Marrickville Metro

Traffic Management and Accessibility Plan (Incorporating Traffic and Parking Study)

July 2010

Prepared for

AMP Capital Investors

Halcrow

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This report has been issued and amended as follows:

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0	Advanced Draft for Client review	13/05/10	NI / PT	BM
1	Draft with changes	25/05/10	PT	BM
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Executive Summary

Introduction

Halcrow has been engaged by AMP Capital Investors to prepare this Traffic Management and Accessibility Plan (TMAP) report to accompany a Concept Plan Application under Part 3A of the *Environmental Planning and Assessment Act 1979* for the proposed redevelopment of the Marrickville Metro Shopping Centre.

A TMAP is required in accordance with NSW Planning Director General Requirements for the Part 3A Application. This TMAP has been prepared in conformance with the objectives of the Interim Traffic Management and Accessibility Plan Guidelines (2001).

TMAP Objectives

The TMAP provides a plan which would:

- Reduce the growth of car based trips;
- Support and improve sustainable transport facilities for existing users of public transport, walking and cycling to the site;
- Create a shift from private vehicles to public transport through improved accessibility and servicing; and
- Manage the increase in freight movements for the centre expansion.

The TMAP sets the following targets for site access:

- Car based trips – the existing percentage in car based trips not to increase;
- Staff and customers – 22.5% of future person trips by public transport, taxis, walking or cycling compared with current mode share of about 18.5%;
- Safety – access by road and by public transport, walking and cycling will be as safe and efficient as possible;
- Green Travel Plan and Transport Access Guide – these will be prepared to promote sustainable travel to and from the centre; and
- Freight – deliveries will be well managed, entirely within the site.

Proposal

The proposed upgrade and expansions of Marrickville Metro Shopping Centre consists of following key elements:

- Increase retail floor area from about 23,000m^2 to about 44,000m^2 with:
  - An extension of retail floor area at first floor level above the existing shopping centre building;
  - Redevelopment of the existing industrial site south of Smidmore Street (13-55 Edinburgh Road) to create a two level retail addition to the shopping centre.
- The closure of Smidmore Street between Edinburgh Road and Murray Street in order to create a new pedestrian plaza including a two storey retail link and car parking access; and
- Additional roof car parking to increase total parking to about 1,815 parking spaces.

Proposed Transport Improvements

Based on a full appraisal of the existing transport situation, the TMAP recommends the following key transport improvements:

- Three new bus stops on Edinburgh Road providing a new bus terminal for existing services and direct access to the expanded shopping centre;
- Improvements to pedestrian routes to Sydenham and St Peters rail stations;
- Improvements to local footpaths for pedestrians;
- New dedicated bicycle parking for cyclists and proposed improvements, or connections to, local bike routes;
- A new taxi rank with a shelter and seats;
- Provision of dedicated car share spaces within the new car park to encourage car sharing; and
- A Green Travel Plan.

Future Road Works

The following intersection improvements are proposed as part of the expansion development:

- Edgeware Road, Alice Street & Llewellyn Street intersection – Extend the length of existing parking restrictions on the Edgeware Road southbound approach and the Alice Street approach during peak periods;

- Unwins Bridge Road, Bedwin Road, May Street & Campbell Street intersection – Extend parking restrictions to create a dedicated left slip lane on the Unwins Bridge Road eastbound approach and a dedicated right-turn lane on the May Street westbound approach (with associated right-turn priority signal phase);
- Edinburgh Road, Edgeware Road & Bedwin Road intersection – Directional signage to encourage drivers to avoid the right-turn on to Bedwin Road in favour of using the Railway Parade underpass and left-turn on to Bedwin Road; and
- Edinburgh Road & Sydney Street intersection – Provide a new roundabout.

Traffic Implications

- The proposed development is expected to attract traffic mainly from the east, south and west;
- Little traffic growth is expected to/from the north as any new patronage from the north would be offset by reduced shopping traffic by Marrickville residents to/from the north due to interception by the expanded shopping centre;
- Subject to implementation of the proposed road improvements, post development traffic conditions are expected to be satisfactory.

Parking and Loading

- A total of 715 additional parking spaces are proposed;
- This represents a reduction below the current supply rate but would be consistent with RTA guidelines and appropriate for the size of centre proposed;
- A guidance system indicating the number of parking spaces on each parking level is proposed to make parking easier to find;
- Provision of three ramps to/form the parking will ensure that the centre traffic spreads well on the surrounding road system and minimises concentrations at any one point;
- Three major enclosed loading areas are proposed. These will allow all loading and loading manoeuvres to take place off street which represents a major improvement on the existing situation.

Conclusions and Recommendations

It is concluded from the analysis above that:

- Subject to recommended improvements, traffic effects of the proposal would be satisfactory;
- The proposed parking provision is appropriate;
- Proposed internal traffic and loading arrangements would be satisfactory;
- The proposed bus terminus on Edinburgh Road would afford vastly improved conditions for passengers and buses;
- Subject to improvements suggested in this report, pedestrians and bicycle access to and from the centre would be significantly improved, and
- The expanded centre would reduce expenditure from Marrickville Local Government area and in doing so would contain travel and reduce vehicle kilometres travelled compared to that which would otherwise occur.

In order to ensure that satisfactory transport outcomes would be achieved the following recommendations are made:

- Implement further pedestrian improvements outlined in Section 7.3 of this report;
- Implement cyclist improvements outline in Section 7.4 of this report including the provision of bicycle parking and showers at the centre;
- Implement road improvements outlined in Section 7.8 of this report;
- Provide two car share spaces and negotiate with an operator to provide a car share service on the site; and
- Prepare a Green Travel Guide and Transport Access Guide for the centre including signage and travel information.

1 Introduction

Halcrow has been engaged by AMP Capital Investors to prepare this Traffic Management and Accessibility Plan (TMAP) report to accompany a Concept Plan Application under Part 3A of the *Environmental Planning and Assessment Act 1979* for the proposed redevelopment of the Marrickville Metro Shopping Centre.

The proposal involves the closure of Smidmore Street, adjacent to the site and expansion of the centre across Smidmore Street to a second site (13-55 Edinburgh Street) on the southern side of Smidmore Street. Centre retail floor space is proposed to increase from about 23,000m^2 to about 44,000m^2.

A TMAP is required in accordance with NSW Planning Director General Requirements for the Part 3A Application as follows.

7. Provide a Traffic Management an Accessibility Plan (TMAP) prepared in accordance with the Draft Interim TMAP Guidelines.

This TMAP has been prepared in conformance with the objectives of the *Interim Traffic Management and Accessibility Plan Guidelines* (2001) and covers:

- The site's location and strategic context;
- Objectives and environmental targets;
- Existing traffic and transport conditions;
- Suggested public transport, traffic and active mode transport improvements;
- A draft Green Travel Plan, and
- Construction Traffic Management.

2 Site Location

Marrickville Metro Shopping Centre is located at 34 Victoria Road, Marrickville. The existing shopping centre fronts Victoria Road to the north, Murray Street to the east and Smidmore Street to the south and is adjoined by single storey residential dwellings to the west. The location of the shopping centre, along with the surrounding road network, is shown in **Figure 1**.

The shopping centre is predominantly a single level retail building. Its major tenants are Kmart, Woolworths and Aldi. Car parking is located on the roof with vehicle ramp access via Smidmore Street and Murray Street.

The surrounding land use is predominantly industrial to the south and south-west of the site and residential to the north, east and west.

The site at 13-55 Edinburgh Road is located to the south of Smidmore Street and is bounded by Edinburgh Road and Murray Street. It is currently used as a warehouse party equipment rental and supply business with associated ground level car parking.

2.1 Overview of the Proposed Development

AMPCI proposes to upgrade and expand Marrickville Metro Shopping Centre to accommodate additional retail floor space, improved facilities and services, as well as enhanced convenience and accessibility for the community.

The proposal has three key elements:

- An extension of retail floor area at first floor level above the existing shopping centre building with further additional roof top parking above;
- Redevelopment of the existing industrial site south of Smidmore Street (13-55 Edinburgh Road) to create a two level retail addition to the shopping centre with car parking above.
- The closure of Smidmore Street between Edinburgh Road and Murray Street in order to create a new pedestrian plaza including a two storey retail link and car parking access.

SITE LOCATION

MARRICKVILLE METRO TMAP

North

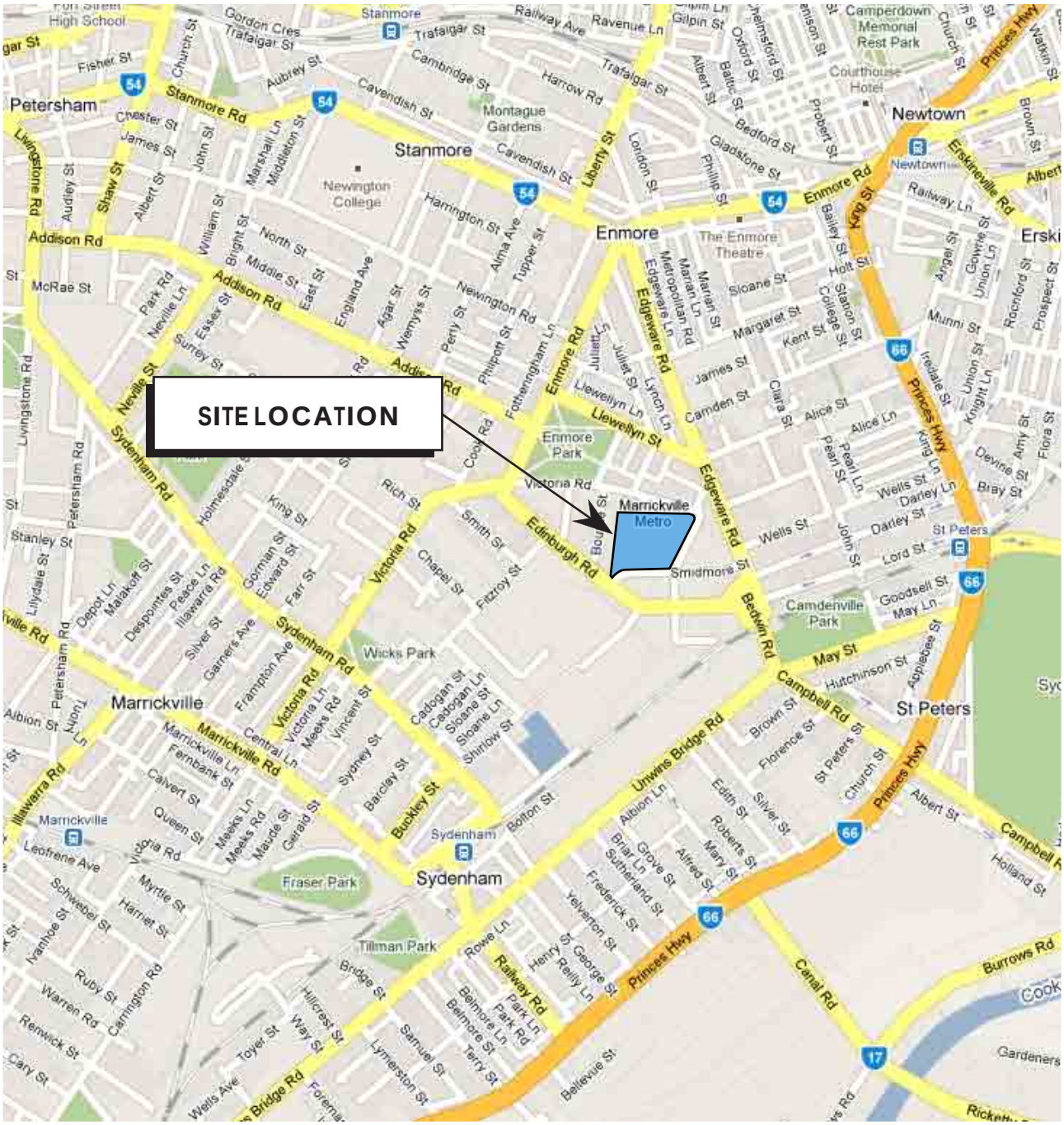

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Figure 1

Filename: CTLRGWdi04.ai

Date: 11 May 2010

Marrickville Metro currently comprises some 29,568m^2 of gross floor space, including a retail component of 22,933m^2. The proposal incorporates an additional 21,470m^2 of new retail floor space, including a second discount department store (8,000m^2) and an additional full-line supermarket of 4,000m^2. The centre will also include over 500m^2 of non-retail community facilities and about 1,815 parking spaces.

