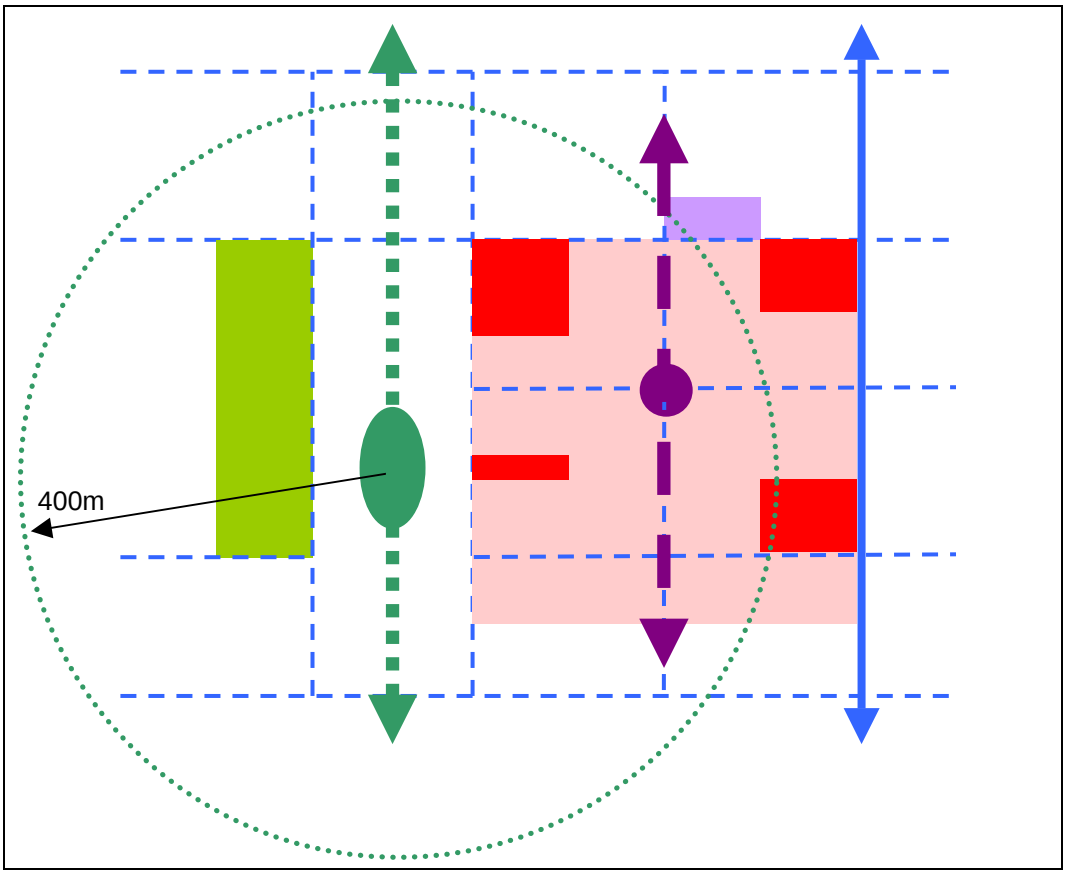
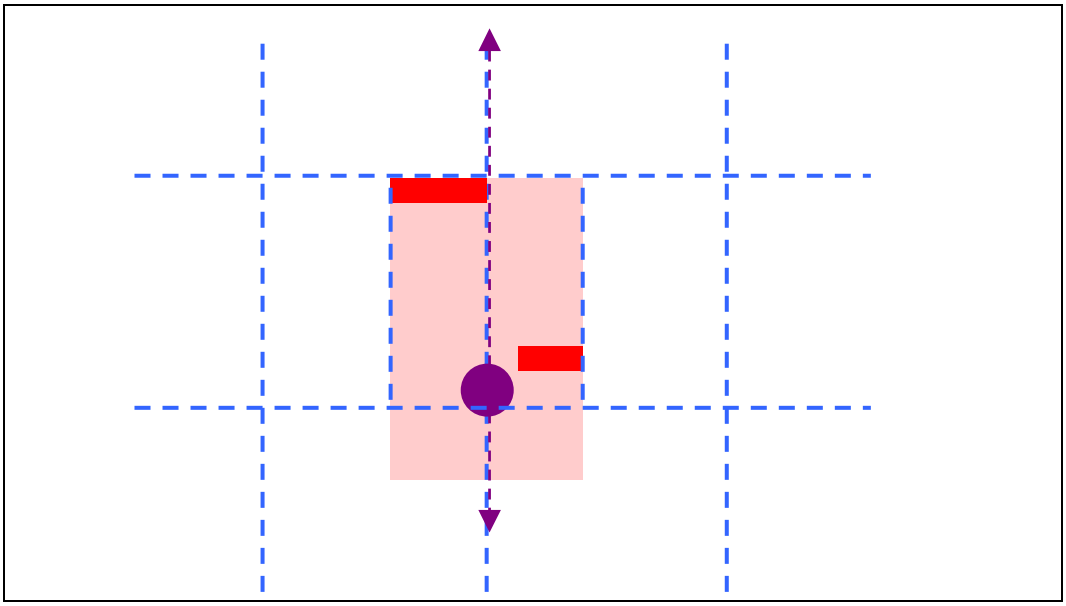


Figure 4 Parking Structure Plan for Neighbourhood Centre / Public Transport Route



6.3.2 Indicative Regional Parking Structure Plan

In order to assist Camden and Campbelltown Councils' understanding of the concept, we have developed an indicative plan of the Regional Parking Structure Plan. This plan has been developed based on GHD's understanding of the study area as well as consultation with appropriate stakeholders (in this case the RTA and the Department of Planning). More detailed, targeted work would need to be undertaken to develop the actual Regional Parking Structure Plan.

The indicative Regional Parking Structure Plan is provided in **Map 6 in Appendix A**.

The indicative Regional Parking Structure Plan identifies a number of opportunities for future park and ride facilities within the region. Town centre parking (inclusive of short stay, commercial and employee parking) should be considered at a more detailed level, as by various secondary strategies outlined in Sections 5.4 and 9 of this report.

A number of opportunities for new regional park and ride sites have been identified. These locations have been selected for the availability of land, proximity to the arterial road network and potential to serve future development areas. No investigation has been undertaken to ascertain the demand for these facilities nor the costs and benefits associated with them, which would be determined by future studies.

It is noted that while park and ride facilities can provide benefits for commuters, there are also a number of issues that need careful consideration in selecting and providing new park and ride sites. These issues include:

- Park and ride sites often occupy high value land that is located within close proximity to rail stations, which could otherwise be used for more valuable community or commercial purposes.
- The traffic generated by parking facilities can cause congestion on the local road network and a decrease in local amenity.
- Rail passengers who drive to local railway stations could perhaps otherwise be served by an efficient network of local buses, the viability of which is reduced by the commuter utilising free park and ride facilities.

Opportunities identified for regional park and ride facilities include:

- Glenfield – potential for a surface or multi-deck structure on land owned by RailCorp off Glenfield Road, recently purchased land from the State Govt for future development as a future park and ride site. Provides good accessibility to Camden Valley Way and Campbelltown Road via Glenfield Road and the future Edmondson Park development area. This station will also increase in importance following the construction of the South West Rail Link to Leppington.
- Leumeah – large existing surface parking area available off Plough Inn Road. This facility is not fully utilised, potentially due to a long perceived distance to the northern extremity of the car park. This could be overcome through amenity improvements (e.g. covered, lit walkways and improved security measures) or potential for multi-deck facilities adjacent to the station. This location has excellent access to Campbelltown Road and new development areas planned around Badgally Road and Turner Road. There may be further potential for shared parking

with existing major events located east of the railway station if arrangement can be reached with venues in this area.

- Campbelltown – potential for expansion of existing surface parking areas west of the station off Farrow Road. A multi-deck facility would not be advocated in this location as it would be expected that this land would be used for other uses as development intensifies in Campbelltown, as confirmed by the current Campbelltown Centres Study. In this context, expansion of commuter parking could be regarded as a short to medium term option, allowing a form of land banking for future development. Consistent with this approach and the generic approach to car parking outlined above, existing commuter parking spaces on the eastern side of the railway line could be considered for relocation to this lower value location west of Farrow Road.
- Macarthur – potential to provide a limited number of commuter parking spaces on the eastern side of the railway line and some potential to provide a new parking area on the western side of the railway line, depending on land ownership and future development plans. In each case, it is likely that surface parking areas would be available until such time as future development into more intensive land uses is warranted. It is understood that RailCorp is negotiating an agreement to share some car parking spaces with nearby developments including the Macarthur Square shopping centre. This station will become more important for commuter parking as rail services increase over time. It is important to integrate any future parking with the future bus rail interchange facility.
- Sites away from the railway line, such as Narellan and Camden – it is also considered that as the Quality Bus Network is implemented through bus services along the Strategic Bus Corridors, provision of park and ride sites within the Camden LGA would be advantageous. Such facilities could be located at various locations along nominated bus routes that provide fast, frequent services to major centres and interchange with the rail network. This would potentially lower the demand for car parking around existing rail stations and support patronage on the Strategic Bus Corridor services. If parking facilities were to be provided in centres such as Leppington and Narellan, they would be considered as temporary, surface parking areas for future intensification as the centre develops.

6.3.3 Implementation Process

This subsection provides a *sketch* of a potential implementation process for the Regional Parking Strategy.

Step 1: Define the Scope

The Regional Parking Strategy relates to the local government areas of Camden and Campbelltown. It focuses on on-street parking and the provision and management of larger scale parking areas that are provided by public authorities (such as the Councils, Ministry of Transport and RailCorp). It will specifically relate to the major centres and regional transit nodes (including rail and bus stops).

Step 2: Identification of Issues

As noted earlier, a majority of the problems cited by the community are related to parking conditions in the Campbelltown Local Government Area. This is likely to be the case due to a combination of factors, including a higher population, higher intensity land use, a greater availability of regional shopping and services, and the reliance on the Southern Railway for regional public transport.

Parking Consultants International completed a parking study for Campbelltown City Council in July 2000. While somewhat dated, many of the issues raised by the study are likely to remain as current problems.

Key issues raised by the study were:

- High level of occupancy of short and long stay parking in Campbelltown and Ingleburn, at approximately 90%;
- Reasonable turnover of short stay parking with an average stay of 2 hours. However, up to 50% of car park users staying longer than the signposted limit of 3 hours;
- The multi-storey RSL car park had a maximum occupancy of 59%, indicating significant spare capacity, potentially due to the fact that parking is charged on a time basis at this car park.

The need for greater enforcement of parking limits was evident in 2000, and this recommendation has been acted upon. Additionally, parking limits for short stay parking were generally reduced to 2 hours to aid turnover.

Another study, completed by G. Creber and Associates (December 2004), investigated the number of cars parked at rail stations within the Campbelltown local government area and their origin, by postcode. This study found that the most popular stations were located at:

- Campbelltown (1030 cars)
- Leumeah (938 cars)
- Minto (602 cars)
- Glenfield (477 cars)

Step 3: Understanding the Strategic Planning Context

The development of a parking strategy should be coordinated within a community's overall strategic vision and also placed in context with Council plans and policies. This helps to ensure that decisions at the strategic level reflect broader community objectives.

There is currently limited strategic direction in the area of Regional Parking, although a brief summary is provided below:

Campbelltown Vision 2025 - Looking Forward

One of the desired outcomes for transport is "*safe, convenient, affordable and environmentally sustainable transport network that maximises accessibility to business*

centres and other nodes of activity." This strategy identifies access to services as a key element of future goals. While car parking is not specifically mentioned, car parking constitutes part of the access system for users of private vehicles. Therefore the incorporation of parking strategy as one part of this community vision is appropriate.

Camden 2025: A Strategic Plan for Camden

One of the five main areas that the plan discusses is accessibility. This is defined as "*A Camden that provides convenient and equitable access to services, facilities and places...*" Accordingly, as with the Campbelltown plan, accessibility is a strong desire for the future. The provision of car parking is one of the elements in providing accessibility to services and facilities in the region.

Direct community consultation may also be advantageous to understand the community's overall vision for accessibility to local and regional centres through the adequate provision of car parking. It is amongst these documents and reflections of community objectives that the development of a parking strategy needs to be placed.

Step 4: Setting the Evaluation Framework

An important step in developing a parking strategy is to develop a comprehensive evaluation framework. This framework would provide the basis for analysing different parking locations and options (such as long term and short term parking or town centre parking opposed to lower intensity parking).

An evaluation framework should also ensure that critical impacts are not overlooked (such as access to parking locations do not result in additional congestion on certain roads) and that different situations are evaluated consistently throughout the Campbelltown and Camden region (based on local and regional demand for car parking spaces at specific locations).

Step 5: Determining Existing Demand and Supply

The next step in developing a parking strategy is to identify the existing demand and supply of parking provision in the Campbelltown and Camden region. This involves conducting a parking study to identify supply (the number of parking spaces available) and demand (the number of parking spaces occupied) in the region.

As mentioned previously, the Parking Consultants International report for the Campbelltown City Council in July 2000 is somewhat dated. A more recent study was completed in December 2004, although the scope of the study was limited as it only looked at commuter car parking for rail stations between Glenfield and Macarthur. It is understood that RailCorp is in the process of completing a parking study for rail commuter parking around stations between Glenfield and Macarthur on the Southern Rail Line.

There is scope for each Council to update their understanding of parking issues through completion of parking studies for key centres. Alternatively, this can be achieved through ensuring parking for various users is considered thoroughly in broader town centre studies. Such a study/studies should determine supply and

demand in each centre for each type of parking (on-street short stay, commercial, employee and commuter). Potential areas for study include:

- Key CBD or town centre areas;
- Smaller town centres in the region;
- Around major public transport nodes (bus and rail stations);
- Other major trip generators outside of key centres; and
- Any additional sites where parking issues have been noted.

With a more complete understanding of the supply and demand in the Campbelltown and Camden area through a parking study, the parking strategy can be better designed to accommodate the different needs of users at different locations during different periods of the day.

Step 6: Identification and Evaluation of Options

After conducting a study of parking supply and demand, the next stage to developing a parking strategy is to identify and evaluate options. This stage should include the development of a list of options and potential solutions, and then be evaluated with respect to the evaluation criteria. The evaluation criteria would potentially include costs, benefits and equity impacts when implementing or modifying car parking areas.

Issues to consider when identifying and evaluating options are:

- Moving long term parking away from high activity areas;
- Using short term parking to access local shops;
- Having short term parking no more than 2 hours to encourage more users;
- Improving parking restriction enforcement;
- Creating more user-pays parking areas; and
- Potential regional agreement on commuter parking between Campbelltown and Camden Councils.

Step 7: Community Consultation and Revision of Approach

Parking management is usually a highly contentious issue in the community and consultation with the public is a vital step in understanding existing issues and developing options for implementation.

It would therefore be recommended that Council undertakes a high profile consultation program, targeting different stakeholders including the local community, parking users, transport operators, and if relevant State Government agencies. The aim of the consultation would be to inform the stakeholders of the identified issues and the resulting preferred options for improvement, and to ascertain if any modifications to the preferred approach are required.

Following this consultation, it is likely that some modification to the preferred approach would be required and some reassessment of options may be necessary.

Step 8: Implementing the Strategy

Once the above steps have been followed, the next step is to develop a plan to implement the parking strategy.

In order to implement the parking strategy, various phasing or timing options may be used and even incorporate some contingency-based options. The parking strategy will need to detail which parts of the strategy will be implemented in the first year, within two years and over a longer period of time.

It is also recommended that some contingency-based options are included when determining the timing of different parts of the strategy. These options could be based on performance indicators, such as excessive parking congestion or spill over problems.

It is important to identify responsibilities for implementing various components of the strategy, recognising that the Councils have limited control over some parking options, particularly the construction of commuter parking facilities at rail stations.

6.3.4 Stakeholders, Resources and Costs

The Campbelltown and Camden Councils are the primary stakeholders in developing and implementing a regional parking strategy. In consultation with the other stakeholders, they would need to undertake (or commission consultants to undertake) the necessary a research, analysis and strategy development.

RailCorp controls many of the existing commuter car parks at rail stations as they are located on RailCorp land. For this reason, as well as the vested interest that RailCorp has in providing access to the CityRail system, it will be an important stakeholder.

The Ministry of Transport plays an important part in setting parking policy at public transport interchanges and also controls funds raised through the parking place levy. For these reasons, it will be an important stakeholder.

We also understand that the RTA is currently developing a regional policy for parking and as such should also be consulted during this process.

Local bus companies will also have a role to play in the co-ordination of rail feeder services with park and ride sites remote from the rail corridor, if adopted.

While this strategy emphasises the need for Councils to retain control of the provision and management of parking facilities within the commercial centres, such facilities could be established in partnership with private developers. For example, a developer could construct a public car parking facility for pubic use in the basement of a new development. It is also increasingly common for Councils to hand-over the operation of parking facilities to private operators.

In estimating potential costs for the above work, the following has been assumed:

- Steps 1-4 would be completed by the strategic planning and transport divisions of each Council, with a relatively low time requirement and thus no significant additional cost to Council;

- Steps 5-7 would most likely be undertaken by a consultant. The cost of this work would be highly dependent upon the number and size of centres to be assessed, however, it could be assumed that this work could be between $50,000 and $100,000, with the higher estimate including a significant consultation program; and
- The cost of Step 8 would be entirely dependent on the recommended strategies. Construction of new parking facilities could cost in the order of millions of dollars and a variety of funding sources could be available. Relatively minor changes such as changes to parking signs and line marking would be in the order of tens of thousands of dollars and would usually be funded by Council.

6.4 Secondary Strategies

P2 - Address the Park and Ride needs in view of the parking strategy and structure plan, including: (1) Consideration of the potential costs and benefits of additional park and ride at rail stations and major bus stops, and (2) Consideration of the potential for park and ride sites away from the rail line to be served by high quality bus routes.

Strategy Description

'Park and Ride' involves travelling by car to a railway station or major bus stop before undertaking the remainder of the trip by public transport. This type of parking is typically for the duration of the workday, thus occupying parking spaces for those who wish to use the train during the day. Investigations should be undertaken to determine the value and potential for Park and Ride sites both along the rail line and also at centralised locations away from the rail line that are served by high quality feeder bus routes. This would ease parking demand around rail stations and provide an opportunity to attract new public transport users through greater accessibility to stations.

It is noted that while park and ride facilities can provide benefits for commuters, there are also a number of issues that need careful consideration in selecting and providing new park and ride sites. These issues include:

- Park and ride sites often occupy high value land that is located within close proximity to rail stations, which could otherwise be used for more valuable community or commercial purposes.
- The traffic generated by parking facilities can cause congestion on the local road network and a decrease in local amenity.

Rail passengers who drive to local railway stations could perhaps otherwise be served by an efficient network of local buses, the viability of which is reduced by each commuter utilising free park and ride facilities.

Outline of Processes

The following steps are recommended to implement this strategy:

1. Identify existing Park and Ride locations
2. Establish the existing and future demand for Park and Ride facilities
3. Determine optimal location for future Park and Ride facilities (which may include relocation of existing sites and sites away from the rail corridor)
3. Analysis of costs and benefits for additional Park and Ride facilities
4. Implementation of recommendations, including sourcing of site planning, funding and construction.

Stakeholders, Resources and Costs

RailCorp is the primary stakeholder in this strategy. RailCorp is currently developing a commuter car parking strategy for rail stations between Glenfield and Macarthur and has recently been negotiating to provide additional car parking near stations into the future.

Campbelltown and Camden Councils have a strong interest in this issue and as such should be consulted as part of this strategy.

The Ministry of Transport and the RTA should also be consulted with regard to the planning of major park and ride sites so that impact on bus services and the road network can be assessed.

In terms of costs to Councils, investigations can be undertaken internally and significant costs are not anticipated. If the Councils were to take a more active role in the development of this strategy, a process of parking surveys and strategy development would be required, which could be expected to cost up to approximately $30,000 if consultants were to be engaged.

If new parking sites were developed, significant capital costs would be expected. For example, a typical cost of construction (excluding land costs) for multi-deck parking is in the order of $12,000 per car parking space.

Performance Measures

A performance measure for this strategy is the completion of the assessment of the Park and Ride options. Secondary measures can refer to specific parts of the assessment, such as impacts of new Park and Ride facilities or the potential use of bus feeder services.

P4 - Consider accessibility related maximum car parking requirements for new development, based on accessibility to public transport.

Strategy Description

Car parking requirements for new developments are typically based on satisfying peak demand with limited consideration of the potential for trips to be made by public transport. This premise often leads to many more car parking spaces being built than are required during normal conditions. Therefore, it is may be appropriate to consider requiring less car parking for new developments in areas with high accessibility to public transport.

Outline of Processes

The following steps are recommended to implement this strategy:

1. Identify areas of high accessibility to services and the Quality Public Transport Network (see Land Use Strategy 9)
2. Consult with other Councils to determine current practice regarding parking controls for new development in highly accessible areas
3. Assess the suitability of enacting similar changes to development controls in the area of interest
4. Revise Development Control Plans as required

Stakeholders, Resources and Costs

In this strategy the Campbelltown and Camden Councils are the primary stakeholders as they will investigate existing accessibility and determine the suitability of changes to parking controls.

The other Councils should be consulted to determine current practices in other areas of Sydney.

It is envisaged that council staff could undertake this strategy with minimal additional resources requirements. The costing for this strategy would be in the order of $30,000 to $50,000 if a consultancy was used, and could increase up to $100,000 with consultation.

Performance Measures

The performance measure for this strategy is the completion of Step 3 for all identified high accessibility areas.

6.5 Tertiary Strategies

P3 - In view of the Regional Parking Strategy, investigate and implement more intensive parking management (e.g. parking restrictions, pricing and enforcement) in high demand parking areas.

Strategy Description

Parking spaces within town centres are a limited resource that should be shared by the community. In some areas, more intensive parking management measures may be required to allow a number of visitors throughout the day to use a single parking space. This benefits residents, as they can more easily find a parking space, and businesses, who are provided with a bigger market for their services. More intensive parking management may include shorter parking limits (such as 1 or 2 hour parking), and associated enforcement by Council rangers. In large centres, the use of parking meters can be considered to further encourage turnover of parking spaces.

Stakeholders

Campbelltown and Camden Councils are responsible for on-street parking and some publicly owned off-street car parks. The RTA, RailCorp and owners of large privately owned car parks (such as shopping centres) are likely to be relevant stakeholders.

P5 - Consider the need for provision of additional short stay parking in commercial centres.

Strategy Description

It could be necessary to dedicate a higher proportion of existing parking to short term parking in some locations in the Campbelltown and Camden region. Alternatively, construction of additional short stay parking facilities may be warranted. Short-term parking, for use up to approximately 1-2 hours, would enable shoppers to access commercial areas, without encouraging all day parking. Provision of new short-term parking may be at the expense of existing long-term parking.

Stakeholders

Campbelltown and Camden Councils are responsible for implementing this recommendation. Consultants may be required to undertake parking surveys and analysis in order to determine the need for new or modified parking areas. Chambers of Commerce and major trip generators would be stakeholders in the sourcing of funds and arrangements to provide additional parking.

P6 - Revise development controls and contributions plans to collect funds for provision of additional parking, if required.

Strategy Description

The provision of new car parking areas can be very expensive in terms of land and construction cost. Therefore, if additional parking is deemed to be required, Councils may need to look to development contributions to help pay for new parking construction. The mechanisms for this can include developer contributions and assistance from the business community.

Stakeholders

Each Council would consult with the relevant Chambers of Commerce and major trip generators in determining appropriate contributions plans to fund additional parking.

P7 - Reduce demand for commuter parking by promoting and supporting bus feeder services.

Strategy Description

Bus feeder services provide improved access to rail stations and other centres. These bus services can help to reduce the demand for commuter parking at rail stations, which can free land in town centres for more valuable uses. In recognising the value of these services, Councils or other stakeholders can improve the competitiveness and attractiveness of bus services with a range of measures such as subsidies, service promotion and provision of new bus shelters.

Stakeholders

Campbelltown and Camden Councils, in conjunction with public transport providers, such as the bus and rail companies, are the stakeholders for this recommendation.

P8 - Investigate the potential for concept of public or shared parking in place of private parking, to accommodate shared parking for various land uses (e.g. daytime/ night time uses) through development control in town centres to maximise efficiency of parking use.

Strategy Description

Traditionally, development controls have favoured the provision of private car parking for each development, based on an average peak trip generation rate from RTA surveys. When viewed within the context of a local centre, this approach tends to provide an oversupply of fragmented parking areas with undesirable impacts on urban form and amenity.

An alternative approach is to provide a shared parking resource for use by visitors to a range of land uses within an area throughout the day. The benefit of this approach is that more efficient use is made of parking spaces as peak usage times for different land uses may not coincide. For example, during the day shoppers and employees may use shared parking spaces in town centres, but during the evening the parking spaces can be utilised by people dining out or going to the movies. This would result in less parking being required overall, leading to more efficient use of land and lower costs. Another benefit of this approach is that it would be possible for Council to manage parking provision and management in a centre over time. Council could choose to increase or decrease the number of parking spaces depending on the intensity of development, parking demand and alternative access by public transport.

Stakeholders

Campbelltown and Camden Councils would implement this strategy through revisions to development control plans and Section 94 contribution plans.

P9 - Consider developer agreements to provide more parking where appropriate in town centres.

Strategy Description

There is potential to enter into discussions with developers for the provision of additional public parking in town centres where required. This strategy would provide additional parking capacity for short term visitors with the potential for reduced cost to Council as compared to a new standalone parking area.

Stakeholders

This recommendation could be undertaken in partnership between Campbelltown and Camden Councils, the local Chambers of Commerce and major developers.

7. Public Transport

7.1 Objective

The primary objective for the combined Public Transport Strategies is to provide local residents with an accessible and efficient travel alternative to the car. This means improving the frequency, speed and reliability of buses and trains, through increased co-ordination, improved facilities and better priority. As an example, roads may be modified to include bus-only lanes. More attractive public transport will provide an alternative means of accessibility than the car, and thus can help to reduce the environmental and social impacts of car dependence.

7.2 Approach

The planning and operation of public transport in Campbelltown and Camden will be undertaken in such a way that:

- Recognises that many of the decisions relating to key public transport corridors and services are made by the State Government, thus Camden and Campbelltown Councils will often need to play a lobbying or support role.
- Understands the local public transport needs and balances and integrates them with the needs of the broader public transport networks.
- Focuses on the *users* of the public transport services, and plans and operates public transport to best serve the users.
- Recognises that as the intensity of development increases, it will be increasingly important to capture a higher proportion of trips on public transport in order to slow the rate of growth in general traffic and to manage congestion.
- Prioritises access by public transport over access by private vehicles and ensures that residents and visitors are not dependent on private vehicles for mobility. Campbelltown and Camden should be recognised as an area that can be accessed efficiently, safely and comfortably by public transport.
- Supports and is supported by the planning and design of land use and public domain. Quality pedestrian and cycling environments should be established around transit corridors and facilities.
- Reflects the strong potential of public transport as a travel demand management measure and an important part of a package of measures to improve overall accessibility, manage traffic levels and reduce transport impacts.
- Extracts the highest value out of public transport investments and funding. This includes:
  - Recognising that if planned and operated successfully, trips attracted to bus make a far more effective use of road space than trips made by private vehicles.

- Recognising that the benefits of public transport use extend to such 'externalities' as local and global environment, amenity, public health etc, that these benefits should be considered in assessment of projects.

- Recognises the current evolution in the land use of Camden and Campbelltown (from rural to suburban and suburban to urban) and how this evolution will affect the communities' expectations with respect to public transport. For example, in rural and even suburban areas, the community has traditionally been relatively dependant on private vehicles for the large proportion of their travel. In more urban areas, however, a higher proportion of trips can feasibly be made on public transport.
- Ensures that public transport running on the nominated *Quality Public Transport Corridors* will be immune from impacts and congestion caused by private vehicles.

7.2.1 Background

Existing Situation

Public transport in the Campbelltown-Camden Region currently consists of a rail line and a network of local bus services. However, as identified in Working Paper 1, public transport options in the region suffer from a poor image and consequently serve very little of the travel demand, resulting in private vehicles being the dominant transport mode in the region. In many parts of the study region, public transport does not provide a viable transport choice. Simultaneously, the urban area in the region is also expanding, and public transport networks need to adapt to meet the needs of these new suburbs.

The NSW Ministry of Transport is planning to establish several *Regional Bus Routes* in the Camden and Campbelltown area and has been working with local operators as part of the review of bus contracts in the South West.

Current Challenges

To implement an effective and efficient public transport strategy in existing areas is problematic. Residents in existing areas are less likely to change travel mode unless the potential benefits are made clear. Travel behaviour change will be hard to implement, as the majority of Campbelltown and Camden residents are accustomed to travelling by the car. Deterrents exist in the study area as local bus services suffer from problems such as road congestion, circuitous street networks, low densities and a lack of integration with the wider Sydney public transport network. As a result of these problems, certain routes are seen to provide an irregular and unreliable service, which results in low patronage levels. In recent times, the CityRail network has suffered from poor reliability, although there are programs in operation aimed at making the CityRail network more reliable. The lack of integrated ticketing between the rail and bus networks is another disincentive to public transport use in the region.

Integrated Land Use and Transport Planning

In order to inform regional and local planning, the public transport network needs to do more than solely adapt. Public transport planning and provision needs to be

undertaken in consultation and conjunction with planning policies and development controls. The outer areas of many urban areas suffer from poor public transport and other facilities because planning is often conducted in an incremental or piecemeal process. The benefits of an integrated land use and transport planning process with respect to new and redeveloping urban areas include:

- Co-location of key community facilities, shops and other trip attractors along bus routes and at central points where several services converge, making it easier to access local facilities for residents;
- Faster and more efficient bus routes, serving residential areas without undue deviations through outlying residential areas with limited through road connections; and
- Earlier introduction of public transport services, rather than relying on passenger demand to grow in the absence of an attractive service.

New transport services must also be planned in the context of an integrated transport network. This network would range from local 'feeder' bus services to public transport nodes, to direct, high quality and efficient bus corridors and heavy rail. A successfully integrated public transport network, incorporating bus and rail travel, would have minimal delays and costs associated with transferring from one mode or service to another.

7.3 Primary Strategy

PT1 - Define a Quality Public Transport Network to inform regional and local planning, with targets for service standards.

The following subsections outline the likely steps required and issues to be considered in delivering the primary Public Transport Strategy.

7.3.1 The *Quality Public Transport Network* (QPTN) Concept

Definition

The *Quality Public Transport Network* (QPTN) provides regional transport services regardless of mode, operating at high frequency across a majority of the day.

Purpose

The QPTN would provide management direction for both public transport and land use planning, ensuring that each takes into account the intrinsic economics and logic of the other.

Features

Key features of the QPTN are summarised below:

- *Policy frequency and span.* The QPTN should provide frequent services across the day from early in the morning to late at night.
- *High operating speed and reliability.* The QPTN should provide attractive service speeds and high levels of reliability. Where the QPTN operates on-street it should be largely immune from congestion and delays associated with general traffic.
- *Easy connections between lines.* Transferring in a transit network is as unavoidable as turning a corner when driving. The convenience of transfers will be maximized on the QPTN, through the high frequency of service and also through special attention to the physical facilities at transfer points.
- *Good legibility and usability.* The QPTN system will be easy to comprehend (at a macro / system level) and easy to navigate (at a micro / user level).
- *A structuring network of public transport routes.* The QPTN will be the backbone of the Camden / Campbelltown area's public transport network, carrying the vast majority of its passengers with the highest productivity and levels of service.
- *The network that links the urban villages and centres.* The QPTN supports the centres concept outlined in the Metropolitan Strategy, which is the foundation of Sydney's land use vision. In particular, the QPTN will provide the most direct route between any two centres.
- *Promoting accessibility over mobility.* The QPTN, and its integration with land use, will focus on providing appropriate levels of *accessibility* without relying on unsustainable levels of *mobility*. By clustering a range of land uses along the QPTN, it will become increasingly useful and attractive to users by reducing the

need to use private vehicles to access everyday needs and services, including employment, retail and commercial activities.

- *Integration with Land Use.* The QPTN has a two-fold connection with land use. Firstly, the QPTN serves areas with the highest public transport ridership, densities and mix of uses. In this way, higher ridership is rewarded with increased service. Secondly, the QPTN should be an important factor in determining land use mechanisms and zoning in the Camden / Campbelltown area.

7.3.2 Indicative *Quality Public Transport Network* Plan

In order to assist Camden and Campbelltown Councils' understanding of the concept, we have developed an indicative plan of the QPTN. This plan has been developed based on GHD's understanding of the study area as well as consultation with appropriate stakeholders (in this case the Ministry of Transport and the Department of Planning). More detailed, targeted work would need to be undertaken to develop the actual QPTN plan.