The proposal will create a new urban plaza in Smidmore Street which will be complimentary to an enhanced public space fronting Victoria Road.

A copy of the plans are contained in **Appendix A**.

3 Strategic Context

3.1 Strategic Planning Policy and Plans

This section outlines government plans and strategies which provide a transport context within which this proposed development should be considered.

3.1.1 NSW State Plan

The NSW State Plan 2006 defines the NSW Government's overarching goals and priorities for action. It is intended to set a framework for linking the various other NSW Government plans and policies, including the Metropolitan Strategy.

Transport-relevant goals include:

- A high quality transport system
- Practical environmental solutions
- Improved urban environments

Beneath these goals are a number of transport-relevant priorities with associated targets.

The priorities are:

- Increasing share of peak hour journeys on a safe and reliable public transport system
- Safer roads
- Cleaner air and progress on greenhouse gas reduction
- Jobs closer to home
- Improve the efficiency of the road network

3.1.2 Metropolitan Strategy and Metropolitan transport plan

The Metropolitan Strategy (December 2005) outlines a broad framework vision for the future growth of the Sydney metropolitan area to 2031. The strategy proposes the concentration of growth in centers by identifying housing and employment capacity targets for Sydney's sub regions and strategic centers.

3.1.3 The Metropolitan Strategy

The Metropolitan Strategy's transport vision for Sydney is "… neighbourhoods with improved local transport, with walking and cycling facilities and bus services to major centres. People will be able to carry out more of their trips closer to home, reducing the time taken and cost of longer trips".

Transport actions proposed by the Metro Strategy are:

- Improve transport between Sydney's centres
- Improve the existing transport system
- Influence travel choices to encourage more sustainable travel
- Improve transport decision-making, planning, evaluation and funding:
- Ensure sufficient port capacity is available to serve Sydney:
- Improve the efficiency of all types of freight movements in Sydney:
- Connect the regions and economic gateways within the GMR:
- Minimise the adverse impacts from freight movements

A review of the Metropolitan Strategy is presently underway and is expected to be completed by the end of 2010.

3.1.4 Metropolitan Transport Plan

This was released in February 2010 and provides a 25 year vision for the linking of Sydney's land use planning with its transport network. It is intended that this plan be merged with the updated Metropolitan Strategy when it is completed. The plan includes a 10 year funding guarantee for essential transport infrastructure and services.

The plan includes:

- The $4.5 billion Western Express City Rail Service – a separate dedicated rail track to slash travelling times from Western Sydney to the city.
- Start of work on the $6.75 billion North West rail link from Epping to Rouse Hill.
- A $500 million expansion of the current light rail system with an extension from Lilyfield to Dulwich Hill.
- Improvement to bus services – including 1000 new buses in strategic bus corridors.
- New trains – addition of 626 rail carriages.

- $158 million for cycleway.
- $400 million for commuter car park.
- $225 millions for ferries.
- $536 million for motorway planning, transit corridor reservations and land acquisition.
- $483 million to deliver important freight works in Sydney.
- $21.9 million of State and Federal Funded road projects.

3.1.5 State Environmental Planning Policy No. 66 – Integrating Land Use and Transport

The Integrating Land Use & Transport policy has since been withdrawn. However it included a set of guidelines with incorporating Accessible Development Principles which still remain applicable.

The Accessible Development Principles are:

1. Develop concentrated centres of housing, employment, services and public facilities within an acceptable walking distance (400 to 1,000m) of major public transport nodes, such as railway stations and high frequency bus routes with at least a 15-minute frequency at peak times.
2. Encourage a mix of housing, employment, services, public facilities and other compatible land uses, in accessible centres.
3. Concentrate high density, mixed use, accessible centres along major public transport corridors within urban areas.
4. Plan and implement public transport infrastructure and services in conjunction with land use strategies to maximise access along corridors, and to and from centres.
5. Provide street networks with multiple and direct connections to public transport services and efficient access for buses.
6. Provide walkable environments and give greater priority to access for pedestrians, including access for people with disabilities.
7. Maximise cyclists' accessibility to centres, services, facilities and employment locations.
8. Use the location, supply and availability of parking to discourage car use.
9. Improve transport choice and propose an integrated transport approach by management road traffic flow and priority of transport modes.

10. Design with an emphasis on the needs of pedestrians, cyclists and public transport users.

3.2 Local Planning and Policy

3.2.1 Marrickville Council Strategic Plan 2006-2011

The document sets objectives to guide development and foster sustainable transport. It promotes a community that is safe, accessible, pedestrian friendly, and ecologically sustainable by seeking more sustainable forms of transport, developing appropriate infrastructure and long term and responsive urban planning strategies.

Importantly the Strategic Plan aims to plan, promote and lobby for a sustainable and integrated transport system that improves the quality of life for the people of Marrickville and creates a built environment that is accessible to all residents and maximises the use of public transport and other alternatives to car use.

3.2.2 Marrickville Council's LEP 2010 and DCP

Marrickville Council is undertaking a major review of its LEP and DCP. This review responds to the NSW State Government's planning reform program. The review will result in the preparation of a new comprehensive local environmental plan (LEP) and consolidated development control plan (DCP) for the Marrickville local government area.

A preliminary draft Marrickville Local Environment Plan 2010 has been issued however the Marrickville Local Environmental Plan, 2001 is the current document.

The specific objectives of the current DCP 19 plan are:

a) To improve the integration between land use and existing transport networks.
b) To facilitate the safe entry and exit of vehicles and pedestrians.
c) To ensure the effective design of parking areas.
d) To provide convenient and safe parking for residents, workers and visitors and ensure the safety of pedestrians in the design of car parking areas.
e) To encourage the use of bicycles as an alternate form of transport for work and non-work trips and enable the implementation and development of strategies contained in the Marrickville Bicycle Plan.

f) To ensure the provision of adequate delivery and service areas and the orderly and effective operation of delivery and service areas within developments.
g) To promote recognition and acceptance within the community of the equal rights of persons with disabilities to access buildings and areas required to be accessible.
h) To ensure that an appropriate level of public parking facilities are provided for use by shoppers and workers within the Marrickville Business Centre.
i) To maintain the visual and environmental quality of the built environment.
j) To ensure that car parking provision meets business and community demand.

3.2.3 Marrickville Urban Strategy, 2007

The Urban Strategy provides the planning context for future development across the Marrickville LGA.

It establishes a vision and coordinated directions addressing a range of planning, community, and environmental issues, to guide short, medium and long term strategic planning policies.

The strategy directions are:

1. Continue to support Marrickville's diverse community;
2. Focus new residential development at existing centres with good public transport and
3. services to improve housing choice;
4. Strengthen and renew the Marrickville/Sydenham strategic employment lands;
5. Enhance the distinctive character of local centres;
6. Improve local public transport, walking and cycling connections to centres;
7. Continue to improve local parks and public domain in centres;
8. Investigate opportunities to increase community facilities; and
9. Continue to improve the environment with a focus on the Cooks River and creating
10. New "green corridors" linking the River to the Hawthorne Canal and Sydney Park.

Transport and Access Objectives in the Strategy are:

1. Integrate land use and transport
    a. Focus new development in areas within walking distance of centres and public transport.
    b. Consider local transport in the centre planning process.

c. Review development controls to prioritise walking, cycling and access to public transport.
d. Consider access and mobility for all residents.
e. Manage the impacts of major roads and traffic generating activities.

2. Plan for a sustainable and integrated transport system
    a. Finalise and implement the *Integrated Transport Plan*.

The Strategy nominates Marrickville Metro as a stand alone Shopping Centre. Marrickville Metro character is described in the document as:

- Stand along shopping centre.
- Provides a mix of supermarkets, discount department store, specialty food and clothing.
- Surrounding residential region includes heritage items.
- To the north there are dwellings on fine-grain lots with rear lanes.
- To the west there is larger single-storey row-style or semi-detached dwellings.
- Street closures minimize through traffic in local residential streets.
- Limited bus services.

The opportunities for the Marrickville Metro character are described in the document as:

- Improve public transport, walking and cycling access to Marrickville Metro to integrate with surrounding community.
- High amenity in Enmore Park.
- Improve connections to Newtown, Enmore, St Peters and Sydenham.
- Opportunities for improved community facilities and retail.

3.2.4 Marrickville Active Transport Guide

Council has produced an Active Transport Guide, which includes a map and information you need to know when cycling, walking or using public transport in the local area.

The map includes on-road and off-road cycling routes, bus routes with stops, City Rail train stations, walking tracks, accessible pedestrian pathways and bicycle parking.

Featured destinations include parks, schools, shopping strips, childcare centres, neighbourhood information centres, libraries and other amenities.

3.2.5 Bicycle Strategy

Council adopted the Marrickville Bicycle Strategy in August 2007 following extensive community consultation.

The Strategy encompasses:

- A bicycle network plan
- A bicycle parking plan
- Better integration with public transport
- Bicycle-friendly streets & neighbourhoods.

The strategy identifies 12 Regional Routes (RR) covering approximately 50 km and 20 Local Routes (LR) across the local government area covering 45 km. Total implementation cost was estimated in excess of $7 million.

The strategy helps to build on the existing network to encourage bicycle riding within the local area.

3.2.6 SSROC Regional Bicycle Strategy

In late 2006/07 SSROC convened a working group of inner-Sydney councils to develop a regional bike plan map. The map was developed to co-ordinate the bike plans of the various councils, identify key regional routes and act as an advocacy tool for increased funding of these regional routes.

The bicycle strategy aims to:

- Ensure the Bicycle Strategy is supported by strategic plans – in particular, the Management Plan, Marrickville Urban Strategy, St Peters and Marrickville Railway Precinct Revitalisation Plans and the Parramatta Road Corridor Study
- Ensure the Bicycle Strategy is supported by all DCPs and other relevant Council policies – in particular, improve the bicycle parking section of DCP 19

- Continue to implement social programs to support cycling – including Travel Smart walk/cycle to school projects, cycling information on Council's website and promotion of cycling at events

3.3 Comment on Strategic Context

Many of the underlying themes of the strategies have relevance to the proposal. Current State Policies provide a good framework to support local strategies to improve the level of accessibility and sustainable transport for the area.

A list of objectives has been developed for this TMAP in the following section which aim to support the State and Local Strategies.

4 Objectives of the TMAP

4.1 Objectives

This TMAP will guide future sustainable development of the Marrickville Metro.

The TMAP is intended to provide a plan which would:

- Reduce the growth of car based trips;
- Support and improve sustainable transport facilities for existing users of public transport, walking and cycling to the site;
- Create a shift from private vehicles to public transport through improved accessibility and servicing;
- Manage the increase in freight movements for the centre expansion, and
- Improve the liveability of the inner city.

Key TMAP outcomes are to:

- Identify measures to improve transport network, corridors and services to integrate walking cycling and public transport and traffic management to achieve sustainable outcomes;
- Identify travel demand management programs to encourage use of public transport; and
- At the same time ensure that appropriate provisions are made for car parking and for traffic travelling to and from the centre.