The Indicative Quality Public Transport Network Plan is provided in **Map 6 in Appendix A**.

The Quality Public Transport Network includes the following main features:

- The existing Southern Rail Line with stations at Glenfield, Macquarie Fields, Ingelburn, Minto, Leumeah Campbelltown and Macarthur.
- The proposed South West Rail Link to Edmondson Park and Leppington, due for completion by 2012.
- The proposed Strategic Bus Corridors from Camden to Campbelltown and Campbelltown to Liverpool. It is noted that the actual route of these services may be modified as a result of further investigations.
- A number of potential Strategic Bus Corridors serving the South West Growth Centre.

All of the above routes would provide regional services as part of the Quality Public Transport Network, which would aim to provide a level of service consistent with the adopted performance targets.

7.3.3 Implementation Process

This subsection provides a *sketch* of a potential implementation process for the Public Transport Strategy.

The key aim of the QPTN is to provide an integrated network of regular, reliable and rapid transit services.

Campbelltown and Camden Councils have limited control over the integration of the land use and transit provision process. Their influence extends to:

- Control of the land use process, which can locate density and transit-supportive design along public transport corridors, dictating future potential public transport ridership.
- Control over some of the streets on which the QPTN services will run (as many of the key transit routes are on facilities controlled by the RTA). On streets it manages, Councils have almost total control over peak and average public transport operating speeds, and largely influences public transport reliability.

Councils can therefore work with public transport providers to achieve the goals of the QPTN.

Step 1 - Refine the Indicative QPTN in consultation with State Agencies

Objectives that Councils should promote when dealing with other agencies such as the Department of Planning, Ministry of Transport or the RTA are outlined below.

- Proactive rather than reactive transit provision

  While the QPTN does not need to be established all at once, its effectiveness will depend on its ability to stay 'one step ahead' of land use and travel demand.

  In locations where large-scale development is planned (such as the South West Growth Centre), services offering quality, reliability and speed should ideally be in place before significant development commences.

- Provide certainty for the planning process

  While the development and redevelopment of urban areas is an intrinsically uncertain process, significant benefit can be derived when a degree of certainty is provided to the different players in the planning process. These players include: developers, public transport providers, infrastructure providers and other types of planners etc.

  In the case of the QPTN, the following characteristics could be defined in association with other authorities: Network, likely staging / service delivery date, integration nodes etc.

Step 2 – Develop Quality of Service Standards

A key part of developing the QPTN is performance measures. In the case of public transport, we refer to these as *Quality of Service Standards*. While these standards are mainly in the domain of public transport providers, they have been included here to assist Council to better understand and promote them.

In developing the measures outlined below, GHD has drawn on the work of the Transit Cooperative Research Program[10] report.

[10] Transit Cooperative Research Program, *TCRP Report 100 Transit Capacity and Quality of Service Manual 2nd Edition*

Frequency

The QPTN requires a high frequency of services. A 15-minute headway represents the point at which the passenger no longer needs to consult a schedule to use the service. It also permits transfers to be made rapidly even without timing of connections. It is recognised that the threshold frequency of 15 minutes is a point at which the benefits of public transport tend to grow exponentially.

From the user's perspective, frequency determines the number of times an hour a user has access to the public transport mode, assuming that public transport service is provided within acceptable walking distance (measured by service coverage) and at the times the user wishes to travel (measured by hours of service). Service frequency also measures the convenience of public transport service to choice riders and is one component of overall public transport trip time (helping to determine how long one waits for a public transport vehicle).

It is suggested that a 15 minute service frequency may be an appropriate target for the QPTN, with 30 minute frequency permissible early in the morning, late at night and outside of peak periods during weekends.

Span of Service

While it is often feasible to run high frequency public transport services during a limited peak period, a truly useful and attractive public transport system needs to maintain this level of service throughout the day. This is important for a number of reasons, including:

- As mixed land uses cluster in urban villages / along public transport lines, the purpose and timing of trips will become more diverse and the public transport network will need to respond to this demand.
- Analysis of travel data shows that non-commuter travel demand is growing significantly faster than commuter trips. To achieve the desired environmental and travel demand management aims, it is important that this high-growth travel can be captured by public transport.
- Unit costs of peak-only services are usually higher than for all-day services, because of the inefficiency of partial shifts.

The Ministry of Transport has suggested a typical service span[11] for regional routes:

- 5:30am – 10:30pm on Monday – Thursday
- 5:30am – 11:30pm on Friday
- 6:30am – 11:30pm on Saturday; and
- 7:30am – 9:30pm on Sunday.

[11] Ministry of Transport, *Service Planning Guidelines*, June 2006, available online: http://www.transport.nsw.gov.au/busreform/service-planning-guidelines.pdf

These service hours should be reviewed in relation to the local area.

Reliability

A high-frequency system consisting of headway scheduled services (i.e. no fixed timetable but a constant service interval, arriving every *X* minutes) such as the QPTN reduces some of the challenges involved with a lower-frequency 'timetable-scheduled' system (i.e. fixed timetable services). Nevertheless, passenger confidence in the system, and its ability to capture patronage is still is heavily dependent on the reliability of the QPTN services.

This dependence goes much deeper than pure waiting time, as every interface, whether between two QPTN services or between the QPTN and a local service, will be affected by service reliability (or lack thereof).

Loading

Loading constitutes a potent measure as it provides a useful indication of a range of issues affecting public transport. This was articulated well in the TCRP (2003) report[12]:

> *From the passenger's perspective, passenger loads reflect the comfort level of the on-board vehicle portion of a public transport trip—both in terms of being able to find a seat and in overall crowding levels within the vehicle.*
>
> *From a public transport operator's perspective, a poor level of service may indicate the need to increase service frequency or vehicle size in order to reduce crowding and to provide a more comfortable ride for passengers.*
>
> *A poor passenger load level of service indicates that dwell times will be longer for a given passenger boarding and alighting demand at a public transport stop and, as a result, travel times and service reliability will be negatively affected.*

Travel Speed

Travel speed of services provided by most urban public transport agencies are gradually slowing, typically at rates of 1-3% per year. This is just gradual enough that it rarely becomes a political issue, and yet it represents a profound decay over just a few years. Overall public transport travel speed, including stops, may be one of the most powerful public transport performance measures, for the simple reason that speed affects the public transport operation in two independent ways:

- Falling speeds mean rising operating cost (slower service → longer running times → more buses needed to maintain a given headway → more cost). This comes at the expense of additional needed service to which this money could be devoted.

[12] Transit Cooperative Research Program, *TCRP Report 100 Transit Capacity and Quality of Service Manual 2nd Edition.* Submitted by Kittleson Associates, 2003. Page 3-43.

- Falling speeds discourage ridership, because the service is less attractive relative to the automobile.

The Ministry of Transport has now adopted a target average speed (including stops) of 25km/h for all services. This is considered to be an appropriate standard for typical bus services. A higher target may be desirable for limited stops express services on the Quality Public Transport Network.

Step 3 - Ensure Land Use, Parking and Walking and Cycling Strategies are coordinated to support the QPTN

Ways in which Council can work to achieve the goals of the QPTN are outlined below.

- Provide the necessary levels of priority to ensure public transport speed and reliability

  Councils need to make a strong commitment to provide the necessary levels of priority to ensure public transport speed and reliability on local roads. Among the factors within Councils' control, this one is the most important. The implementation of the QPTN will need to be further addressed on State roads.

- Preserve easements, rights-of-way and road space required for the QPTN

  Based on the planned QPTN, Councils should (in the cases where streets fall within their jurisdiction) make the necessary arrangements to ensure that QPTN corridors can be developed with the necessary levels of transit priority and travel time. Actions could include:

  – Incorporation of QPTN streets into planning tools such as the comprehensive plan, parking policies, road hierarchy, urban design, pedestrian and bicycle plans, etc.
  – Zoning and urban design controls at key stations, stops or transfer points.
  – Establishment of setbacks or easements along rights of way that might need future expansion to accommodate the QPTN.

- Parking controls

  Parking controls are one of the most potent tools that Councils have at their disposal to bring about a mode shift towards public transport, as well as to create additional movement space in a constrained right of way through peak-hour parking restrictions.

- Pedestrian and cyclist access

  The amenity and safety of access to public transport lines has a strong influence on mode choice. By providing pedestrian and cyclist-friendly urban environments, Councils will be supporting the development of a integrated transport network that allows easy access to public transport by walking and cycling.

Step 4 – Identify constraints to implementation and successful operation of the QPTN.

Campbelltown and Camden Councils should work with other local and state level stakeholders including transport providers to identify constraints to the implementation

and successful operation of the QPTN. This step will allow proactive planning: enabling possible constraints to be identified before they become problems. Campbelltown and Camden Councils should also help to define measures of a successful QPTN. This step may take the form of a series of workshops.

Step 5 – Identify linkage opportunities between local services and the QPTN.

The local public transport network, primarily consisting of local bus routes, must integrate with the QPTN to provide an integrated regional transport network. It is therefore important that opportunities between these two services are identified and timetabling and scheduling can be implemented so one can assist the other and vice versa.

7.3.4 Stakeholders, Resources and Costs

Given the intimate interrelation between public transport planning and land use planning, Campbelltown and Camden Councils are in a key position with regard to the facilitation and promotion of the QPTN. This said, the control of route and service planning sits squarely with the public transport providers and the Ministry of Transport. For these reasons, the QPTN should be defined with strong representation from Camden and Campbelltown Councils.

The Ministry of Transport is responsible for defining and funding the Regional Bus Corridors, and thus will be a key stakeholder in the development of the QPTN.

The RTA has control over many of the roads on which the QPTN will operate, thus will be a key partner in ensuring sufficient levels of bus priority to meet speed and reliability targets. The RTA also has a vested interest in the operation of on-street public transport and has been involved in several projects such as upgrading bus lanes and the T-Way Network.

Busways is the major bus operator in the area and is working closely with MOT on service restructures as part of the review of bus contracts in the South West. Busways and other bus companies will also have a significant role to play on high frequency bus routes that are not part of the Ministry of Transport's Regional Bus Network. Busways also have depots in Campbelltown and Camden.

RailCorp provides passenger rail transport via its CityRail and CountryLink services. Since all suburban passenger rail lines constitute part of the QPTN and RailCorp is an important landholder at rail nodes, RailCorp is a key stakeholder.

The development and adoption of the QPTN will not incur significant costs to Council. The primary actions for Council can be undertaken by the Transport Planning and Strategic Planning divisions of each Council. Implementation of the QPTN may involve certain infrastructure upgrades such as bus priority measures and bus stop construction that would lead to significant capital costs. However, due to the undefined nature of such improvements and potential for cost sharing with other stakeholders, these costs cannot currently be estimated.

7.4 Secondary Strategies

PT2 - Improve interchanges at rail stations and key bus nodes (e.g. lighting, shelter, seats, real-time information, security, disabled access), including improved facilities for buses, taxis and other transport functions.

Strategy Description

The quality and functionality of public transport interchanges is an important determinant in the overall success of the public transport system. Interchanges should provide an attractive environment for users that ensures comfort, legibility, personal security and minimised interchange time. A range of improvements can be made to interchanges to improve the passenger experience, including provision of shelter, seats, lighting, real-time information, current timetables, security and disabled access. The high quality environment should not only be provided within the interchange, but also on routes to bus stops, car parks and the surrounding town centre, through the provision of high quality pedestrian routes and lighting around the interchange. It is noted that not all interchanges may require the same standard of facilities, and interchanges with high passenger flows may need to be prioritised.

Outline of Processes

The following steps are recommended to implement this strategy:

1. Definition of minimum requirements for public transport interchanges
2. Identify which public transport interchanges meet the minimum requirements and those that require improvements
3. Define a budget and timeframe for the improvements to be met and identify potential funding arrangements
4. Provision of improved facilities

Stakeholders, Resources and Costs

Campbelltown and Camden Councils would be likely to work with RailCorp and the Ministry of Transport to achieve this strategy. Council's role would be to ensure effective integration of the interchange with the surrounding area.

Most costs associated with this strategy would be expected to be met by RailCorp and the Ministry of Transport. Costs that may fall to Council could include improvement of the environment around interchanges, as determined by Step 2, above.

Performance Measures

The performance measure for this strategy is meeting the timeframe for the improvement of facilities.

PT3 - Improve facilities at major bus stops

Strategy Description

In addition to improving conditions at major interchanges, facilities also need to be improved at major and minor bus stops in Campbelltown and Camden. Minimum requirements for the provision of services such as shelters, seats, current timetables and disabled access, need to be defined and implemented. Major bus stops on the Quality Public Transport Network should all have a high level of these services, and possibly also include real-time information on bus scheduling.

Outline of Processes

The following steps are recommended to implement this strategy:

1. Definition of minimum requirements for the provision of bus stop amenities
2. Identify which bus stops meet the minimum requirements and those that require improvements
3. Define a budget and timeframe for the improvements to be met and identify potential funding arrangements
4. Provision of improved facilities

Stakeholders, Resources and Costs

Campbelltown and Camden Councils would implement this strategy in partnership with the Ministry of Transport and bus operators.

The major cost element of this task would be the upgrade of bus stop infrastructure. Various arrangements could be made with advertising firms or key stakeholders to subsidise the cost of improved facilities, which would need to be determined during the investigation.

Performance Measures

The performance measure for this strategy is meeting the timeframe for the improvement of facilities.

PT4 - Improve facilities at minor bus stops

Strategy Description

Similar to Public Transport 2 and Public Transport 3, minor bus stops should also be improved to achieve minimum standards for passenger information and access. Particular issues at minor bus stops are the provision of current timetables and disabled access to buses.

Outline of Processes

The following steps are recommended to implement this strategy:

1. Definition of minimum requirements for the provision of bus stop amenities
2. Identify which bus stops meet the minimum requirements and those that require improvements
3. Define a budget and timeframe for the improvements to be met and identify potential funding arrangements
4. Improvement of facilities through the provision of timetables and disabled access

Stakeholders, Resources and Costs

Campbelltown and Camden Councils would implement this strategy in partnership with the Ministry of Transport and bus operators.

The major cost element of this task would be the upgrade of bus stop infrastructure. Various arrangements could be made with advertising firms or key stakeholders to subsidise the cost of improved facilities, which would need to be determined during the investigation.

Performance Measures

The performance measure for this strategy is meeting the timeframe for the improvement of facilities.

PT5 - Investigate the potential for common branding for the transport network and naming of bus stops to create a sense of place and correlation with land uses.

Strategy Description

Common branding of the public transport network would allow for better identity, legibility and marketing, focusing on an integrated bus and rail system. Naming of bus stops would help foster a local identity and better recognition of bus routes within the community.

Note that this strategy may be influenced by the current changes to the bus contract regions in Sydney, administered by the Ministry of Transport.

Outline of Processes

The following steps are recommended to implement this strategy:

1. Identification of stakeholders
2. Workshop with interested parties to identify opportunities and issues
3. Potential for community consultation to further identify opportunities and issues
4. Roll out of physical and marketing initiatives designed to strengthen community perceptions of an integrated public transport network

Stakeholders, Resources and Costs

The stakeholders for this strategy are the Campbelltown and Camden Councils, the bus operators and the rail operators.

Costs will be dependant on the level of marketing and changes to signage. Opportunities for sponsorship of bus shelters may offset many of these costs.

Performance Measures

This strategy should be measured upon the completion of the workshop with potential parties to identify issues by a specified date.

PT7 - Provide and lobby for bus priority where required.

Strategy Description

Greater priority needs to be given to buses on the road network where services are unacceptably affected by congestion. Bus priority, which can be bus lanes or priority at traffic signals, will result in faster and more reliable bus services, encouraging public transport use and optimising efficiency of bus operations. Councils can lobby for bus network improvements to the Roads and Traffic Authority and Ministry of Transport to acquire funding and support for the introduction of greater bus priority in the region.