4.1.1 Considerations

The development site and the nature of site have a number of advantages in relation to the achievement of TMAP objectives, namely:

- there is walkable access to rail services (St Peters < 800 metres, Sydenham < 1,000 metres);
- there is direct access to STA bus services (3 routes) running past the site and there are an additional 3 bus services within relatively close walking distance to the site;
- there are well developed pedestrian and cyclist networks in the area;

- there is an existing high walking and cycling mode share to / from the existing centre and within the Local Government area generally;
- the peak traffic generating activity occurs on weekends and not during the normal weekday morning and afternoon peak periods in addition the arrival and departure times of staff are very spread and tend to be outside the normal commuter peak periods.

4.2 Environmental Targets

The primary targets for site access will be:

- Car based trips – the existing percentage in car based trips not to increase.
- Staff and customers – 22.5% of future person trips by public transport, taxis, walking or cycling compared with current mode share of about 18.5%;
- Safety – access by road and by public transport, walking and cycling will be as safe and efficient as possible;
- Transport Access Guide – preparation and maintenance guides for staff and for patrons will be a priority; and
- Freight – deliveries will be well managed, entirely within the site.

While the increase in persons travelling by public transport, walking or cycling may seem small, it would in fact represent a considerable achievement because the centre already has extremely high penetration within its walk in trade area. Thus improvement measure will principally need to influence longer distance trips.

5 Existing Travel Characteristics and Forecast Growth

5.1 Marrickville Travel Characteristics

Council's Integrated Transport Strategy (August 2007) identified that 80% of all shopping trips were less than 5 kilometres in length and that 50% of all trips were less than 2km in length for Marrickville residents (source TPDC Household Travel Survey 2004).

By comparison less than 35% of commuting work trips were less than 5km in length. Because Marrickville Metro is a local employer of staff, its population of employees living within 5km is much higher than 35%.

5.2 Mode Share

To determine how people travel to/from the centre, surveys (including a customer interview, door count, vehicle access count and vehicle occupancy) were conducted at the centre on:

- Thursday 22 April 2010 between 3:30 pm and 6:30 pm; and
- Saturday 24 April 2010 between 10:30 am and 1:30 pm.

Sample surveys were carried out on people entering the centre at the Victoria Road and Smidmore Street entrances. Shoppers and employees were asked how they arrived and how they intended to leave the centre. Door counts were also undertaken at these entrances.

The vehicle access points were also surveyed to determine the number of car drivers and passengers entering the centre.

The results of the mode share analysis are shown in **Table 5.1**.

Table 5.1 – Marrickville Metro Travel Modes

Mode	Thursday PM Peak 3:30 – 6:30 pm	Saturday Midday Peak 10:30 am – 1:30 pm
Car Drivers	52.9%	48.1%
Car Passengers	24.9%	31.3%
Walk	16.0%	14.8%
Bus	3.1%	1.9%
Dropped Off	1.9%	1.9%
Bicycle	0.8%	1.5%
Taxi	0.2%	0.5%
Train	0.2%	0.0%
TOTAL	**100.0%**	**100.0%**

These results show that a relatively high percentage of trips are made by walking. A low number of customers travelled by train. On the Thursday 77.8% and on the Saturday 79.4% of persons travelled by car. On average about 18.5% of persons travelled by non car modes.

5.3 Population Growth

The most recent projections of population growth by the state at SLA level were published in 2010. A summary of existing and projected future population is presented in **Table 5.2**.

Table 5.2 – Comparison of projections of population, from 2006 to 2021

	Population - 2006	Population - 2036	Difference
2010 Projections			
Marrickville LGA[1]	75,500	88,000	+ 12,500 (16.6%)

Note – 2005 SLA projections use the 2005 Australian Standard Geographical Classification (ASGC 2005).
Source: New South Wales Statistical Local Area Population Projections 2001-2036, NSW Government Department of Planning 2010

This growth enhances the need to provide local facilities that can reduce the need for residents to travel out of the local area.

[1] Sydney LGA is aggregation of SLAs 7201, 7203 and 7205

6 Existing Transport Situation

6.1 Road Network

6.1.1 Road Network Description

The roads in the area are briefly described below.

Enmore Road, between Stanmore Road and Victoria Road, combined with **Victoria Road** (west) forms part of a north-south sub-arterial corridor linking Marrickville and Sydenham with Enmore, Stanmore and Newtown.

In the vicinity of the Marrickville Metro, Enmore Road is a four-lane undivided road (two lanes each-way) with a designated speed limit of 60 km/h.

King Street/Princes Highway is a north – south arterial linking the southern metropolitan areas with the City.

Edgeware Road, combined with **Bedwin Road**, also forms part of a north-south sub-arterial corridor to the east of Marrickville Metro. Edgeware Road links St Peters with Enmore, Stanmore and Newtown and provides access, via Campbell or May Streets, to the Princes Highway.

In the vicinity of the Marrickville Metro, Edgeware Road is a four-lane undivided road (two lanes each-way) with a designated speed limit of 60 km/h.

Unwins Bridge Road is a sub arterial route parallel to and on the eastern side of the Illawarra railway line. It is a connector between railway crossings in St Peters and Sydenham.

Edinburgh Road is a collector road linking Edgeware Road in the east with Enmore Road/Victoria Road in the west. It provides access to both Marrickville Metro and surrounding industrial premises. In the vicinity of Marrickville Metro, Edinburgh Road is a four-lane undivided road (generally one lane each-way with kerbside parking either side) with a posted speed limit of 50 km/h.

Smidmore Street is a local road along the southern boundary of the Marrickville Metro Shopping Centre. In the vicinity of the centre, it is a two traffic lane undivided road with kerbside parking both sides. It has designated speed limit of 50 km/h.

Between Edinburgh Road and Murray Street, Smidmore Street accommodates the Marrickville Metro bus stop, a two-vehicle taxi rank and access into the Woolworths/K-Mart loading dock and specialty retail loading dock.

Murray Street is a local road along the eastern boundary of the Marrickville Metro. It provides access to the Aldi loading dock and has a pedestrian crossing near the intersection with Smidmore Street. In the vicinity of the shopping centre, it is a two-lane undivided road with kerbside parking both sides. It has a designated speed limit of 50 km/h.

Victoria Road (east) is a local road along the northern boundary of the Centre. It is closed adjacent the Juliet Street road closure. Victoria Road generally links Edgeware Road with Enmore Road as a cycle and pedestrian route but obviously due to the closure vehicles are not able to travel its full length.

The pedestrian entry off Victoria Road (east) into the shopping centre is the primary pedestrian access.

Victoria Road is used by some shoppers for parking rather than using the car park. It is also a popular cycle and pedestrian link.

6.1.2 Traffic Volumes

Traffic counts were undertaken at 18 intersections surrounding the Marrickville Metro Shopping Centre on a Thursday and a Saturday. The surveys concluded that the busiest peak hours for the road network surrounding the site were 5.00-6.00pm on a Thursday evening and 12.00-1.00pm at midday Saturday.

The peak hour results of the 2010 surveys are presented on **Figures 2** and **3** for the Thursday evening and Saturday peak periods respectively. The following **Table 6.1** presents two-way flows for links on the local road network.

2010 SURVEYED TRAFFIC FLOWS, THURSDAY PM

Marrickville Metro Shopping Centre

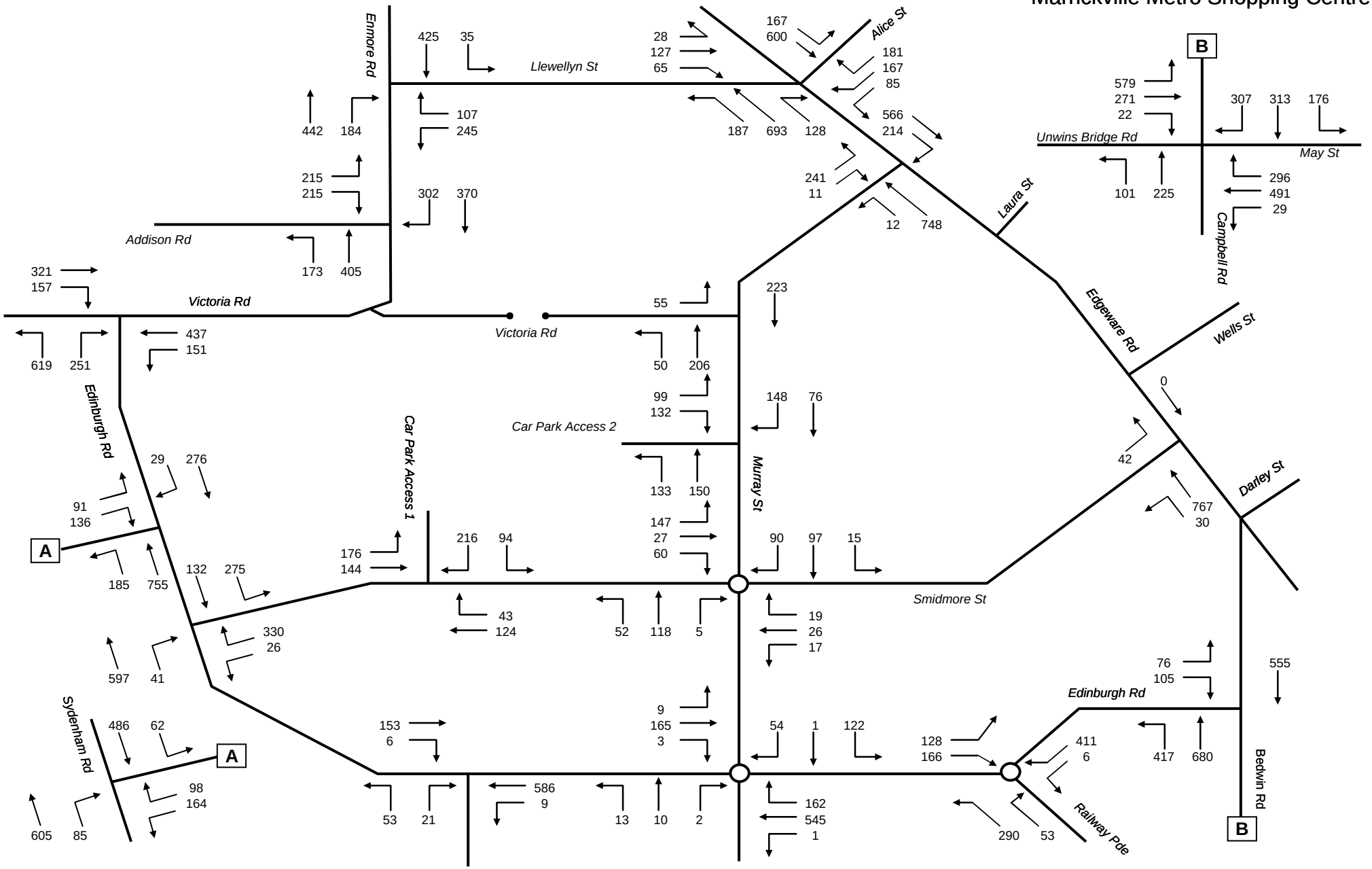

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Figure 2

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2010 SURVEYED TRAFFIC FLOWS, SATURDAY