Outline of Processes

The following steps are recommended to implement this strategy:

1. Consult with bus operators to determine existing areas of unacceptable delays to buses
2. Confirm the Quality Public Transport Network (see Public Transport 1)
3. Identify routes that may be affected by congestion (see Road Network Strategy 3)
4. Work with the RTA to investigate the feasibility of potential bus priority measures in terms of available space, impact on traffic function, impact on properties, and potential benefits and costs
5. Hold discussions with the RTA and Ministry of Transport to gain commitment for funding and implementation of bus priority measures

Stakeholders, Resources and Costs

Campbelltown and Camden Councils will initiate this strategy and identify potential locations of need for lobbying purposes. These would then be brought to the attention of the RTA and Ministry of Transport with a view to gaining commitment for development funding and implementation of bus priority measures. Bus operators would also be consulted in the initial stages of the investigation

The initial stages of this strategy would not require significant resources as rely on the completion of other strategies (e.g. Steps 2 and 3). Step 4 would most likely be undertaken by the RTA. Step 5 would be undertaken by Council staff through written and verbal consultation with key stakeholders at no additional cost to Council.

Performance Measures

A minor performance measure is the completion of an internal report assessing the benefits of bus priority lanes. Another minor measure is meetings with key people prior to lobbying. The major performance measure is a formal request for increased funding and support.

PT11 - Investigate the potential for limited stops commuter bus services linking residential areas to key centres and public transport hubs.

Strategy Description

There is potential for a greater role for express bus services linking residential and other key parts of Campbelltown and Camden to public transport nodes. Express services with limited stops, in conjunction with dedicated bus lanes, would improve travel times in the Campbelltown and Camden region and would assist in attracting new passengers to bus services. This strategy could be undertaken as part of the Ministry of Transport review of bus services in the region.

Outline of Processes

The following steps are recommended to implement this strategy:

1. Consult with bus operators to determine existing and potential future express routes and potential barriers to implementation
2. Confirm the proposed routes against the regional public transport network (see the Quality Public Transport Network in Public Transport 1)
3. Assist the bus operators to identify feasible routes, possibly with the analysis of existing patronage data and / or travel data from the Transport and Population Data Centre.
4. Determine whether bus priority measures or bus stop improvements are required to provide desired travel speed, and secure commitments from the relevant authorities to provide these improvements (see Public Transport 3 and 7)
5. Work with relevant parties (bus operators, RTA, Ministry of Transport) to assist in the introduction of new express bus routes as deemed feasible by the bus operators

Stakeholders, Resources and Costs

The role of Campbelltown and Camden Councils in the implementation of this strategy is to provide an initial stimulus and consultative role between the key stakeholders. Alternatively, the strategy may be undertaken in whole by the Ministry of Transport, with potential for consultation with Councils and other stakeholders.

The relevant bus operators will be ultimately responsible for the bus services and therefore are the primary stakeholders. The RTA and MoT should also be consulted to ensure consistency and secure any required improvements to bus stops or bus priority measures.

Costs to Council will be minimal for this strategy, as actions relate to consultation only.

Performance Measures

The primary measure of performance is the completion of Step 5. The actual implementation of express bus routes will be the responsibility of the bus operators.

PT12 - Facilitate late night bus and taxi services in partnership with local hotels, clubs, cinemas and major event venues.

Strategy Description

Public transport services often operate at a lower frequency after peak times, making it difficult for people to travel by public transport during the evening. An opportunity exists to create partnerships between trip generators (such as cinemas, hotels, sporting events and other venues) and transport providers (such as bus and taxi operators) to assist people to travel home safely without a need for private cars. For example, a late night "Pumpkin Bus" operates from Manly along the northern beaches on Friday and Saturday nights to transport patrons from local pubs to home. Another option is arrangement of regular taxi pickups to transport patrons to a rail station or nearby areas. Incentives may be required to secure participation by the relevant stakeholders.

Outline of Processes

The following steps are recommended to implement this strategy:

1. Identification of interested trip generators currently poorly served by public transport, particularly out of peak travel hours
2. Hold discussions with bus and taxi operators to determine if opportunities exist to provide special services to serve these trip generators
3. Promote discussion between transport operators and trip generators with a view towards mutually beneficial arrangements to provide improved transport options for the public, which may involve incentives for participation in the program
4. Assist with promotion of any new transport services arising from this strategy

Stakeholders, Resources and Costs

Campbelltown and Camden Councils would initiate this strategy and work with trip generators (including hotels, clubs, cinemas and other major event venues) and transport operators (bus and taxi companies). The RTA and Ministry of Transport may also be able to provide assistance in implementing the strategy.

In terms of resources, existing Council staff (such as road safety officers, community development officers, and transportation officers) facilitate this strategy at no additional cost to Council. Some sponsorship of the transport service by Council and other parties could be appropriate once operational.

Performance Measures

The primary implementation measure is the initiation of the late night bus and taxi services by a specified date.

PT14 - Consider the potential for bus-only links in new areas to reduce bus travel time in comparison with private vehicle travel.

Strategy Description

Bus only links of the road network are one mechanism to improve bus travel times and thus improve services for passengers. This is particularly useful in residential areas that have been designed with limited access to the surrounding road network or in areas where traffic calming has led to closure of streets to general traffic.

Outline of Processes

The following steps are recommended to implement this strategy:

1. Consult with bus companies to identify potential opportunities for bus only links
2. Evaluate potential benefits and costs of providing bus only links
3. Investigate funding opportunities, e.g. from developers, Ministry of Transport
4. Construct beneficial bus only links

Stakeholders, Resources and Costs

Campbelltown and Camden Councils would initiate this strategy, in consultation with bus operators and the Ministry of Transport. Residents adjacent to any proposed bus only link should be consulted so that their concerns can be considered.

Council staff within the transport division can complete Steps 1-3 with little additional cost as part of their existing roles. If a new link is constructed, significant capital costs would be possible which could be funded from a variety of sources, as identified in Step 3.

Performance Measures

The performance measure for this strategy is the travel time savings achieved for bus routes utilising the new bus only link.

PT15 - Instigate marketing campaigns for public transport targeting non-users.

Strategy Description

Marketing programs providing people with better information on public transport services have been shown to be very effective in helping people change their travel behaviour to more sustainable modes. For example, the TravelSmart program is well developed at the National and State level and has assisted in boosting use of public transport in many areas. In Perth, the TravelSmart program generated a 21% increase in public transport use and a 10% decrease in vehicle use[13]. This approach may have potential for certain locations and user groups within the Campbelltown and Camden Region where high quality public transport options are available.

Outline of Processes

The following steps are recommended to implement this strategy:

1. Collate and review existing data on successful programs and target groups, available from the Australian Greenhouse Office[14] and the NSW Department of Planning[15]
2. Consult with the Department of Planning to determine if a TravelSmart program or other marketing program can be implemented in the area
3. Identify areas or user groups within the Campbelltown and Camden region that may be successful targets for the marketing program
4. Contract (either through Council of the Department of Planning) consultants with experience in delivering effective TravelSmart or other marketing programs
5. Review the success of the program and evaluate potential for future initiatives

Stakeholders, Resources and Costs

Campbelltown and Camden Councils should initiate this strategy by seeking ongoing leadership from the Department of Planning. Other stakeholders may include transport operators (including RailCorp and bus companies), and trip generators including schools and workplaces.

The cost of a TravelSmart program is not insignificant. For example, the Department of Planning and Infrastructure in WA recommended a range of area wide TravelSmart programs in Perth at an average cost of $45 per person in the study area. For example, the Stirling program covering 150,000 people is estimated to cost $7m[16].

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[13] For further information see http://www.dpi.wa.gov.au/tsmart_highlights.pdf

[14] For further information see http://www.travelsmart.gov.au

[15] For further information see http://www.planning.nsw.gov.au/travelsmart/index.asp

[16] For further information see http://www.dpi.wa.gov.au/tsmart_tenyearplan.pdf

Despite of this cost, it should be noted that TravelSmart programs have been found to be a worthwhile investment for Government due to high benefit to cost ratios.

It is possible that the Department of Planning would fund such a program on behalf on the NSW Government, following trials in Ermington and Woy Woy in 2003-05, although there are no current plans to expand this program. Funding may also be available from the Australian Greenhouse Office through the Cities for Climate Protection program.

Performance Measures

The measure of success for this strategy would be firstly, completion of the marketing program, and secondly, the actual travel behaviour change resulting from the strategy.

PT16 - Consider the accessibility needs of disadvantaged user groups who are not currently well served by the existing public transport network, and consider the potential for extension of community transport services or other transport modes to meet their needs.

Strategy Description

Disadvantaged public transport users groups such as children, the elderly, women, the unemployed, and those on a low income or without a car can suffer disproportionately from an ineffective public transport network. Consideration of the needs of these user groups and provision of new transport options may lead to better transport provision across a variety of modes and methods.

Outline of Processes

The following steps are recommended to implement this strategy:

1. Identify areas of the region that have a high number of disadvantaged groups and poor transport accessibility through appropriate analysis (see Land Use 9)
2. Assess existing travel patterns of persons in nominated areas and also identify potential latent demand for travel to areas not currently served by the local public transport network.
3. Consult with local community groups, community transport providers, interested state government agencies and other relevant parties to identify current deficiencies and potential solutions
4. Work with transport providers to improve transport options as recommended in Step 3.

Stakeholders, Resources and Costs

Campbelltown and Camden Councils will initiate this strategy to identify potentially disadvantaged sections of the community. Following this, the Councils will take a stewardship role in bringing together transport users and providers to determine solutions. State Government stakeholders may include the Ministry of Transport and Department of Community Services.

Council's role in this task could be undertaken by internal staff resources, minimising cost to Council.

Performance Measures

The first performance measure is the completion Step 2, which will identify disadvantaged sections of the community and unmet travel needs. The second measure is the implementation of additional or improved public transport services by a specified date, as agreed between stakeholders in Task 4.

7.5 Tertiary Strategies

PT6 - Investigate and implement actions to improve personal security around public transport stops, including land use, infrastructure and monitoring solutions.

Strategy Description

Passengers using public transport have a right to feel safe and secure while accessing trains and buses. However, there is sometimes a perception that rail stations in particular are unsafe, particularly at night. Land use planning and urban design can play a role in improving security, visibility and amenity, resulting in a safer environment. Landscaping is also another aspect of urban design that can be utilised so that areas around public transport stops are open, with high visibility and are well lit at night. Security cameras and other monitoring strategies can also play a role.

Stakeholders

Campbelltown Council in particular can initiate this strategy in consultation with the NSW Police, RailCorp and the Ministry of Transport.

PT8 - Work with bus operators to facilitate efficient bus routes in existing and planned areas.

Strategy Description

Campbelltown and Camden Councils should work in cooperation with local bus operators to optimise the efficiency of bus services in the region. This can be achieved by monitoring the need for priority along existing routes and planning for efficient bus routes in the layout of new development areas.

Stakeholders

Campbelltown and Camden Councils would implement this strategy in partnership with local bus operators and the Ministry of Transport.

PT9 - Consider incentives and other arrangements to provide bus services from "Day One" of occupation in new developments.

Strategy Description

It is important that public transport services running at attractive frequencies and spans are available as soon as residents begin to occupy new developments. With public transport facilities in place, residents are encouraged to use alternatives to the private car, which can establish long term travel choices. However, there are often financial

constraints for public transport companies in new development areas, so incentives are needed to assist the implementation of these services.

Stakeholders

The stakeholders for this recommendation are the Campbelltown and Camden Councils, local bus operators, Department of Planning and the Ministry of Transport.

PT10 - Investigate the potential for 'roaming' bus routes in off-peak periods.

Strategy Description

‘Roaming’ bus routes can deviate from their defined bus route in order to provide a door to door service for passengers. They are typically run in off-peak time periods and rely on telephone bookings on the previous day. If targeted at those with poor mobility such as the elderly or disabled, this service could provide a valued community service by providing better opportunities for independent mobility.

Stakeholders

This strategy would be initiated by Campbelltown and Camden Councils but actioned by the Ministry of Transport in partnership with local bus companies.

PT13 - Lobby for better public transport integration (e.g. timetabling, fares, ticketing, information and marketing).

Strategy Description

Greater public transport integration in regards to timetabling, fares, ticketing, information and marketing needs to be achieved to improve the attractiveness of public transport services. Concerted efforts need to be made to align and integrate these services in a manner that is user-friendly. This would include provision of integrated timetable information for all public transport modes, integrated and equitable fares that do not differ from operator to operator, tickets that can allow transfers between buses or buses and trains, and a combined marketing approach to promote a unified public transport network.

Stakeholders

The stakeholders for this recommendation are the Campbelltown and Camden Councils, however, although the RTA and MoT will both be heavily involved, they may not necessarily be stakeholders.

PT17 - Monitor public transport planning and provision in the South West Growth Centre.

Strategy Description

The South West Growth Centre is a large development encompassing over 100,000 dwellings over 30 years, outlined by the Metropolitan Strategy. In order to accommodate this number of new dwellings and associated residents, it is necessary that the new development be structured around public transport to avoid major impacts upon the existing road network in the area. Councils will have a role in monitoring the planning and provision of public transport in this area to ensure high quality services for new residents, while protecting existing areas from excessive growth in car travel.

Stakeholders

Campbelltown and Camden Councils will monitor this strategy through consultative arrangements with the Department of Planning, Ministry of Transport, RailCorp and the Growth Centres Commission.

PT18 - Implement, monitor and lobby for equitable access to public transport services in accordance with Ministry of Transport accessibility targets.

Strategy Description

The Ministry of Transport has targets for fully equitable access in place for public transport[17]. This includes a compliance timeframe for disabled access to bus stops, interchanges, and bus, rail and taxi services. Council can take an active role by ensuring that all bus stops are compliant with relevant standards such as State Transit's Bus Stop Style Guide. Additionally, Council can take an active role in lobbying other stakeholders to provide fully accessible services and facilities in line with the mandatory timeframes outlined by the NSW Government's *Accessible Transport Action Plan.*

Stakeholders

Stakeholders for this strategy include Campbelltown and Camden Councils, the Ministry of Transport, RailCorp, taxi companies, bus companies and the RTA.

[17] For further information see http://www.transport.nsw.gov.au/using_trans/access-trans-action-plan.html

8. Walking and Cycling

8.1 Objective

The primary objective of the combined Walking and Cycling Strategies is to encourage greater use of walking and cycling as a means of transport and recreation. Walking and cycling are valued due to their low cost, low impact, wide suitability and heath benefits. Safety is also an important element for walking and cycling, with improved layouts required at intersections and provision of walking and cycling paths that are protected from road traffic. Pedestrian and bicycle strategies also need to be integrated with the Land Use, Road Network, Parking and Public Transport Strategies to assist access to existing and potential bus and rail networks.

8.2 Approach

The provision and management of walking and cycling facilities and opportunities in Campbelltown and Camden will be undertaken in such a way that:

- Understands the key walking and cycling needs in the region.
- Recognises the role walking and cycling plays in the reduction of car-based trips in the Campbelltown and Camden region, and how the provision of improved facilities and opportunities can help promote mode change in the future.
- Understands the need for the separation of pedestrians and cyclists from motor vehicle traffic.
- Identifies mechanisms for the community to have regular input into the provision of walking and cycling facilities.
- Recognises that all trips involve walking at either the beginning or end of the journey, resulting in the need for connections between parking and public transport areas and destinations.
- Incorporates walking and cycling issues into the Land Use, Road Network, Parking and Public Transport Strategies.
- Recognises that walking and cycling paths can form key routes between destinations.
- Understands that walking and cycling trips perform a variety of functions, not only travel from an origin to a destination, but such trips are also undertaken for recreation and/or health benefits, which can be influenced by the amenity of the route.

It is therefore necessary for Campbelltown and Camden Councils to develop a walking and cycling framework that will best achieve the aspirations of the region.

8.2.1 Background

The approach to this strategy was developed based on the following background information:

Barriers to Walking and Cycling

Walking and cycling are valued as a means of transportation and recreation due to their low cost, low impact, wide suitability and heath benefits. However, there are numerous barriers to increasing walking and cycling through a lack of infrastructure, heightened safety concerns, long trip distances and an urban form structured to provide increased mobility by private vehicles to the detriment of other modes.

Infrastructure Opportunities

There is an opportunity to provide for increased walking and cycling through the provision of a suitable environment within existing and future urban areas. The provision of infrastructure includes walking and cycle paths, which should be clearly defined and separated from roads and traffic, and possibly even between cyclists and pedestrians. Potential conflict areas with traffic should also be improved, through upgrading intersections, the installation of traffic signals and pedestrian crossings. Other infrastructure approaches could include improved path or street lighting to enhance safety along walking and cycling routes.

Social Opportunities

Opportunities to promote walking and cycling should consider a wide range of tools, rather than only infrastructure responses. One approach would be the walking school bus, which is designed to encourage children to walk to school: fostering independence and promoting healthier, more active travel. Other approaches may include the promotion of safe cycle or pedestrian routes or measures such as financial incentives for cycling to work.

Walking and Cycling in New Development Areas

Once the above issues have been identified, the focus shifts to identifying and providing appropriate plans and paths in existing and new development areas. One option is incremental provision of walking and cycling paths as new residential areas expand. If facilities are not proposed or in place when residents move into the area, then their travel choices will be influenced by a lack of pedestrian and bicycle routes. The more appropriate option is to incorporate pedestrian and bicycle routes into the design of new developments and use the inclusion of these plans as an incentive to attract future residents.

Integration with other Transport Modes and Urban Planning

Pedestrian and bicycle plans cannot be considered in isolation from other forms of transport and urban planning. This applies to the integration of pedestrian and bicycle plans with access to existing and potential bus and rail networks, and with the encouragement of higher density, mixed land-use developments. The later is particularly important if shops and services are located close enough to walk or cycle to. Urban design also plays a role in achieving satisfactory pedestrian and bicycle plans. Residents must be able to walk or bicycle to shops. Citing an earlier example, road widths in and around nodes could be reduced to slow passing traffic and make them more pedestrian and cyclist friendly. Pedestrian and bicycle plans also need to encourage access to bus stops and rail stations.

8.3 Primary Strategy

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.

The following subsections outline the likely steps required and issues to be considered in delivering the Walking and Cycling Strategy.

8.3.1 Walking and Cycling Concepts

Achieving a Positive Walking Environment

Walking is the simplest form of transportation. It is available to all people (inclusive of those who use mobility aids), is free and has insignificant environmental cost. Furthermore, all trips involve some walking component, if only from the car park to the shop. Planning for pedestrians is therefore of primary importance to transportation planning.

Pedestrians use every part of the public domain, including roads, footpaths, nature strips, shopping centres and other public spaces.

Some planners and engineers **incorrectly** assume that planning for pedestrians will follow the same logic as traffic planning:

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

In reality, however, the pedestrians scale is so fine and the diversity of trips and purposes so complex, that pedestrian movement is better conceptualised in terms of:

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

Rather than conforming to traditional traffic engineering concepts like turning radii and design speeds, pedestrians are far more attuned to the environment in which they are moving. Thus, planners should consider pedestrian needs in terms of concepts such as 'design', 'amenity', 'personal security' etc.

It should be noted that walkers are particularly vulnerable to cars and other motorised traffic.

Pedestrian needs

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

A number of goals are required in order to provide a high quality pedestrian environment:

Safe

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

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

Direct

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

Campbelltown and Camden have a number of physical barriers to direct walking routes, including the rail line, freeway and also the heavy traffic on a number of arterial and sub arterial roads. Wherever possible, these barriers should be overcome with additional crossing points such as grade separated or signalised crossings.

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

Pleasant

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

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

Suitable for all users

Quality pedestrian environments must be available to all who choose to use them. Paths must be of a suitable width to accommodate the number of pedestrians (and other users, such as mobility scooters) expected and be of an appropriate gradient, including ramps. The path should be continuous and free of obstructions such as signage, street furniture. The needs of hearing and vision-impaired users must be considered and provided for, especially where user safety is an issue.

Feed transit nodes

Pedestrians must walk to access public transport services. The length and quality of the walk will to some extent determine whether the person will choose to use public

transport. Therefore, walking catchments of public transport nodes are an important tool in the promotion of public transport use.

Areas around bus stops and rail stations should be examined to determine any obstacles to pedestrian use. This could include a lack of safe road crossings, poor footpaths or kerb ramps, or an unsafe or unpleasant waiting environment.

Achieving a Positive Cycling Environment

Cycling is a highly efficient, environmentally benign form of transport. As with walking, cyclists are improving their health and contributing to an active environment at a human scale.

Cyclists move around the public domain in various ways, largely depending on the trip purpose and rider characteristics. For example, children will tend to use the footpath and cycle at low speeds, while an adult on the way to work will ride along the fastest and most direct route available (on or off-road).

Cyclists therefore move through an “environment” in a similar way to pedestrians, although the speed and distance, which they travel, mean that they identify more with the concept of a network. Attention to cycling facilities should not be confined to one or two “routes” or “links” in an area, as trip origins and destinations are diverse. Every street must be a safe route for cyclists and be designed in accordance with the function, traffic volume and width of the street.

Infrastructure for cycling can be designed in a similar way to other vehicles, through consideration of speed, sight distance, priority at intersections etc. However, bicycles have a degree of manoeuvrability that makes them somewhat unpredictable to motorists and pedestrians. Therefore, the design of both on and off-road facilities should aim to encourage predictability and clear priority at all conflict points.

Cyclist needs

As for pedestrians, the provision of cyclist infrastructure should not only aim to fulfil the requirements of existing users, but to increase the number of cycling trips in the Campbelltown and Camden area. Such an outcome would result in fewer car trips, healthier residents and a more active (and safe) streetscape.

A number of goals are required in order to provide a high quality cycling environment:

Safe

Cyclists are particularly vulnerable road users. They are slower and smaller than the dominant vehicles in traffic, making them less likely to be seen. Furthermore, cyclists have little protection at times of collisions.

When approaching an intersection, cyclists are rarely in a position that motorists expect, they are closer, and therefore the motorists do not see them, resulting in a conflict.

Intersections present a danger for cyclists due to the many movements from different directions. Clear guidance is needed on the approach, through and exit from the intersection for both cyclists and motorised traffic.

Off-road paths reduce the risk of collision with vehicles, but still endanger cyclists at intersections with roads. Also, cyclists can collide with pedestrians with potentially fatal outcomes. The general principles of predicability and clear priority remain important for off-road paths, including directional segregation and high visibility for all users.

Personal security for cyclists is perhaps less critical than for pedestrians. However, narrow and dark areas remain dangerous for cyclists and should be avoided.

Direct

As for pedestrians, cyclists dislike significant deviations to their route. However, some flexibility can be expected where a better cycling environment is provided on a minor deviation from the most direct route. A careful balance must be found between providing a direct route and also one free of delays or safety concerns.

Pleasant

People will more be likely to cycle in a pleasant environment. The route should be scenic, quiet, free of heavy traffic and traffic travelling at high speeds. The best cycling environment is often found in areas that have been traffic calmed.

Suitable for all users

Cyclists cover a large range of user skill levels and trip purposes. While skill level often depends on age, other factors such as frequency of cycling and carrying heavy loads can affect a user's actions. Trip purposes often dictate the preferred cycling facility.

Best practice aims to provide for all users of a particular cycle route, ensuring that no users are excluded from using the facility. If one type of bicycle facility is unable to provide for all users of that route, a duplicate (both on and off road facilities) facility should be provided.

Feed transit nodes

The catchment area of public transport services can be greatly enhanced with the aid of bicycles. Provision of safe routes and bicycle parking will encourage more public transport use with less need for park and ride car parking.

End of trip facilities

As noted above, bicycle users need to know that their bike is safe from theft while it is not attended. This can be achieved through the provision of bike racks and lockers in areas that are well lit, in view of the public and protected from the weather. Where possible, Council should also encourage the provision of shower and change rooms in new buildings such as offices.

8.3.2 Implementation Process

This subsection provides a *sketch* of a potential implementation process for the Walking and Cycling Strategy. As the Primary Objective specifies to define objectives and to confirm the validity of existing pedestrian and bicycle plans, these are included in this section of the report.

Step 1: Identify Existing Issues and Define Objectives for Future Walking and Cycling Programs

To facilitate walking and cycling in Campbelltown and Camden, it is necessary to identify existing issues that may act as barriers to walking and cycling, and further to define objectives that can be applied in strategy development. This would usually be undertaken in consultation with community and stakeholder groups such as local Bicycle User Groups, walking groups, access committees and recreation planners. Some examples of objectives to be used include:

- To improve the safety of pedestrians and cyclists
- To provide direct and easy access to facilities and services in the region
- Create an environment and routes that link to public transport nodes
- To increase bicycle use for travel to employment destinations
- To increase bicycle use for recreational purposes
- To encourage alternative methods of transport in Campbelltown and Camden
- To provide safer routes to school
- To improve community health

Step 2: Assess Existing Walking and Cycling Plans

The second step in implementing this strategy is to review the existing pedestrian and cycling plans. The following information is provided to aid this process.

Campbelltown Footpath Strategy

Campbelltown City Council, 2005

Objectives

The purpose of the Campbelltown Footpath Strategy was to provide a framework to develop a more effective footpath network to meet the needs of the community. This includes a footpath strategy that:

- Provides a safe and convenient footpath network;
- Promotes and facilitates pedestrian transport as alternatives to private vehicle use;
- Facilitates the transport, recreation and safety needs of residents; and
- Exercises responsible and cost effective asset management of the footpath network.

The strategy included an assessment of the existing footpath network, which comprises of 248 km of footpath along street frontages and a further 38 km of off-road walkways.

Outcomes

The outcome of this study was a list of prioritised long term and short term goals for the footpath network. It was noted that Council has approximately $200K allocated for construction of new footpaths however these were previously allocated based on

request rather than planned at a strategic level. Short term goals were subject to a ranking process (which includes criteria and weighting factors applied to each criteria) to allow for more fairness in prioritising requests. A map showing all existing footpaths was created.

New projects were identified as part of the evaluation process which focussed on providing additional connectivity and a more logical footpath network.

Achievement of Goals

While it is important to provide footpaths outside major trip generators, as identified under the long-term goals of the strategy, there is a need to place a greater emphasis on the pedestrian environment, rather than the footpath network, by incorporating the goals identified in regard to safety, directness, amenity and suitability for all users. By only providing footpaths, this strategy fails to incorporate the total environment for pedestrians, which influences the decision to walk to destinations. For example, there is no recognition of pedestrian crossings. Pedestrians like to travel as directly as possible and by planning for and providing crossings, pedestrians will be able to move about their local environment easily and safely.

One objective in the strategy is related to safety, but does not address how safety is to be met or improved. Safety needs to be addressed through measures such as specifying pedestrian crossings, the separation of pedestrians from traffic with alternative routes to destinations and security aspects such as lighting and open spaces. Other issues that need to be addressed incorporate the suitability of the pedestrian environment for all users. For example, there is no mention of footpath widths. Footpaths must be of a suitable width to accommodate the number of pedestrians (and other potential disabled user groups) expected and be of an appropriate gradient.

Campbelltown Bicycle Plan

Campbelltown City Council, 2001

Objectives

One of the main objectives of this bicycle plan is "to promote healthy lifestyles and reduce vehicle use by enabling people to safely and convenienty get to where they want to go to by bicycle". The study identifies opportunities for a bicycle plan through analysis of current local transport statistics (including current and potential users of bicycle facilities) in the context of current policy frameworks. The study is also to be incorporated into the Campbelltown local government area development control plan. Other opportunities include the identification of desirable routes and facilities with interested parties, and the provision of bicycle specific facilities.

Outcomes

The outcome of this study was a bicycle plan that aimed to provide a network of bicycle routes that are direct and appeal to a wide variety of people. Key components of the bicycle plan include two major cycleway routes (from north to south), fourteen

proposed on-road cycleways (within the Campbelltown local government area), and one proposed off-road cycleway (within the Campbelltown local government area).

The plan has been implemented in stages on the basis of the availability of grant funds and matching Council funds.

Achievement of Goals

The Campbelltown Bicycle Plan covers many of the goals associated with achieving a positive cycling environment. Directness, which is important to allow cyclists convenient access to their destinations, is addressed in one of the Bicycle Plan objectives. However, a careful balance is required between providing a direct route and one free of delays or safety concerns. End of trip facilities, such as bicycle parking, are also addressed in the Bicycle Plan objectives, which will encourage more people to cycle to destinations. There is still the opportunity within the Bicycle Plan to move towards a more complete cycling environment. There is little specific mention in the objectives of the Bicycle Plan for the provision of off-road cyclepaths and cycling in areas with low traffic volumes. People will more be likely to cycle in a pleasant environment, so the Plan needs to place greater emphasis on the provision of cyclepaths and the encouragement of routes where travel is through more sedate traffic areas or neighbourhoods.

There is some mention of routes being attractive, including lighting, personal safety and aesthetics. This is a good step towards achieving a cycling environment in the Campbelltown area by addressing associated issues with cycling, rather than purely the provision of a cycle network. There is still potential to improve these issues by focusing on bicycle separation from road traffic, crossing intersections, lighting at night and the minimisation of conflict with pedestrians on shared paths. Design standards are also raised under the Bicycle Plan objectives, but no specific details are given. Minimum widths of cyclelanes and cyclepaths should be specified in order to ensure the needs of cyclists are consistently met.

Campbelltown Pedestrian Access and Mobility Plan (PAMP)

ARUP, 2001

Objectives

The main aim of the Campbelltown Pedestrian Access and Mobility Plan (PAMP) is to "improve the network's coherence, directness, safety, comfort, attractiveness and equity of access." The PAMP aimed to increase the number of pedestrian-based transport trips, resulting in improved health, better environmental conditions, decreased traffic congestion and improved safety.

Outcomes and Recommendations

A number of works were recommended following the pedestrian audit. Based on funding of $40,000 annually, the audited routes in Campbelltown and Ingleburn could be completed in just over six years. Approximate cost estimates were provided. It was further recommended that once the recommended works are completed, that a Physical Action Plan be developed for the future PAMP Routes. It was also

recommended that the PAMP is monitored as the pedestrian network is developed. This could be achieved by establishing a regular Route Quality Audit process.

Achievement of Goals

The current status of the recommendations is that the identified works program has been substantially completed. More recent works have focussed on secondary routes and retrofitting compliant pram ramps near local shopping centres.

The PAMP provided a good basis for the upgrade of the pedestrian network across the centres of Campbelltown and Ingleburn. As the works are completed, the success of the plan should be reviewed and a decision made as to whether a new Plan is required. The new Plan could be revised to include other key pedestrian environments including commercial centres and public transport interchanges. Consideration should also be given to new development areas to ensure compliance with relevant standards and identify any need for upgrades.

Camden Pedestrian Access and Mobility Plan (PAMP)

Cardno MBK, 2003

Objectives

The main aim of the Camden Pedestrian Access and Mobility Plan was to facilitate improvements in the level of pedestrian access and priority, particularly in areas of pedestrian concentration, and to resolve pedestrian accident clustering. The final report for this plan was preceded by three stages: Data Collection/Survey and Analysis, Developing Pedestrian Networks and Development of Draft Pedestrian Network. The objective of the final report was to recommend a suitable pedestrian network for the area, and prioritise necessary engineering actions.

Outcomes

The principal outcome of the Camden Pedestrian Access and Mobility Plan was a recommendation for a pedestrian network that focuses on the pedestrian routes between the main pedestrian generators and attractors. The recommended pedestrian network was prepared on the basis of high priority (1-5 years) and medium lower priority works (6-10 years). These works were documented in the provided Works Schedules Annexure. The network also incorporated existing footpaths and crossing points. The Schedule of Works details all items of new construction as well as upgrading of existing facilities if required.

Achievement of Goals

This Plan is thorough and provides many good examples of how to achieve a positive walking environment. These include the identification of pedestrian nodes in city centres, safety issues relating to traffic, including the presence of speed limits, the identification of special needs groups, such as school children, the elderly and disabled people, shared paths with cyclists and pedestrian crossings.

While there are many good aspects of a positive walking environment in the Pedestrian Access and Mobility Plan, there is also some opportunity for improvement. Overall,

some parts of the Plan are too focused. In order to achieve a walking environment that everyone will use, there needs to be more emphasis on the larger picture. For example, there is a large emphasis on the provision of routes, rather than environments. Routes of pedestrian travel are important, but should not be the only consideration in a walking plan.

Camden Bicycle Plan

Cycle Planning, 1996

Objectives

The Camden Council Bicycle Plan is directed towards establishing a network of routes to support “safe, convenient and pleasant cycling for residents and visitors.” The plan aims to cater for cycling in both the urban and rural areas of the study area. The plan also focuses on developing community education programs, pedestrian acess, safety and community consultation methods.

Outcomes

The Camden Council Bicycle Plan recomends the implementation of a five stage bicycle network over a period of eight years. The bicycle plan contains existing bicycle routes and proposed local and regional linkages. The total cost of the recommended plan is stated to be approximately $2,667,000. As well as the staging of the bicycle network, simultaneous implementation of bicycle education programs was recommended.