Marrickville Metro Shopping Centre

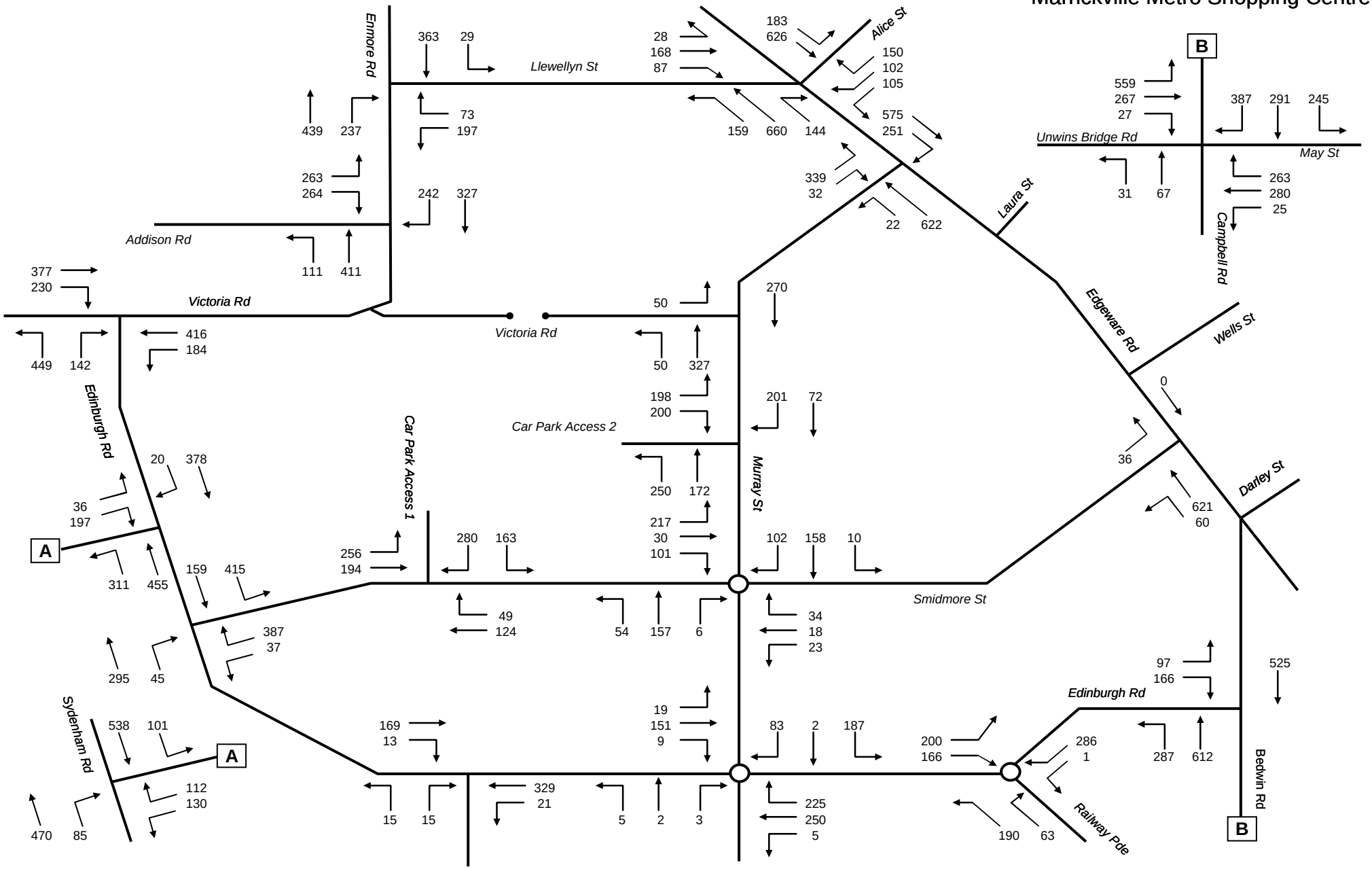

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Figure 3

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Table 6.1 – Existing Two-Way Peak Hour Traffic Volumes (vph)

Link	Location	Thursday PM	Saturday
Enmore Rd	North of Llewellyn St	1009	904
Victoria Rd	Between Edinburgh Rd & Addison Rd	1162	1116
Edgeware Rd	North of Llewellyn St & Alice St	1669	1647
Edgeware Rd	Between Victoria Rd & Llewellyn St	1764	1784
Edgeware Rd	Between Darley St & Edinburgh Rd	1311	1234
Alice St	East of Edgeware Rd	855	852
Victoria Rd	Between Murray St & Edgeware Rd	481	646
Murray St	Between Murray St Access & Smidmore St	409	540
Murray St	Between Smidmore St & Edinburgh Rd	452	575
Smidmore St	Between Murray St & Edgeware Rd	91	109
Edinburgh Rd	Between Victoria Rd & Fitzroy St	1165	947
Edinburgh Rd	Between Fitzroy St & Smidmore St	1337	1284
Edinburgh Rd	East of Smidmore St	1017	759
Edinburgh Rd	West of Sydney Steel Rd	1019	754
Edinburgh Rd	Between Sydney Steel Rd & Murray St	1001	754
Edinburgh Rd	Between Murray St & Railway Pde	996	832
Edinburgh Rd	Between Railway Pde & Bedwin Rd	598	550
Smidmore St	East of Edinburgh Rd	535	764
Fitzroy St	Between Sydenham Rd & Edinburgh Rd	409	428
Sydenham Rd	North of Fitzroy St	1251	1221
Sydenham Rd	South of Fitzroy St	1340	1223
Bedwin Rd	Between Edinburgh Rd & Unwins Bridge Rd	1896	1812
Unwins Bridge Rd	West of Bedwin Rd	1771	1551
May St	East of Bedwin Rd	1263	1080
Campbell Rd	South of Unwins Bridge Rd	690	441

The traffic counts revealed the following:

- The Edgeware Road/Bedwin Road route is designated a collector route. These routes usually carry 250-1000 vehicles per hour; however, Edgeware Road/Bedwin Road has peak hour traffic volumes which are consistent with those experienced on sub-arterial roads (1,200-1,900 vehicles per hour).
- Between Edinburgh Road and Llewellyn Street, Enmore Road/Victoria Road carries similar peak volumes of 1,100-1,300 vehicles per hour on both a Thursday evening and a Saturday midday peak.
- Local roads surrounding the Marrickville Metro Shopping Centre, such as Smidmore Street, Murray Street and Victoria Road, experience higher traffic volumes during the Saturday midday peak than during the traditional late-night

shopping on a Thursday evening. These flows are mainly associated with the shopping centre.

6.1.3 Existing Intersection Performance

Intersections surrounding the Marrickville Metro Shopping Centre were analysed using SIDRA 4.0 Intersection software to determine the existing level of intersection performance. SIDRA determines the average delay that vehicles encounter, the degree of saturation of the intersection and the corresponding level of service (LoS). The degree of saturation is the ratio of the arrival rate of vehicles to the capacity of the approach.

SIDRA provides analysis of the operating conditions which can be compared to the performance criteria set out in **Table 6.2**.

Table 6.2 – Level of Service Criteria

Level of Service	Average Delay per Vehicle (secs/veh)	Signals & Roundabouts	Give Way & Stop Signs
A	less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays & spare capacity	Acceptable delays & Spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity & accident study required
E	57 to 70	At capacity; at signals, incidents will cause excessive delays Roundabouts require other control mode	At capacity, requires other control mode
F	> 70	Extra capacity required	Extreme delay, traffic signals or other major treatment required

Adapted from RTA Guide to Traffic Generating Developments, 2002.

The results of the analysis are provided in the following **Table 6.3**.

Table 6.3 – Existing Peak Hour Intersection Operation

Intersection	Control	Thursday PM		Saturday	
		LoS	Av. Delay	LoS	Av. Delay
Enmore Rd / Llewellyn St	Signals	B	22.0	B	20.3
Addison Rd / Enmore Rd	Signals	B	25.1	B	22.6
Victoria Rd / Edinburgh Rd	Signals	B	28.1	B	27.2
Edgeware Rd / Alice St / Llewellyn St	Signals	D	51.2	D	50.5
Edgeware Rd / Victoria Rd	Signs	C	41.3	C	41.8
Edinburgh Rd / Fitzroy St	Roundabout	B	15.5	A	11.9
Fitzroy St / Sydenham Rd	Signs	A	11.5	A	12.0
Edinburgh Rd / Smidmore St	Signals	B	26.7	C	29.6
Smidmore St/ Murray St	Roundabout	A	8.0	A	8.2
Edinburgh Rd / Sydney Steel Rd	Signs	A	11.6	A	9.4
Edinburgh Rd / Murray St	Roundabout	A	11.2	A	10.7
Edinburgh Rd / Railway Pde	Roundabout	A	9.8	A	9.6
Edinburgh Rd / Bedwin Rd	Signs	B	24.8	B	24.2
Bedwin Rd / Unwins Bridge Rd / Campbell Rd / May St	Signals	F	74.5	C	28.8

Average Delay is for the worst movement at priority intersections and roundabouts

The results in **Table 6.3** provide the following insight into the current operation of critical intersections surrounding the Marrickville Metro Shopping Centre:

- The intersection of Edgeware Road, Llewellyn Street and Alice Street operates at or near capacity during both survey periods. Vehicle queues on the Edgeware Road south leg extend back past the intersection of Edgeware and Victoria Roads. This queue sometimes blocks traffic attempting to turn right into and out of Victoria Road, although for the most part drivers leave a break in the queue to allow the right turn to take place. Queues on Alice Street caused by through and right turning vehicles block vehicles turning left onto Edgeware Road;
- It is noted that the queue for vehicles attempting to turn right from Edinburgh Road into Bedwin Road sometimes extends back into the Edinburgh Road / Railway Parade roundabout during peak periods. This occurs despite it being possible for drivers to use the underpass beneath Bedwin Road to be able to make a left turn to the south instead.
- The SIDRA results for the intersection of Bedwin Road, Unwins Bridge Road, Campbell Road and May Street indicate that the intersection operates above capacity on a Thursday evening but satisfactory on a Saturday morning.

- The right-turn delay from Victoria Road into Edgeware Road, combined with mid-block disruptions from queuing traffic at the intersection of Edgeware Road, Llewellyn Street and Alice Street, results in unsatisfactory intersection operation;
- Otherwise, most minor intersections within the study network operate satisfactorily during surveyed peak periods.

6.2 Marrickville Metro Shopping Centre

6.2.1 Existing Traffic Generation

Surveys of traffic arriving at and departing the centre established the following traffic generation:

- Thursday evening – 1,041 veh/hr
- Saturday peak hour – 1,635 veh/hr

By way of comparison RTA traffic generation rates suggest that the following traffic generation rates could have been expected:

- Thursday evening 22,933m^2 @ 5.9 veh.hr/100m^2 = 1,353 veh/hr
- Saturday 22,933m^2 @ 7.5 veh.hr/100m^2 = 1,720 veh/hr

Thus the centre presently generates traffic at about 77% of the RTA rate on a Thursday evening and at about 90% of the RTA rate on a Saturday morning.

This variation is not surprising as:

- Over recent years with supermarkets trading 7 days a week and at night, Thursday evenings have declined in importance as a shopping time;
- The RTA surveys on which the traffic generation rates were based are now about 20 years old and since that time the retail space per head of population has increased somewhat; and
- Marrickville Metro has a comparatively high walking mode split for a shopping centre.

6.2.2 Parking Demand

The existing centre has about 1,080 parking spaces available to staff and customers of the centre. The spaces are time restricted to 3 hours and are free.

Peak usage was surveyed to be 978 spaces on a Saturday morning and 572 spaces on a Thursday evening. It is noted that many customers tend to circulate searching for parking on the lower, main parking level despite there being a good supply of parking on the upper level. A guidance system to indicate the amount of parking available on each level would help to minimise this occurrence.

The existing supply equates to about 4.7 spaces per 100m^2 of GLA. The peak surveyed demand was for about 4.25 spaces per 100m^2 of GLA. This is very close to the RTA's suggested parking provision rate of 4.3 spaces per 100m^2 for shopping centres in the size range of 20,000 to 30,000m^2 GLA.

6.2.3 Service vehicle parking

The site includes a number of loading bays and service vehicle parking areas in basement parking areas. Loading docks are located on Smidmore Street and Murray Street.