Achievement of Goals

There are many positive aspects of the Camden Bicycle Plan. The Plan specifies details in relation to routes being on-road, off-road and shared with pedestrians. Importantly, cycle routes were also considered from different perspectives based upon different types of cyclist, incorporating a wide range of users. Parking and storage facilities for bicycles at destinations were also covered, improving the function and suitability of cycling facilities. The Bicycle Plan also addressed education and promotion of the cycle network, which relates well to the concept of a positive cycling environment. Provision was also made in the Plan for existing and new residential areas. The emphasis of this was that roads should be planned and designed with cycles in mind, and be able to link residential areas to schools, shops, recreation and other residential areas. However, a link to employment areas was not mentioned.

Many aspects of the Camden Bicycle Plan provide a good base to achieve a positive cycling environment. The Bicycle Plan is focused on providing a cycling network. There is a need to shift the emphasis from a network to an environment, from a small scale to a wider scale. To achieve this, there are some areas to improve on. This is an old document, and should therefore be updated. In regard to safety, intersections were not addressed. Intersections are where cyclists are often not seen and are prone to accidents. Personal security for cyclists was also not raised; an issue such as street lighting in the evenings is likely to affect the number of cyclists. Amenity issues are not addressed in the Plan. As for the Pedestrian Access and Mobility Plan, there is room for improvement in this situation as cyclists are also sensitive to their surrounding

environment, as some may choose to travel along a certain route for aesthetic reasons, such as along a river or next to a road with a low traffic volume, as opposed to a direct route which may be unpleasant for cycling.

Step 3: Identify Key Themes and Recommend Actions Regarding Existing Documents

The third step in implementing this strategy is to determine the key themes from previous pedestrian and cycling plans and make recommendations as to whether the existing documents need to be revised. The following information is provided to aid this process.

In general, the key themes drawn from the background documentation as outlined in Step 2 confirm the following objectives:

- The provision of a safe and convenient bicycle and footpath network, including direct cycle-paths and footpaths to desired destinations,
- Access to all railway stations in the area, major shopping centres, sports facilities, and educational institutions (such as high schools, primary schools, TAFEs, and the university),
- The promotion and facilitation of cycling and pedestrian transport as alternatives to private vehicle use,
- Proposals to adopt bicycle and pedestrian plans into a Development Control Plan, which would require developers to consider and adopt the recommendations in the plans,
- Potential for dual-use bicycle and pedestrian networks.

The actions arising from the assessment of the existing walking and cycling plans in Campbelltown and Camden indicate that:

- The Campbelltown Footpath Strategy needs to be further developed to incorporate the wider concepts of a positive walking environment.
- The Campbelltown Bicycle Plan is sound, but should be revised to reflect current issues and objectives.
- The Campbelltown PAMP is currently being implemented. As this upgrade program concludes, the Plan should be revised to include other centres, public transport interchanges and development areas.
- The Camden PAMP is thorough and does not require an update in the short to medium term.
- The Camden Bicycle Plan covers many aspects to achieve a positive cycling environment, but should be revised to reflect current issues and objectives.

Step 4: Consider the Potential for Regional Cycling Programs and Infrastructure in Campbelltown and Camden

The RTA's 'Action for Bikes: BikePlan 2010 (NSW)', produced in 1999, indicates that a regional cyclepath would be constructed from Campbelltown to Liverpool by 2008 (this

has been delayed to beyond 2010). This cyclepath is proposed to be an off-road path along the rail line. There were no regional proposals related to Camden.

Each Council can lobby the RTA to secure funding to create cyclepaths on roads that will be upgraded in the future, including roads such as Camden Valley Way, Narellan Road, Badgally Road and Raby Road.

The recent Metropolitan Strategy identifies future regional recreation trails through the South West Growth Centre. Councils should promote the achievement of these through their involvement in or comments on the Precinct Planning process for the Growth Centre.

Step 5: Implement the Revised Walking and Cycling Strategies

The final stage in this strategy is for each Council to work with key stakeholders to prioritise, fund and implement the works and programs identified by the preceding plans.

8.3.3 Stakeholders, Resources and Costs

Campbelltown and Camden Councils are responsible for this Walking and Cycling Strategy, and therefore are the primary stakeholders. Both councils have an important part to play in establishing pedestrian and cycle paths in the region.

The RTA has the potential to be involved as a key stakeholder, especially if roads and carriageways need to be modified and/or upgraded to accommodate pedestrians and cyclists. Additionally, the RTA has the responsibility for regional cycle infrastructure as outlined in the *Action for Bikes - BikePlan 2010.*

Local Bicycle User Groups represent the local cycling community and should be consulted in planning for new local and regional cycling facilities.

The State Bicycle Advisory Council, Ministry of Transport, and Bicycle NSW are stakeholder that should be consulted in the planning for regionally significant routes.

Councils should also consult with private developers to ensure that new developments include high quality facilities for pedestrians and cyclists, either through Section 94 contributions or a developer agreement.

The cost implications of the recommended actions could be assumed on the following basis:

- Revision of cycling plans for both the Campbelltown and Camden Councils, estimated to cost in the order of $40,000-$50,000 for each cycle plan.
- Approximately $40,000-$60,000 to revise the Campbelltown PAMP, depending on the number of locations to be studied.
- Other plans are generally appropriate and do not require major revisions.

Other potential sources of funds are through the RTA and developer contributions.

8.4 Secondary Strategies

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.

Strategy Description

An opportunity exists for Campbelltown and Camden Councils to work with all levels of schools in the region to encourage safe and sustainable travel to and from educational facilities. The number of children being driven to school has increased dramatically over the last decade, which has resulted in more traffic congestion and a decrease in physical activity by children. Increased traffic around schools also has the potential to reduce pedestrian safety. Councils can play a role in addressing this trend by assisting schools, the students and the parents to provide safe travel alternatives other than the car for the journey to school.

Outline of Processes

The following steps are recommended to implement this strategy:

1. Campbelltown and Camden Councils to contact schools to determine level of interest
2. Arrange meetings with schools and other stakeholders to assess travel desires, issues and requirements
3. Develop options to address identified issues with the aim of promoting safe options for walking and cycling in place of private car trips, such as 'Walking School Bus' programs
4. Address any road safety issues that may be of concern around schools, such as provision of marked pedestrian crossings, dedicated drop off/pick up zones and bus zones.
5. Implement or facilitate programs to achieve program goals
6. Monitor and review success of programs

Stakeholders, Resources and Costs

The primary stakeholders are the schools in the region as they are the parties affected. Campbelltown and Camden Councils are secondary stakeholders, as are public transport operators and the families of the school children. The Department of Planning may be able to provide assistance or potentially leadership on this strategy as a result of current School Travel Plan projects. The Ministry of Transport is also a key stakeholder, as the operator of the School Student Transport Scheme.

This strategy is likely to incur high costs, as a liaison is needed with the schools and the council to facilitate meetings and improvements as they occur. There is a potential need for an additional part-time or full-time position associated with this role. Funding may be available in the future under the Department of Planning School Travel Plan projects or the Australian Greenhouse Office through the Cities for Climate Protection program.

Performance Measures

The performance measures for this strategy are the introduction of initiatives such as a 'Walking School Bus' programs by a specified date and success of the program in promoting more sustainable and active travel behaviour.

WC10 - Review pedestrian domain to ensure equitable access for disabled and mobility impaired users.

Strategy Description

Disabled and mobility impaired persons require equal opportunities to access services. Areas around public transport stops and town centres in particular need to be in accordance with Australian Standards (e.g. AS1428), the Disability Discrimination Act 1993, and the Building Code of Australia 1996 to allow easy access by people with physical disabilities. This strategy would build on current work arising from each Council's Disability Action Plan.

Outline of Processes

The following steps are recommended to implement this strategy:

1. Identify/define relevant accessibility standards
2. Meet with community groups to identify existing accessibility issues and determine locations to be investigated
3. Conduct audits of key pedestrian areas such as town centres and transport interchanges to assess compliance with relevant standards and best practice
4. Discuss findings with public transport providers, local communities and disabled/mobility impaired groups to identify best solutions
5. Adopt and implement recommendations for improvements

Stakeholders, Resources and Costs

Campbelltown and Camden Councils will initiate and action this strategy. Stakeholders are the public transport providers, local communities and disabled/mobility impaired groups.

It is likely that Council would contract the accessibility audits to a suitably qualified consultant. The cost of such an audit would be likely to be approximately $2000 for an average town centre (in a 500m radius). If improvements are recommended and constructed, this will increase the cost substantially.

Performance Measures

The performance measure for this strategy is the completion of audits. A secondary measure is the completion of recommended upgrades.

8.5 Tertiary Strategies

WC2 - Complete the identified pedestrian and cycle network as outlined in current pedestrian and bike plans.

Strategy Description

Once the validity of the existing pedestrian and cycle plans are confirmed, the recommended works should be implemented accordance with an identified program, with defined funding sources and responsibilities.

Stakeholders

Campbelltown and Camden Councils will be the primary parties in implementing this strategy, with potential for funding and coordination assistance from the RTA.

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.

Strategy Description

There is a need to ensure consistency between best practice guidelines and planning policies at both the state and local level. In particular, attention must be paid to Development Control Plans to ensure that they support the facilitation of alternative modes to the car. This can be achieved by applying relevant concepts in guidelines published by the NSW Department of Planning and the Roads and Traffic Authority in conjunction with Development Control Plans to promote accessible street networks.

Stakeholders

Responsibility for the Development Control Plans lies with Campbelltown and Camden Councils.

WC5 - Promote active transport modes for health and transport.

Strategy Description

Active transport modes such as walking and cycling need to be promoted as part of a package of measures to improve the health of individuals. The incidence of obesity and related health problems is rising in Australia, both in children and adults. This can be countered with programs designed to encourage people to walk and cycle more as part of their travel behaviour.

Stakeholders

Campbelltown and Camden Councils can engage NSW Health as a key stakeholder in this strategy, with potential for involvement also from the RTA, and local trip generators.

WC6 - Promote driver awareness of cycling to provide a safer road environment.

Strategy Description

Driver and cyclists often share public road space, but drivers' awareness of the rights and needs of cyclists is still lacking. Education programs can help raise awareness of cyclists' needs and their right to a safe road environment.

Stakeholders

The RTA will play a key role in this recommendation, with potential for local programs to be undertaken by Campbelltown and Camden Councils.

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).

Strategy Description

Standards for the public domain (streets, footpaths, parks and other public areas) need to be reviewed occasionally to ensure consistency and compliance with relevant standards and guidelines. This will include consideration of footpaths, kerb ramps, steps, seating, public phones, signage, and lighting with respect to quality and accessibility.

Stakeholders

The Campbelltown and Camden Councils would be responsible for implementing this recommendation through local pedestrian audits and if required, revision of town centre masterplans and development control plans.

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).

Strategy Description

Major roads often provide an unattractive or unsafe environment for pedestrians and cyclists due to the high volume of traffic. Councils and the Roads and Traffic Authority can address this issue through provision of high quality pedestrian and bicycle facilities

along or adjacent to major roads. This would involve construction of dedicated paths, bike lanes, road crossings and associated signage as part of a regional pedestrian and bicycle network.

Stakeholders

Campbelltown and Camden Councils should work closely with the RTA to ensure high quality pedestrian and cycling facilities are provided along all major road upgrades. Furthermore, the Councils can enter into discussions with the RTA as to how to progressively improve pedestrian and bicycle facilities along existing roads that are unlikely to be otherwise upgraded.

WC9 - Review and implement road safety plans to improve the safety of pedestrians and cyclists.

Strategy Description

Road safety plans are a mechanism available to local government to reduce the incidence of crashes and road injuries, and in particular, those involving pedestrians and cyclists. This process would include a review existing road safety issues and programs in the Campbelltown and Camden region and then establish a framework for the continuation and expansion of the road safety program.

Stakeholders

Campbelltown and Camden Councils should implement the road safety plans in conjunction with the RTA.

WC11 - Provide secure and visible parking facilities for bicycles in all commercial centres and other major trip generators.

Strategy Description

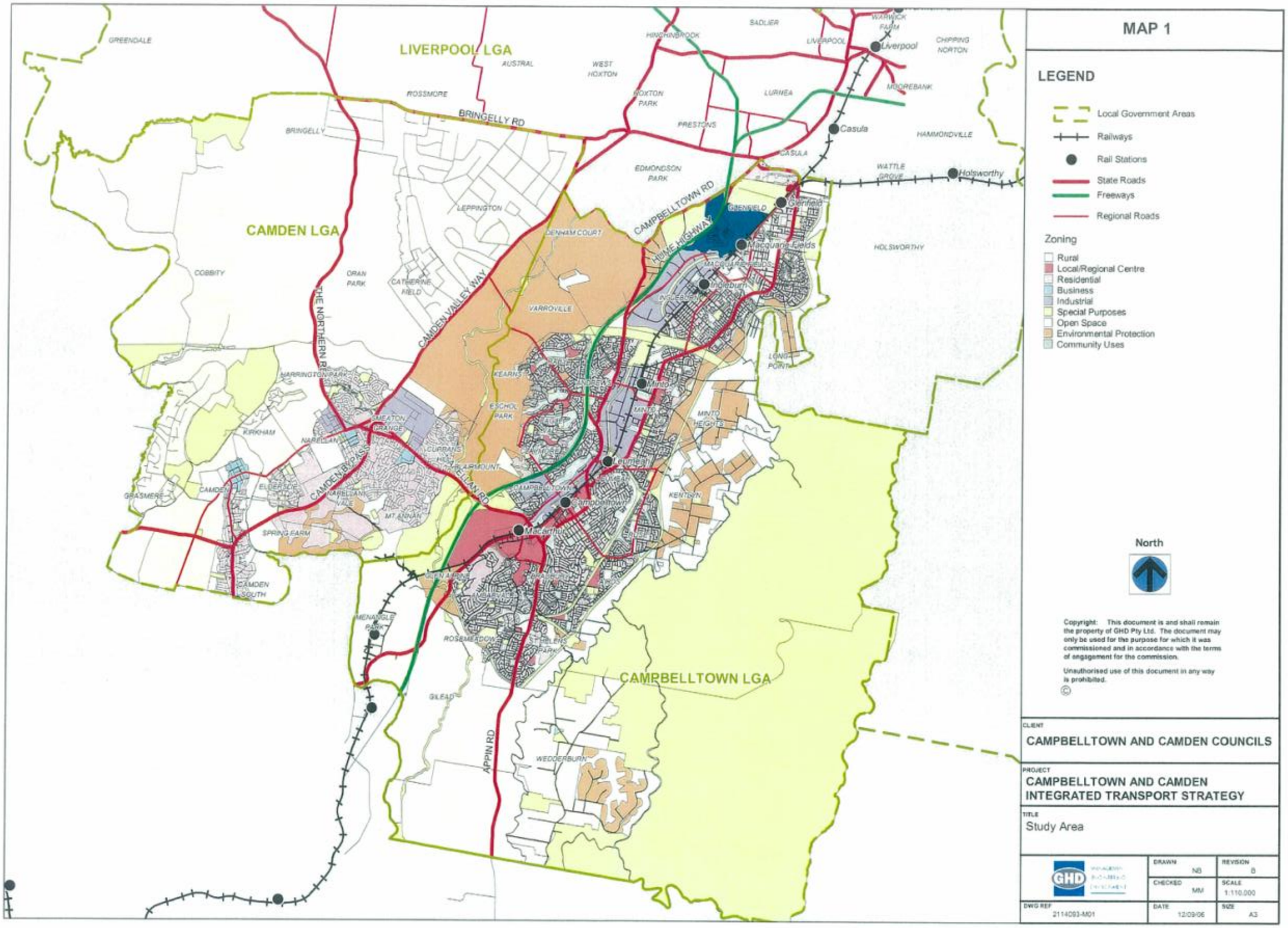
An important element to encourage cycling to commercial centres and major trip generators is the protection of bicycles while parked at their destination. To prevent theft and/or damage to bicycles, secure facilities that are highly visible to passing pedestrians should to be installed. Councils can assist in identifying demand for cycling facilities through consultation with users and trip generators.

Stakeholders

Campbelltown and Camden Councils would investigate the need for such facilities, to be provided by trip generators, RailCorp, the Ministry of Transport or each Council as appropriate. Local bicycle user groups, Bicycle NSW and trip generators should be consulted about the need for and potential provision of such facilities.

Appendix A

Mapping


MAP 1
LEGEND
Local Government Areas
Railways
Rail Stations
State Roads
Freeways
Regional Roads
Zoning
Rural
Local/Regional Centre
Residential
Business
Industrial
Special Purposes
Open Space
Environmental Protection
Community Uses
North
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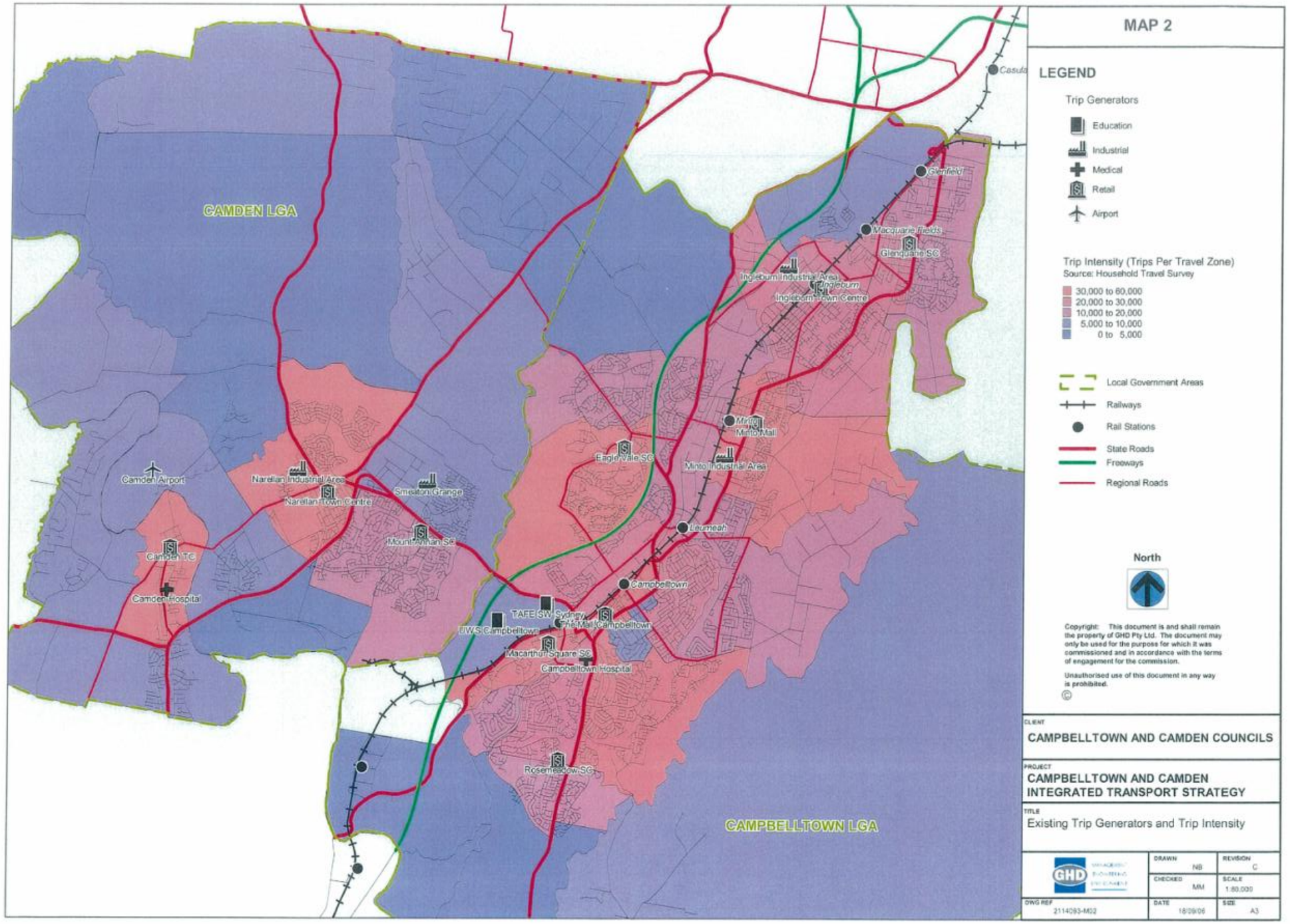
CLIENT
CAMPBELLTOWN AND CAMDEN COUNCILS
PROJECT
CAMPBELLTOWN AND CAMDEN INTEGRATED TRANSPORT STRATEGY
TITLE
Study Area
DRAWN NB
REVISION B
CHECKED MM
SCALE 1:110,000
DWG REF 2114093-M01
DATE 12/09/06
SIZE A3
LIVERPOOL LGA
CAMDEN LGA
CAMPBELLTOWN LGA
GREENDALE
AUSTRAL
WEST HOXTON
ROSSMORE
BRINGELLY RD
BRINGELLY
HINCHINBROOK
SADLIER
LIVERPOOL
WARWICK FARM
CHIPPING NORTON
MOOREBANK
HOXTON PARK
LURNEA
PRESTONS
CASULA
HAMMONDVILLE
WATTLE GROVE
EDMONDSON PARK
LEPPINGTON
CAMPBELLTOWN RD
GLENFIELD
HUME HIGHWAY
HOLSWORTHY
DENHAM COURT
COBBITY
ORAN PARK
CATHERINE FIELD
CAMDEN VALLEY WAY
THE NORTHERN RD
VARROVILLE
KEARNS
ESCHOL PARK
MINTO
MINTO HEIGHTS
LONG POINT
HARRINGTON PARK
KIRKHAM
NARELLAN
OAKDALE
CURRANS HILL
ELDERSLIE
CAMDEN BYPASS
NARELLAN VALE
MT ANNAN
GRASMERE
CAMDEN
SPRING FARM
CAMDEN SOUTH
CAMPBELLTOWN
KENTLYN
MENANGLE PARK
ROSEMEADOW
ST HELENS PARK
GILEAD
APPIN RD
WEDDERBURN
Liverpool
Casula
Holsworthy
Glenfield
Macquarie Fields
Campbelltown
Leumeah
Minto
Ingleburn
Mt Annan



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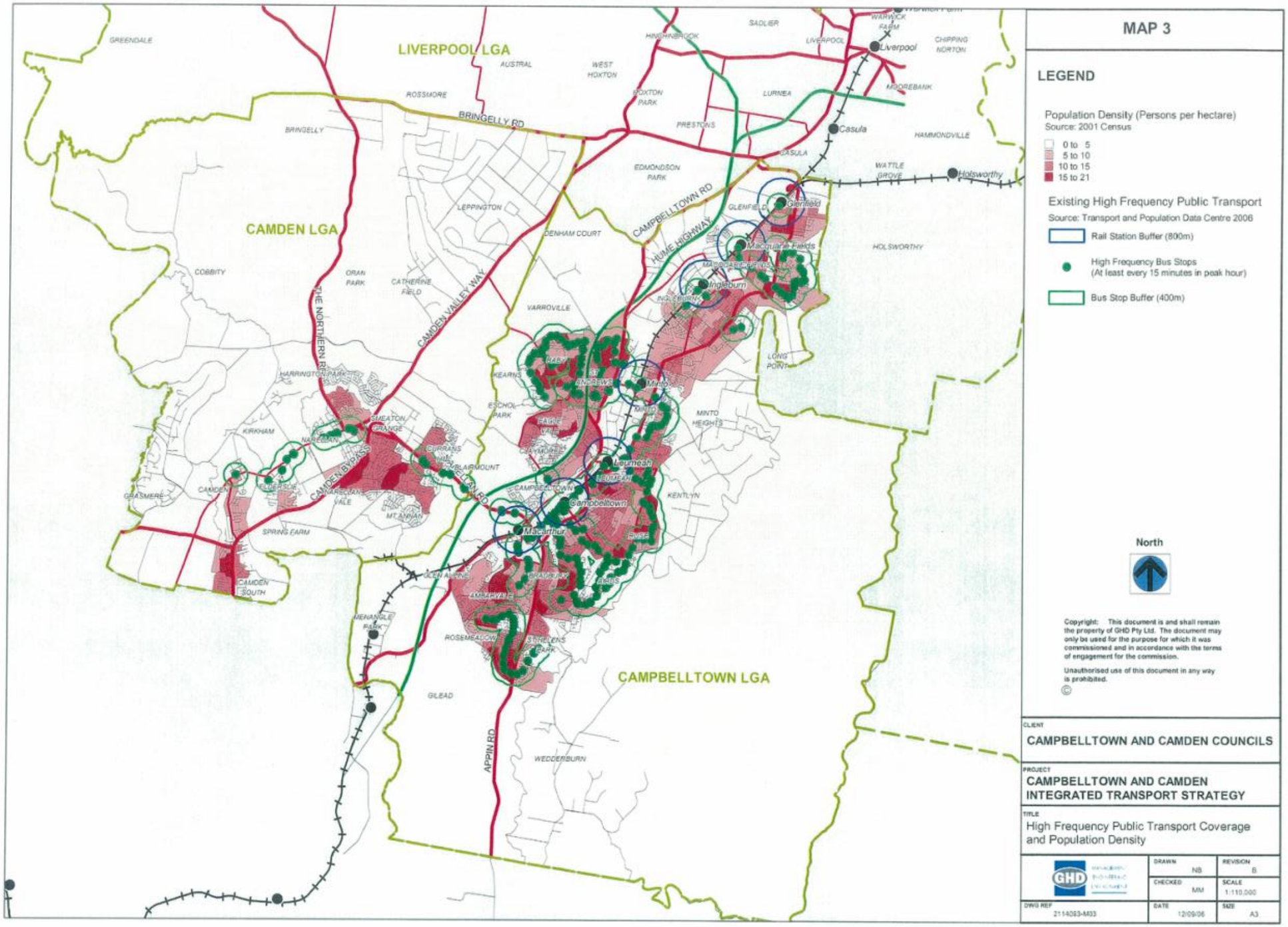
MAP 3
LEGEND
Population Density (Persons per hectare)
Source: 2001 Census
0 to 5
5 to 10
10 to 15
15 to 21
Existing High Frequency Public Transport
Source: Transport and Population Data Centre 2006
Rail Station Buffer (800m)
High Frequency Bus Stops
(At least every 15 minutes in peak hour)
Bus Stop Buffer (400m)
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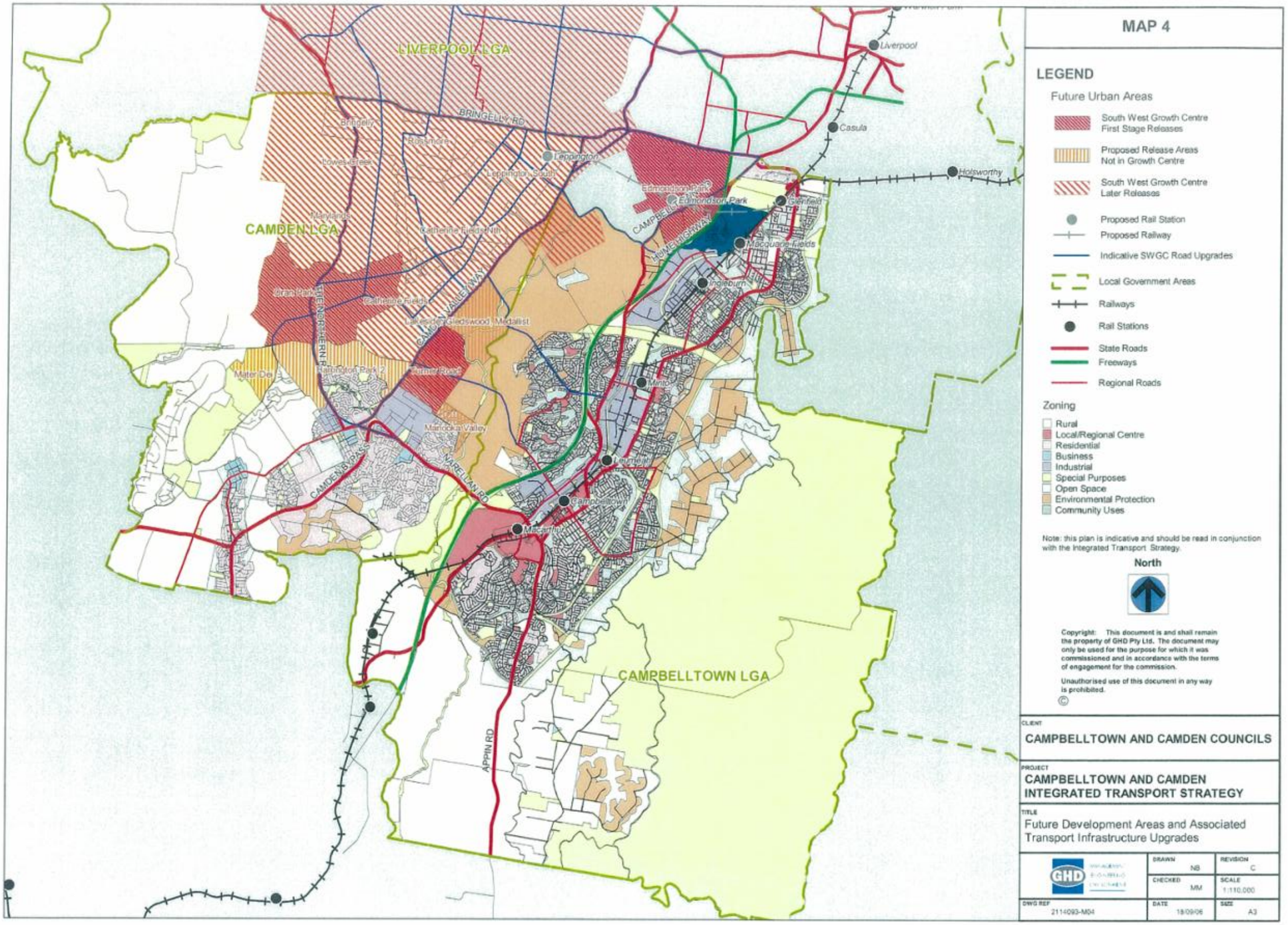
CAMPBELLTOWN AND CAMDEN COUNCILS
PROJECT
CAMPBELLTOWN AND CAMDEN INTEGRATED TRANSPORT STRATEGY
TITLE
High Frequency Public Transport Coverage and Population Density
GHD
DRAWN NB
REVISION B
CHECKED MM
SCALE 1:110,000
DWG REF 2114083-M03
DATE 12/09/06
SIZE A3
LIVERPOOL LGA
CAMDEN LGA
CAMPBELLTOWN LGA
GREENDALE
AUSTRAL
WEST HOXTON
ROSSMORE
BRINGELLY RD
BRINGELLY
BOXTON PARK
PRESTONS
LURNEA
SADLIER
LIVERPOOL
WARWICK FARM
CHIPPING NORTON
MOOREBANK
Liverpool
Casula
HAMMONDVILLE
CASULA
WATTLE GROVE
Holsworthy
HOLSWORTHY
EDMONDSON PARK
LEPPINGTON
DENHAM COURT
CAMPBELLTOWN RD
HUME HIGHWAY
Glenfield
Macquarie Fields
Ingleburn
COBBITY
ORAN PARK
CATHERINE FIELD
CAMDEN VALLEY WAY
THE NORTHERN RD
VARROVILLE
LONG POINT
HARRINGTON PARK
KEARNS
ST ANDREWS
Minto
MINTO HEIGHTS
KIRKHAM
SMEATON GRANGE
ESCHOL PARK
FAIRVIEW
CURRANS HILL
BLAIRMOUNT
Leumeah
CAMPBELLTOWN
Campbelltown
KENTLYN
GRASMERE
CAMDEN
ELDERSLIE
CAMDEN BYPASS
CAMDEN VALE
MT ANNAN
SPRING FARM
Macarthur
CAMDEN SOUTH
BOW ALPINE
GRAFTON
ANGAPHALE
MENANGLE PARK
ROSEMEADOW
ST HELENS PARK
GILEAD
APPIN RD
WEDDERBURN