The Murray Street loading bays are deficient by contemporary standard as they involve vehicles reversing directly off the public street. Contemporary standards require service vehicle manoeuvring to take place within designated loading areas.

6.3 Public Transport Network

6.3.1 Bus operations

The bus routes currently servicing the shopping centre are listed below:

- 308 Marrickville Metro – City, the service (Sydney Buses) links Marrickville Metro with Millers Point via Redfern and Waterloo.
- 352 Marrickville Metro – Bondi Junction via Surry Hills, the service (Sydney Buses) operates between Bondi Junction and Marrickville Metro via Paddington and Darlinghurst.; and
- 355 Marrickville Metro – Bondi Junction, the service operates between Bondi Junction and Marrickville Metro via Alexandria, Moore Park and Surry Hills.

The bus stop for these services is located outside Marrickville Metro in Smidmore Road. There is one sheltered seat adjacent a J pole with timetable information at this stop.

The bus stop in Smidmore Road does not provide adequate seating during peak times. Accordingly shoppers tend to make use of the low wall outside the centre in an unsheltered position for seating.

Other bus routes, which run along Enmore Road located approximately 550m from the shopping centre, are:

- 423 and L23 (Prepay) Circular Quay via Enmore Park – Earlwood/Kingsgrove;
- Metro Bus 30 (prepay) Sydenham Station to Cremorne via University of Sydney and Wynyard and
- 426 Circular Quay via Enmore Park to Canterbury Station.

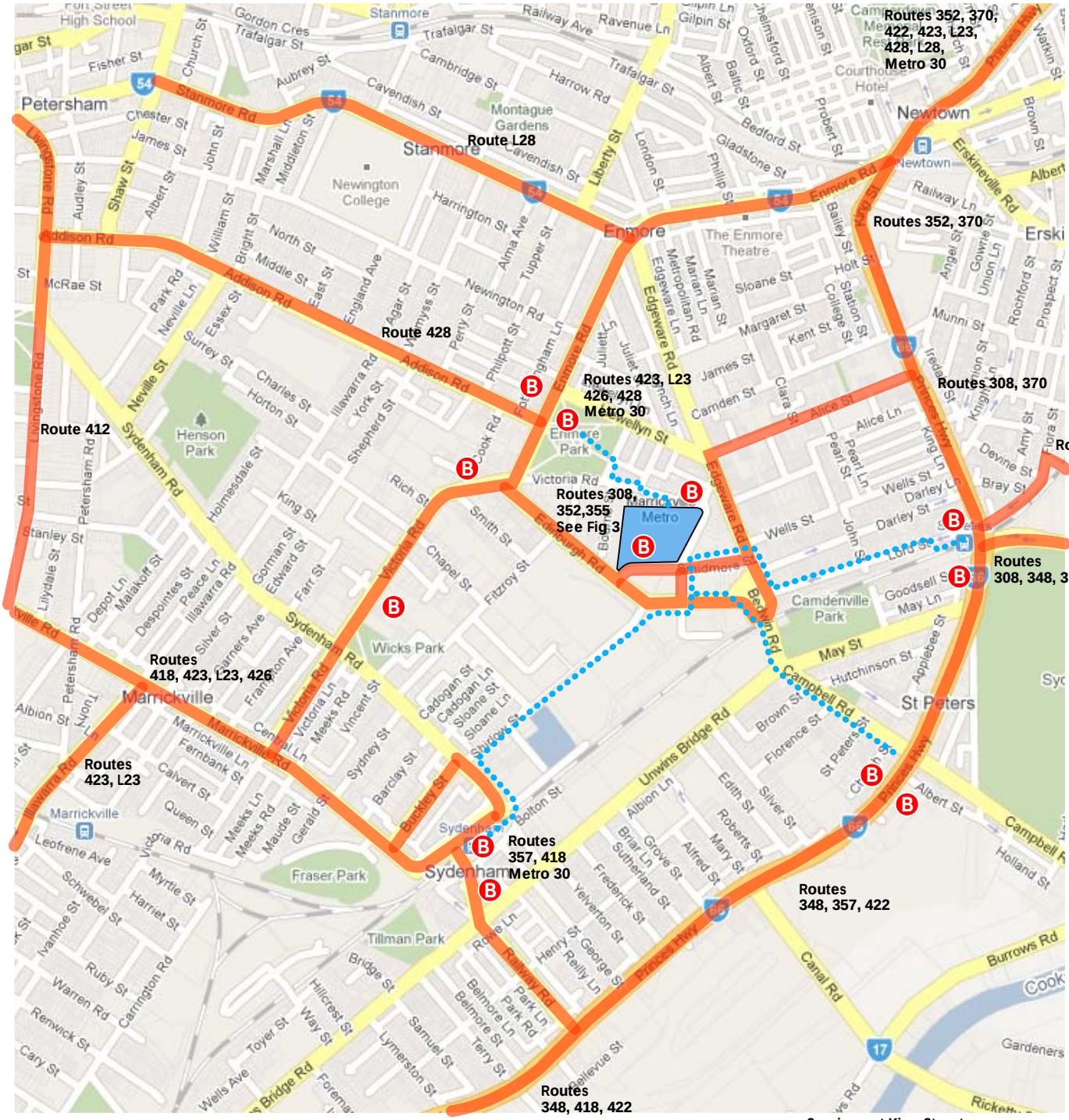
The bus stops for these routes are located on Enmore Road near Addison Road. There is 'park style' seating on the Enmore Park side as well as a bus shelter. There is a bus seat with no shelter on the western side of Enmore Road.

These routes and the corresponding closest bus stops are shown in **Figure 4**. **Figure 5** indicates the bus routes in the immediate vicinity of the centre. The frequencies of these services are also summarised in **Table 6.4**.

EXISTING BUS ROUTES AND BUS STOPS

MARRICKVILLE METRO TMAP

North



Services at Metro

308 Marrickville Metro to City
352 Marrickville to Bondi Junction
355 Marrickville to Bondi Junction

Services at Sydenham Station

357 Sydenham to Bondi Junction
418 Tempe to Burwood
30 Sydenham to Cremorne

Services at Enmore Road

423 Kingsgrove to City
426 Dulwich Hill to City
428 Canterbury to City

Services at St Peters Station

348 Wolli Creek to Bondi Junction
370 Leichhardt to Coogee

Services at King Street rear Campbell Road

357 Sydenham to Bondi Junction
348 Wolli Creek to Bondi Junction
422 Tempe to City

Key

Bus Routes
Bus Stop
Walking Routes to Bus Stops

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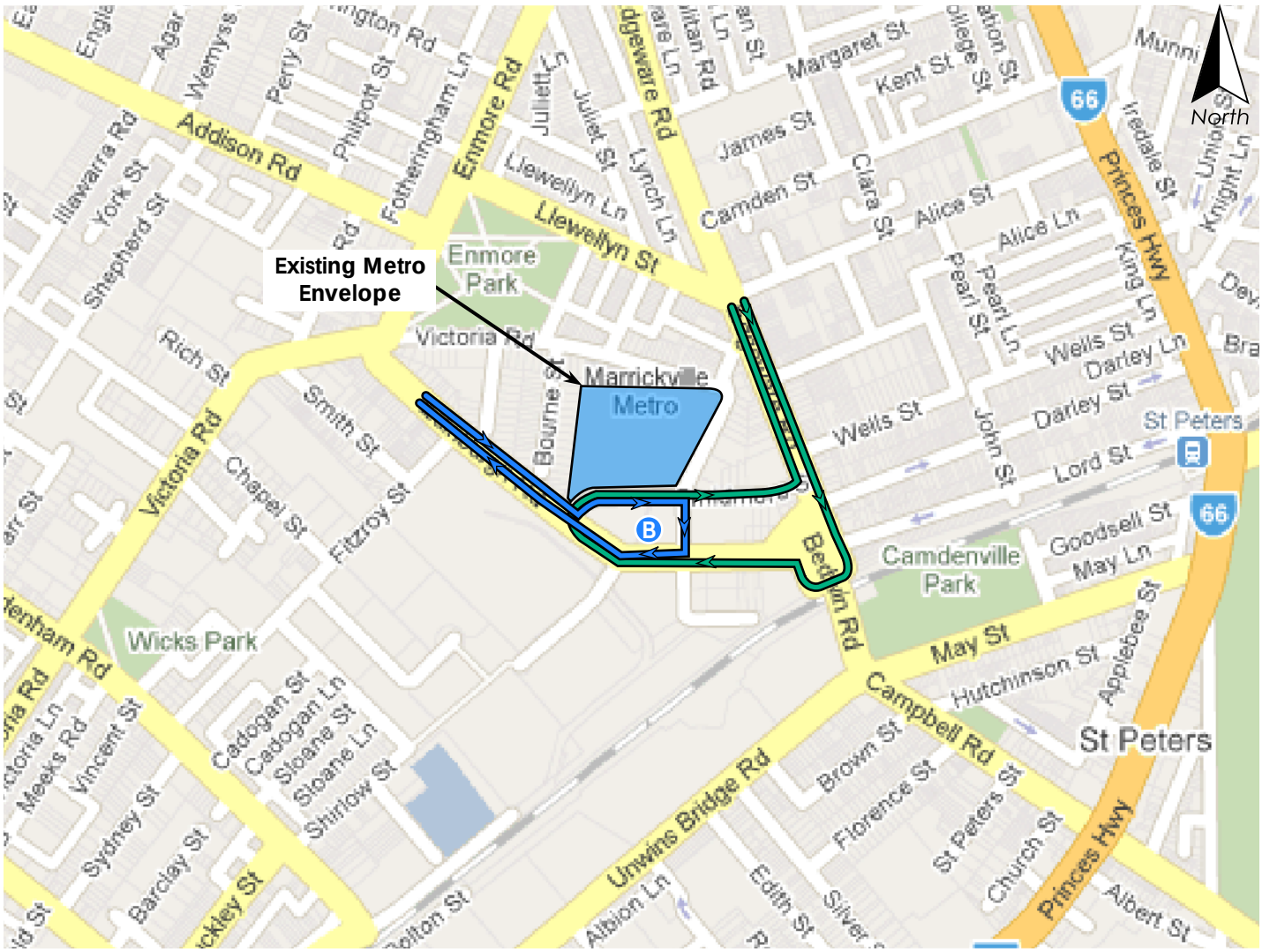
Figure 4

EXISTING BUS MOVEMENTS

MARRICKVILLE METRO TMAP



Key

- Routes 308, 352
- Route 355
- B Bus Stop

Halcrow

Figure 5

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Date: 11 May 2010

Table 6.4 – Bus Frequencies to / from Marrickville Metro

Route	Route 308 (Metro)	Route 352 (Metro)	Route 355 (Metro)	Route 423/L23 (Enmore Rd)	Metro Bus 30 (Enmore Rd)	Route 426 (Enmore Rd)
Weekday Frequency (minutes)						
Trips to / from	**City**	**Bondi Junction**	**Bondi Junction**	**City**	**Spit Junction**	**City**
AM	25-30 to City 20-25 from City	25 to Bondi Jnct 20-25 from Bondi Jnct	30 to / from Bondi Jnct	10-15 to City 10-25 from City	10 to / from Spit Jnct	5-15 to City 20-25 from City
Midday	60 to /from City	30 to / from Bondi Jnct	30 to / from Bondi Jnct	15 to /from City	15 to / from Spit Jnct	15 to /from City
PM	30 to /from City	30 to Bondi Jnct 20 from Bondi Jnct	30 to / from Bondi Jnct	20-30 to City 10-20 from city	10 to / from Spit Jnct	10-25 to City 10 from City
Weekend Frequency (minutes)						
Trips to / from	**City**	**Bondi Junction**	**Bondi Junction**	**City**	**Spit Junction**	**City**
Midday	90 to /from City	no service	30 to / from Bondi Jnct	20 to /from City	20 to / from Spit Jnct	20 to /from City

The table shows that the Marrickville Metro shopping centre has regular bus services with more buses operating during weekdays than weekends. Services at Enmore Road retain frequencies of 20 minutes on the weekend however frequencies to the shopping centre increase to 30 minutes to Bondi Junction and 90 minutes to the City.

Other bus routes operate from Sydenham Station and King Street (near St Peters Station and Campbell Road). These bus routes are also shown on **Figures 4** and **5**.

6.4 Pedestrian Facilities

Pedestrian footpaths are provided on both sides of Murray Street, Victoria Road (east), Smidmore Street and Edinburgh Road.

Footpaths in the Marrickville area vary in quality and width. The pedestrian routes to the Marrickville Metro shopping centre from local areas, and pedestrian facilities in the local area, are shown on **Figure 6**.

EXISTING PEDESTRIAN FACILITIES AND WALKING ROUTES

MARRICKVILLE METRO TMAP

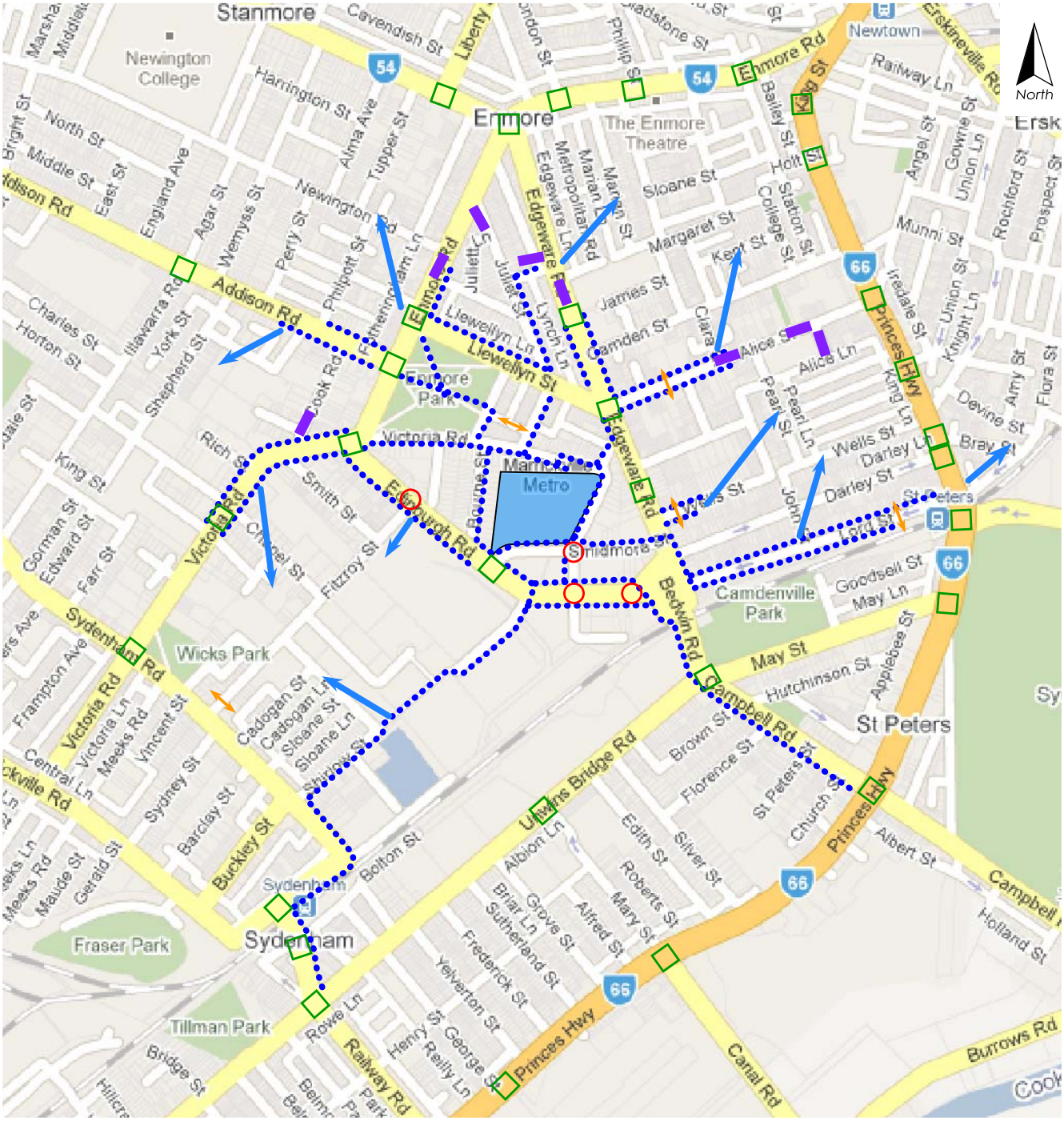

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Figure 6

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Date: 11 May 2010

In the immediate vicinity of the site are the following facilities:

- A pedestrian crossing is located on Murray Street, near the intersection with Smidmore Street;
- A signalised pedestrian crossing is provided at the intersection of Edinburgh Road and Smidmore Street;
- Splitter Traffic islands at the roundabout at the intersection at Murray and Smidmore Streets and
- Splitter Traffic islands at the roundabout at the intersection of Murray Street and Edinburgh Road.

There is a path connecting Sydney Steel Road and Shirlow Street. The path is between an industrial site and the railway line. The route has lighting along its length. The site has very little active frontage and there is evidence of vandalism along its length.

6.5 Cyclist Facilities

Bicycle routes to the Marrickville Metro shopping centre are shown on **Figure 7**.

On-road cycle route L7 connects Wicks Park, Marrickville to Enmore Theatre, Enmore. It operates along Bourne Street and Edinburgh Street in the vicinity of the Marrickville Metro Shopping Centre.

At the intersection of Llewellyn and Enmore Road, the L7 the route connects with the cross-regional L10 route which links Dulwich Hill and Lewisham with St Peters and Newtown.

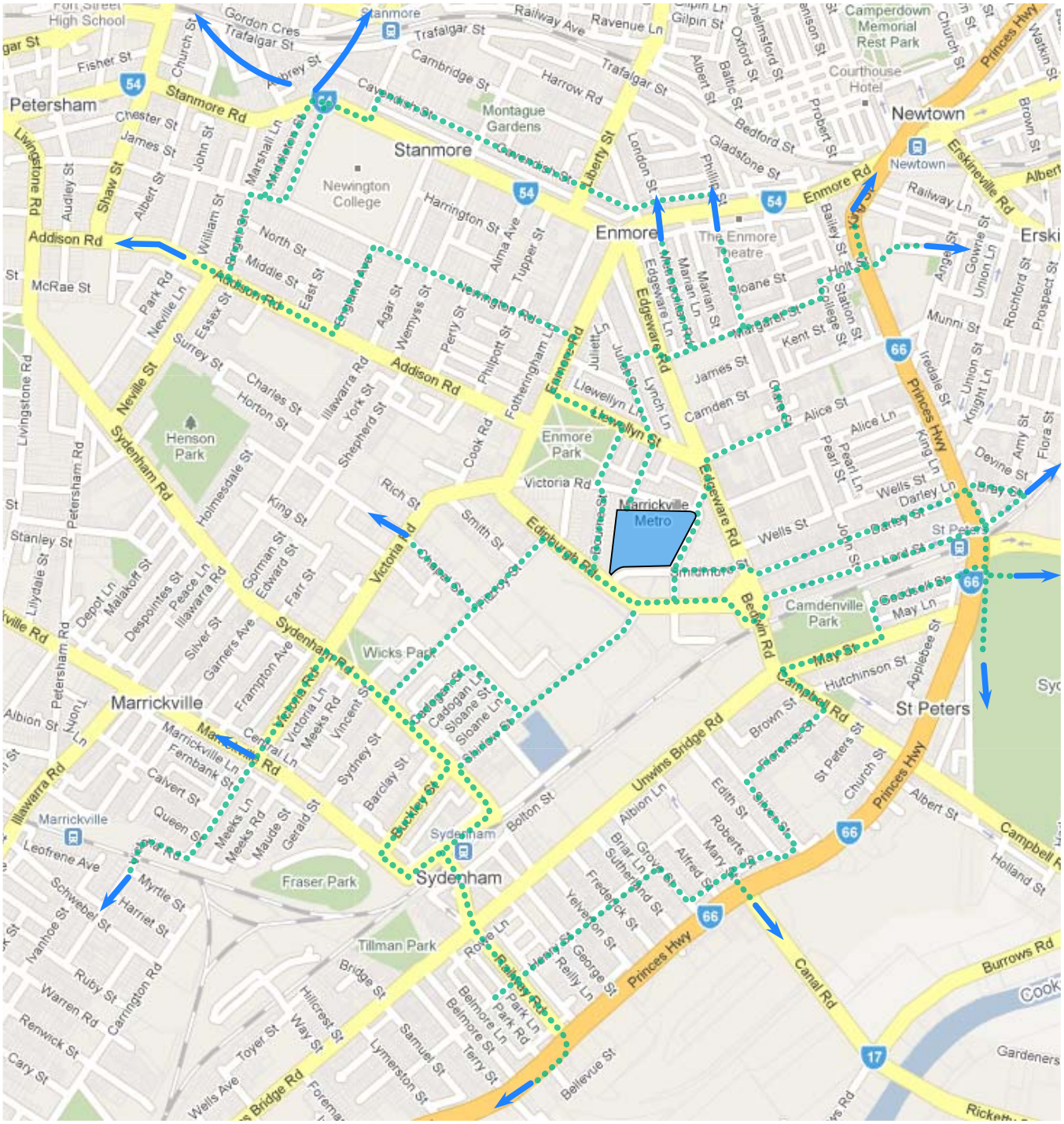
The L7 and L10 heading east link the shopping centre with St Peters Train Station.

Other 'L' bicycle connections from the L10 cross the Council area connecting the local area.

EXISTING BICYCLE ROUTES TO METRO

MARRICKVILLE METRO TMAP

North



Key

- Bicycle Routes Metro
- Connections to wider bicycle networks

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Figure 7

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Date: 11 May 2010

6.6 *Train Services*

The nearest train station is St Peters on the Bankstown line with connecting services to Marrickville, Dulwich Hill and Sydenham Stations. The Bankstown line has services to the City or Liverpool / Lidcombe via Bankstown. Train frequencies for each station are shown in **Table 6.5** below.

Sydenham Station serves the Illawarra, East Hills and Bankstown railway lines. It also interchanges with bus services connecting the area to Tempe, Burwood Heights / Ashfield, Wynyard via University of Sydney, Bondi Junction via Mascot and Randwick.

Sydenham Station connects to the following suburbs:

- Bondi Junction to Cronulla via Kogarah / Hurstville on the Illawarra line;
- City or Liverpool / Lidcombe via Bankstown on the Bankstown line; and
- Campbelltown and the City (peak hour) on the East Hills line.

Table 6.5 – Train Frequencies at Nearby Stations

Station	Sydenham					St Peters	
Trips to / from	City	Lidcombe	Bondi Junction	Cronulla	Campbell -town	City	Lidcombe
Weekday Frequency (minutes)							
AM	25-30	30	30	30	30	25-30	30
Midday	60	30	30	30	30	60	30
PM	30	30	30	30	30	30	30
Weekend Frequency (minutes)							
Midday	90	30	30	30	30	90	30

Sydenham station has no accessible service to it. Sydenham station will be inaccessible to those with reduced mobility until 2012 when the station is due to be upgraded.

6.7 *Taxi Facilities*

Taxis can play an important role for people without access to motor vehicles. The use of taxis supports public transport users, particularly at shopping centre whereby a person may arrive by public transport or walk and leave with their shopping by taxi.