MAP 4
LEGEND
Future Urban Areas
South West Growth Centre First Stage Releases
Proposed Release Areas Not in Growth Centre
South West Growth Centre Later Releases
Proposed Rail Station
Proposed Railway
Indicative SWGC Road Upgrades
Local Government Areas
Railways
Rail Stations
State Roads
Freeways
Regional Roads
Zoning
Rural
Local/Regional Centre
Residential
Business
Industrial
Special Purposes
Open Space
Environmental Protection
Community Uses
Note: this plan is indicative and should be read in conjunction with the Integrated Transport Strategy.
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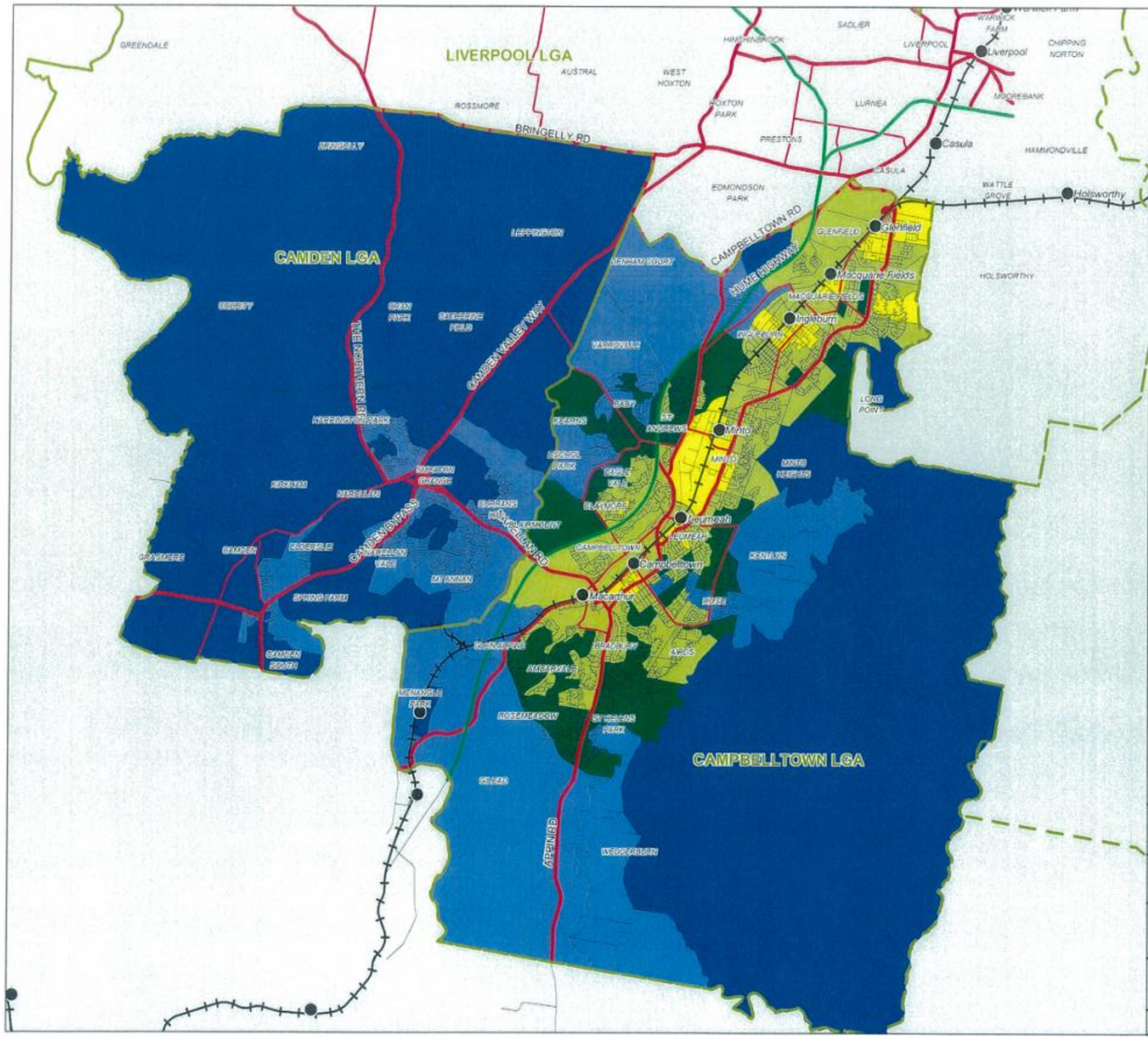
CAMPBELLTOWN AND CAMDEN COUNCILS
PROJECT
CAMPBELLTOWN AND CAMDEN INTEGRATED TRANSPORT STRATEGY
TITLE
Future Development Areas and Associated Transport Infrastructure Upgrades
GHD
DRAWN NB
REVISION C
CHECKED MM
SCALE 1:110,000
DWG REF 2114093-M04
DATE 18/09/06
SIZE A3
LIVERPOOL LGA
CAMDEN LGA
CAMPBELLTOWN LGA
Liverpool
Casula
Holsworthy
Leppington
Edmondson Park
Glenfield
Macquarie Fields
Ingleburn
Minto
Leumeah
Campbelltown
Macarthur
BRINGELLY RD
CAMPBELL LINK
HUME HIGHWAY
CAMDEN VALLEY WAY
NARELLAN RD
CAMDEN BYPASS
APPIN RD
Mater Dei
Mariondale Valley
Medallist
Palmer Road
Brian Park
Catherine Fields
Leppington South
Bringelly
Rossmore
Lowes Creek
Kearsley
Catherine Fields North



MAP 5

LEGEND

Percentage of PT Trips for the Journey to Work
Source: 2001 Census Journey to Work Origins

- 0 - 10%
- 10 - 15%
- 15 - 20%
- 20 - 30%
- 30 - 45%

Includes linked public transport trips (e.g. car & train)

- Local Government Areas
- Railways
- Rail Stations
- State Roads
- Freeways
- Regional Roads

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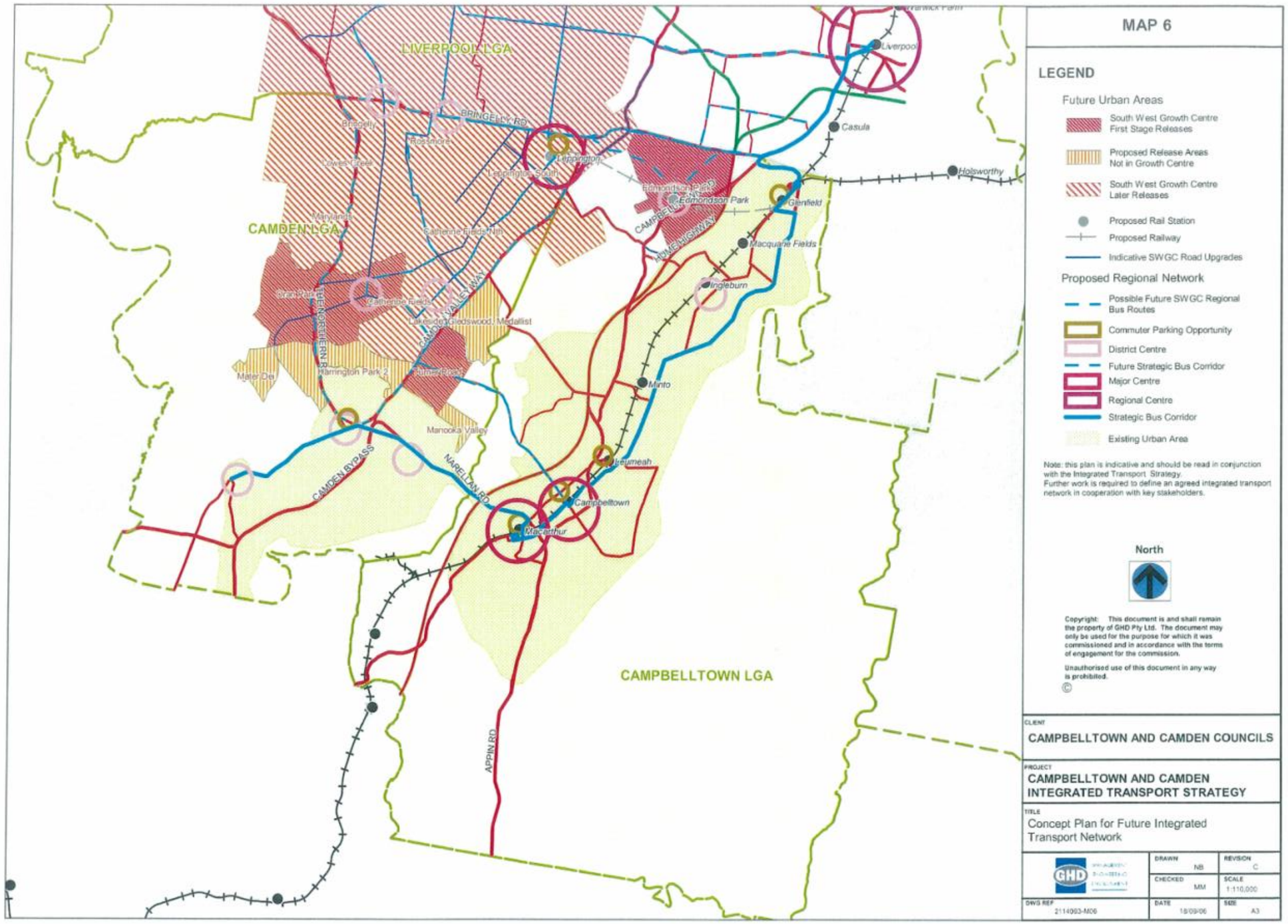
PROJECT
CAMPBELLTOWN AND CAMDEN INTEGRATED TRANSPORT STRATEGY

TITLE
Existing Public Transport Mode Share for Travel To Work

GHD	DRAWN NB	REVISION B
	CHECKED MM	SCALE 1:110,000
DWG REF 2114093-M05	DATE 12/09/06	SIZE A3


MAP 6
LEGEND
Future Urban Areas
South West Growth Centre First Stage Releases
Proposed Release Areas Not in Growth Centre
South West Growth Centre Later Releases
Proposed Rail Station
Proposed Railway
Indicative SWGC Road Upgrades
Proposed Regional Network
Possible Future SWGC Regional Bus Routes
Commuter Parking Opportunity
District Centre
Future Strategic Bus Corridor
Major Centre
Regional Centre
Strategic Bus Corridor
Existing Urban Area
Note: this plan is indicative and should be read in conjunction with the Integrated Transport Strategy.
Further work is required to define an agreed integrated transport network in cooperation with key stakeholders.
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CAMPBELLTOWN AND CAMDEN INTEGRATED TRANSPORT STRATEGY
TITLE
Concept Plan for Future Integrated Transport Network
DRAWN NB
REVISION C
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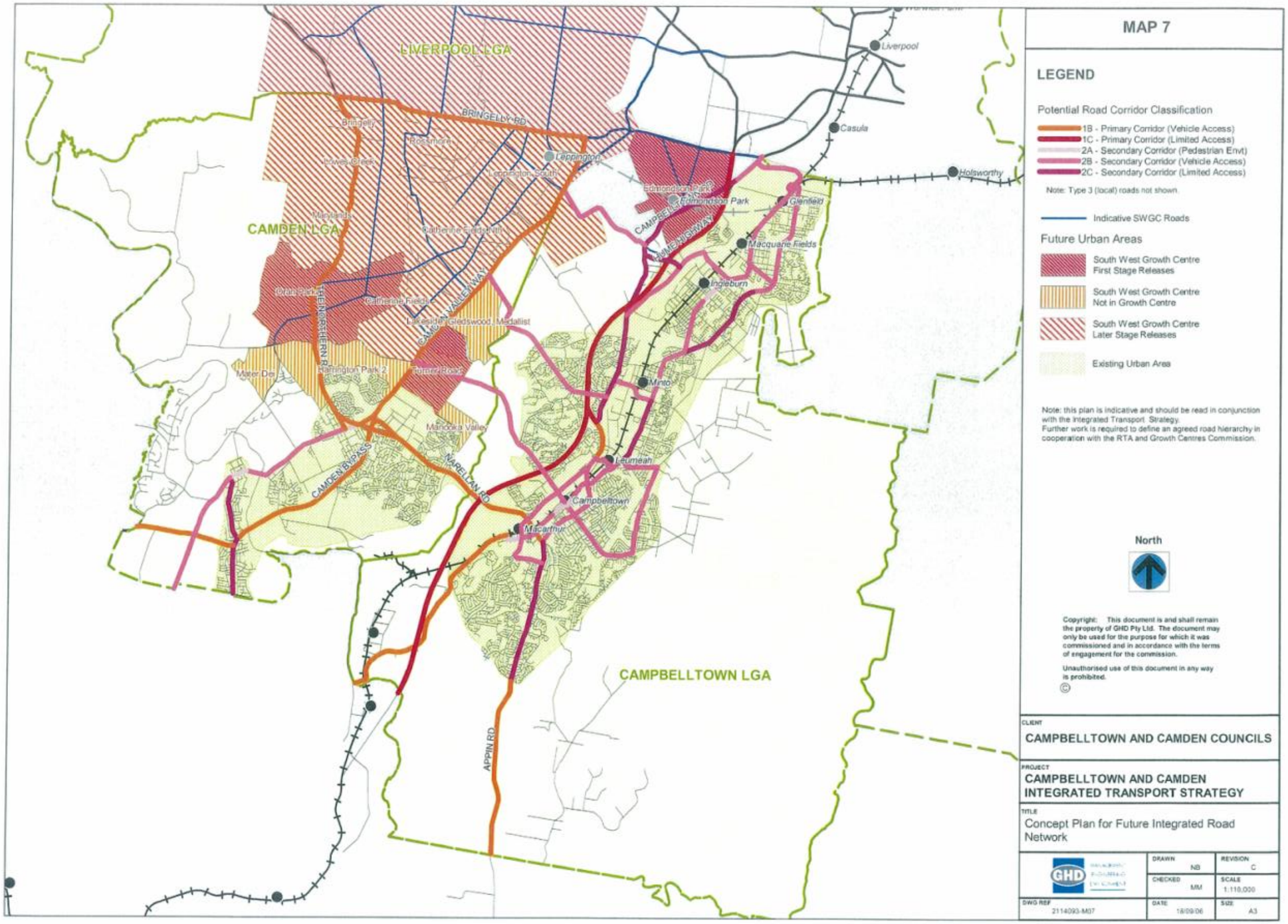
SCALE 1:110,000
DWG REF 2114063-M06
DATE 18/09/06
SIZE A3
LIVERPOOL LGA
CAMDEN LGA
CAMPBELLTOWN LGA
BRINGELLY RD
CAMPBELL HIGHWAY
CAMDEN VALLEY WAY
CAMDEN BYPASS
NARELLAN RD
APPIN RD
Liverpool
Casula
Holsworthy
Glenfield
Edmondson Park
Macquarie Fields
Ingleburn
Minto
Leumeah
Campbelltown
Macarthur
Leppington
Leppington South
Bringelly
Rossmore
Lowes Creek
Maryland
Catherine Fields North
Bardia
Farrington Fields
Lakeside/Gledswood/Medallist
Mater Dei
Harrington Park 2
Turner Road
Manooka Valley


MAP 7
LEGEND
Potential Road Corridor Classification
1B - Primary Corridor (Vehicle Access)
1C - Primary Corridor (Limited Access)
2A - Secondary Corridor (Pedestrian Envt)
2B - Secondary Corridor (Vehicle Access)
2C - Secondary Corridor (Limited Access)
Note: Type 3 (local) roads not shown.
Indicative SWGC Roads
Future Urban Areas
South West Growth Centre First Stage Releases
South West Growth Centre Not in Growth Centre
South West Growth Centre Later Stage Releases
Existing Urban Area
Note: this plan is indicative and should be read in conjunction with the Integrated Transport Strategy.
Further work is required to define an agreed road hierarchy in cooperation with the RTA and Growth Centres Commission.
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CAMPBELLTOWN AND CAMDEN COUNCILS
PROJECT
CAMPBELLTOWN AND CAMDEN INTEGRATED TRANSPORT STRATEGY
TITLE
Concept Plan for Future Integrated Road Network
GHD
DRAWN NB
REVISION C
CHECKED MM
SCALE 1:110,000
DWG REF 2114093-M07
DATE 18/09/06
SIZE A3
LIVERPOOL LGA
CAMDEN LGA
CAMPBELLTOWN LGA
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CAMDEN VALLEY WAY
THE NORTHERN RD
CAMDEN BYPASS
NARELLAN RD
APPIN RD
Liverpool
Casula
Holsworthy
Glenfield
Macquarie Fields
Ingleburn
Minto
Leumeah
Campbelltown
Macarthur
Leppington
Bringelly
Rossmore
Lowes Creek
Leppington South
Edmondson Park
Maryland
Catherine Fields
Oran Park
Catherine Fields
Lakeside
Gledswood
Medallist
Harrington Park 2
Mater Dei
Mandoka Valley

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Document Status

Rev No.	Author	Reviewer		Approved for Issue		
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2	M McKibbin	S Smyth		S Smyth		12/9/06
3	M McKibbin	S Smyth		S Smyth		12/9/06