Taxis are often used for out-of-hours and cross-radial trips combined with public transport or walking trips. As cost is a major barrier to use of taxis, they are particularly effective if used in conjunction with other less costly modes.

There is an existing taxi rank with one waiting space together with seating and a shelter in Smidmore Street.

6.8 Car Share

Car share is a popular form of transport for people who do not own a car but may occasionally need to use one.

Car share facilities in Marrickville are located in the following places:

- Newtown, next to Camperdown Memorial Rest Park, (four cars)
- Camperdown, at Fowler Street (one car)
- Newtown South, at Camden Street, (one car)
- Enmore, in the Edgeware Road Council car park (one car)
- Marrickville, in the Frampton Avenue Council car park (one car)
- Petersham, in the Fisher Street Council car park (recently approved for one car)

There are no car share spaces at Metro but car share vehicles were seen in the centre car park and on-street nearby.

6.9 Marrickville-Leichardt Community Transport

This service provides transport for frail aged people and people living with disabilities and their carers for shared transport. Some services operate to the Marrickville Metro shopping centre throughout the week. These shuttle buses drop off or pick up passengers on street in Smidmore Street in No Parking zones.

6.10 Implications of Trip Growth

Based on the trip growth outlined in Section 8.2 of this report, it is estimated that trip making to the centre would increase by a bit over 50% on a Thursday evening and by about 60% on a Saturday morning. It is anticipated that measures to encourage public transport and active mode travel would result in the proportion of persons visiting the

centre by car declining slightly despite the wider attraction of the expansion centre across the municipality.

This is because much of the new trade that would be attracted from within Marrickville that presently shops outside the area would tend to be car borne.

It is anticipated that this effect would be offset to some extent by increased travel by walking, cycling and public transport due to the enhancement of provisions for these.

Table 6.6 below presents an estimate of future travel to the centre by mode for the Thursday evening and Saturday midday periods for which travel surveys were conducted. These periods are indicative of outcomes through a typical week.

Table 6.6 – Existing and Future Travel Demand (Trips/hr)

Mode	Thursday Evening Peak Hour				Saturday Peak Hour			
	Existing		Future		Existing		Future	
	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number
Car Driver	52.9%	1,041	52.2%	1,567	48.1%	1,597	47.2%	2,525
Car Passenger	24.9%	490	24.6%	738	31.3%	1,039	30.8%	1,648
Walk	16.0%	315	16.0%	480	14.9%	495	15.0%	802
Bus	3.1%	61	3.5%	105	1.9%	63	2.5%	134
Dropped Off	1.9%	37	1.8%	54	1.9%	63	1.8%	96
Bicycle	0.8%	16	1.5%	45	1.5%	50	2.0%	107
Taxi	0.2%	4	0.2%	7	0.5%	17	0.5%	27
Train	0.2%	4	0.2%	6	0.0%	0	0.2%	11
Total		1,968		3,002		3,324		5,350

Table 6.6 indicates that:

- There would be about 40 additional visits per hour by bus on a Thursday and about 70 on a Saturday;
- There would be about 30 additional bicycle visit per hour on a Thursday and about 55 on a Saturday, and
- Other non car mode trip numbers would increase a little.

The bus and train trip increases would be spread over a number of routes and should not present any capacity issues in respect of present bus operations.

As mentioned above, more taxis transport customers from the centre then to it. The above numbers refer only to the arrival trip.

An important transport benefit arising form the proposed expansion would come from containing more of the Marrickville retail expenditure within the Local Government area and consequently containing travel within the area as well.

The Pitney Bowes Business Insight Economic Impact Assessment for the project finds that annual sales at Marrickville Metro would increase by about $101million after expansion compared to forecast sales without expansion. Of this, some $38m would otherwise have been spent outside the Local Government area representing around 12 percent of sales.

Translating this to contained travel, this means that after expansion around 190 vehicle trips per hour on a Thursday evening and some 300 per hour during a Saturday peak would have their trip lengths reduced. This represents a significant saving in total vehicle kilometres travelled (VKT).

Thus the effects of the expansion are expected to be a significant increase in non car visits plus a reduction in the length of car trips that would otherwise have been made out of the area.

6.11 Local Development

From pre-application discussion with Council, two local developments, that were recently granted planning permission, have been accounted for within this TMAP report. These developments are:

- The redevelopment of the Annette Kellerman Aquatic Centre in Enmore Park, and
- An industrial subdivision of part of the Old Unilever site on the corner of Edinburgh Road and Fitzroy Street.

Traffic and Parking reports that supported the DAs for these developments have been obtained from Marrickville Council; in particular, the Addendum Traffic and Parking Report (GTA Consultants, Feb. 2009) for the aquatic centre and the Traffic Impact Assessment (TTPA Consultants, Nov. 2009) for the industrial subdivision.

Data from these reports has been included in the forecast future traffic flows set out in the following Section 8.3.

As part of the aquatic centre development, GTA Consultants undertook a comprehensive assessment of on-street parking. The assessment concluded that the peak periods for the aquatic centre would be Thursdays and Saturdays in February. To mitigate against potential inconvenience to local residents during these times, the following parking management options were recommended:

- Provision of an additional 40 on-street right angled parking spaces in Victoria, Leicester and Bourne Streets;
- Introduction of time restricted parking immediately adjacent to Enmore Park (2P) and (4P) areas;
- Introduction of a Residents Parking Scheme (2P) in Victoria, Black, Leicester and Bourne Streets; and
- Provision of a dedicated bus drop off area in Victoria Street.

According to the reports prepared for the developments, they are expected to generate the following additional traffic:

Aquatic Centre:

190 veh/hr on a Thursday evening

190 veh/hr on a Saturday

Unilever Site:

170 veh/hr on a Thursday evening

0 veh/hr on a Saturday

7 Proposed Transport Improvements

7.1 Bus

7.1.1 New Bus Stops on Edinburgh Road

Three new bus stops are proposed to be provided on Edinburgh Road on the frontage of the new section of the centre. These will provide:

- Direct Access from the internal Mall.
- Information on bus services at the bus stops as well as a general Transport Access Guide.
- Improved street presence and lighting to assist with any perceived security issues by people waiting for buses.
- Increased seating with shelter for waiting passengers.
- New footpath surfacing.
- Accessible bus stops with low height kerb and accessible paths direct from the shopping centre entry and exit.

This facility would be a major step up from the existing bus stop in Smidmore Street.

7.1.2 Bus stops on Enmore Road and King Street

There are opportunities to improve bus facilities through the following.

- An information board with directions to local facilities including to Marrickville Metro.
- Improved pedestrian access to/from these as described below.

7.1.3 Bus servicing

The public transport environmental target for the centre is to increase public transport trips for additional customers and staff. The bus stop improvements at the shopping centre and bus transport information are anticipated to attract new trips by bus and give customers and staff information on the public transport options.

As is the current practice the bus servicing and capacity in the area will be monitored by bus operators. Additional buses or servicing would match demands as they are revealed.

Figure 8 shows the principal pedestrian routes to and from the bus stops and **Figure 9** the proposed bus routes in the immediate vicinity of the centre.

7.2 Rail

There is potential for employees or customers to travel by train to / from the Centre. At present it is not obvious how close these two railway stations actually are to the centre.

To address this two significant improvements area proposed:

- Improve the quality and legibility of pedestrians routes between each station and the centre, and
- Provide information about routes to and from each station at the entre. With the agreement of Railcorp directions to the centre could also be displayed at each station.

The following improvements to the existing pedestrian routes between the site and Sydenham and St Peters train stations have been identified; these are also discussed further below in Section 7.3:

- Incorporate a new pedestrian crossing in Edinburgh Road east of Sydney Steel Road;
- A new pedestrian refuge across Edgeware Road south east of Smidmore Road; and
- Improve the intensity of lighting along Sydney Steel Road continuation footpath.

Improvements described above are shown on **Figure 10** and travel information display proposals, which will show pedestrian routes to the stations, are discussed in the following Section 10.

7.3 Pedestrians

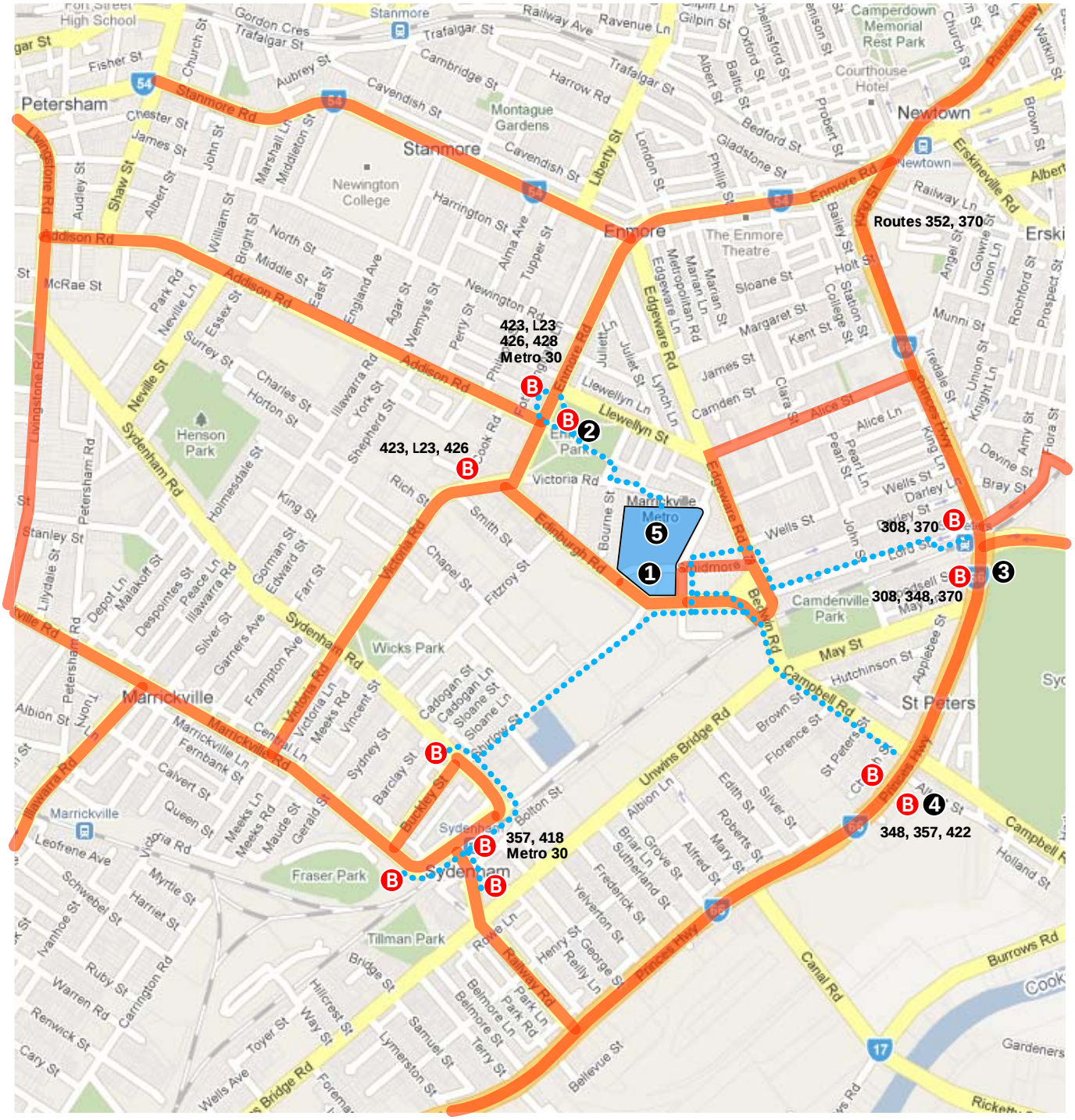
The proposed development incorporates a number of improvements for pedestrians including the following.

- A major/attractive pedestrian entry and space in the mall proposed for the closed section of Smidmore Street;
- New footpaths along some of the site's street frontages;

IMPROVEMENTS BUS ROUTES AND BUS STOPS

MARRICKVILLE METRO TMAP

North



List of Improvements

1. Lighting, shelter, footpath access for disabled and imfromation
2. 3. 4. Directional information to local facitities including Marrickville Metro
5. Travel information board with bus service timetables and nearest bus stop locations

Key

- Bus Routes
- B Bus Stop
- Walking Routes to Bus Stops

Halcrow

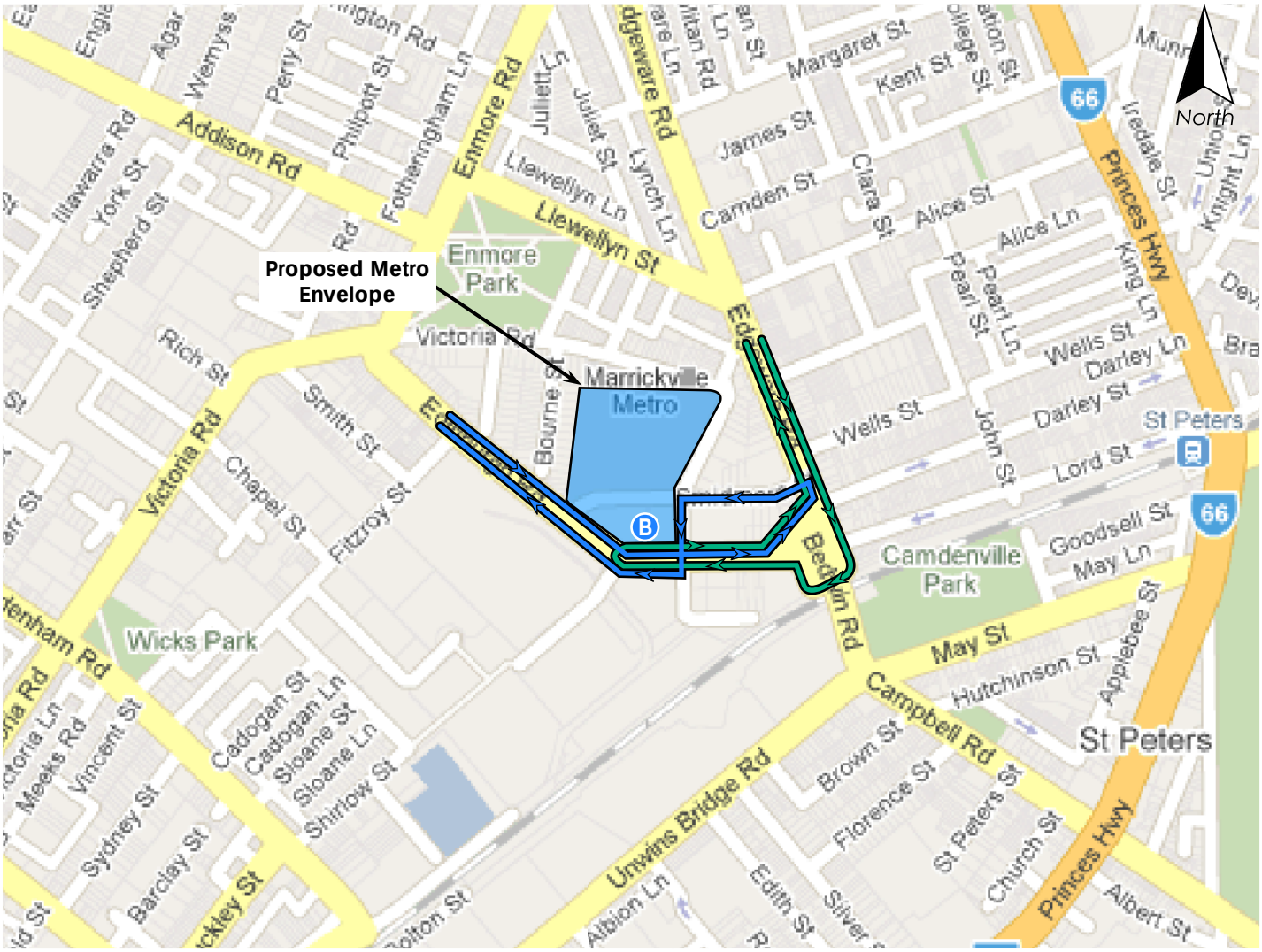
Figure 8

Filename: CTLRGWdi06.ai

Date: 11 May 2010

PROPOSED BUS MOVEMENTS

MARRICKVILLE METRO TMAP



Key

- Routes 308, 352
- Route 355
- Bus Stop

Halcrow

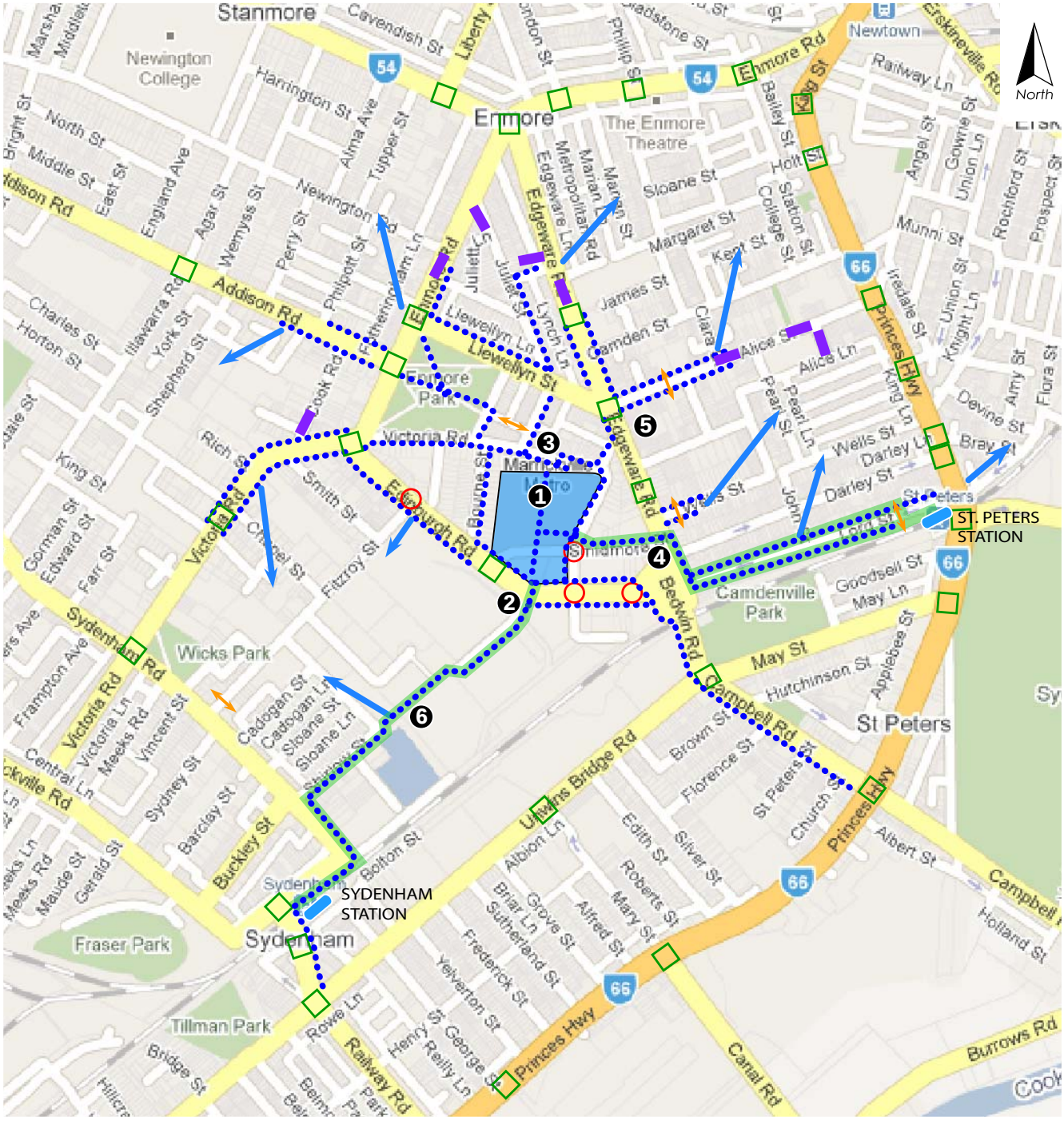
Figure 9

Filename: CTLRGWdi12.ai

Date: 11 May 2010

PROPOSED PEDESTRIAN ROUTE IMPROVEMENTS

MARRICKVILLE METRO TMAP



List of Improvements

1. New footpaths on site frontage, accessible entries/exits, new kerb ramps at immediate crossings.
2. New pedestrian crossing
3. Investigate improvements to remedy 'squeeze' point
4. Proposed pedestrian refuge in Edgeware Road at Smidmore Street
5. New traffic signals at the intersection of Edgeware Road and Victoria Road
6. Improve intensity of lighting and security on pedestrian path

Key

- Walking Route
- Connection to local area and street network
- Signals
- Roundabout
- Traffic Island/refuge
- Pedestrian Crossing
- Improved Pedestrian Routes to Stations
- Train Station

Halcrow

Figure 10

Filename: CTLRGWdi10.ai

Date: 7 July 2010

- Accessible entrances to the centre including a major new one on Edinburgh Road adjacent to the new bus terminal;
- New kerb ramps at proposed pedestrian crossings and crossing points;
- Reduction of street clutter which may impede pedestrian movement along the footpath; and
- An improved entrance in Victoria Road.

Opportunities to improve existing pedestrian facilities are suggested below (see **Figure 10**):

- Incorporate a new pedestrian crossing in Edinburgh Road east of Sydney Steel Road.
- Investigate with Council the potential to improve lighting and widen the path (to relieve the squeeze point between pedestrians and cyclists) at Juliet Street and Victoria Road.
- A new pedestrian refuge across Edgeware Road south east of Smidmore Road.
- Improve the intensity of lighting along Sydney Steel Road continuation footpath.

As indicated on **Figure 10**, several of these measures will improve pedestrian access to and from St Peters and Sydenham train stations.

7.4 Cycle Facilities

The existing cycle network in Marrickville provides good connectivity to the local area. Links to this network from the shopping centre occur along Victoria Street to the L7 and L10 major cycle routes.

The proposed development incorporates improvements to cycle routes and facilities as described below.

7.4.1 Bicycle Facilities

Marrickville's Development Control Plan No. 19 requires that for shops bicycle parking be provided as follows:

- For customers – 1 customer class 3 bicycle space per 500m^2 of floor area.
- For employees – 1 customer class 2 bicycle space per 300m^2 of floor area.

RTA research indicates that as the size of a centre becomes larger, the car parking provision per square metre decreases. Thus a centre over 40,000m^2 in floor space requires parking at only two thirds of the per square metre rate of a centre under 10,000m^2.

This phenomenon would logically also apply to bicycle parking. Applying this adjustment the following bicycle parking would be required for the expanded centre:

Customer – 44,403m^2 @ 1/500m^2 x 0.67 = 60 spaces

Patron – 44,403m^2 @ 1/300m^2 x 0.67 = 99 spaces

It is proposed to provide bicycle parking through a combination of external (footpath) bicycle racks and internal bicycle racks and storage areas. Initially it is proposed to provide 80 bicycle spaces. This provision would then be increased by converting car parking spaces to bicycle spaces if/when it became apparent that the initial provision was insufficient.

Showers and lockers for employees are also proposed.

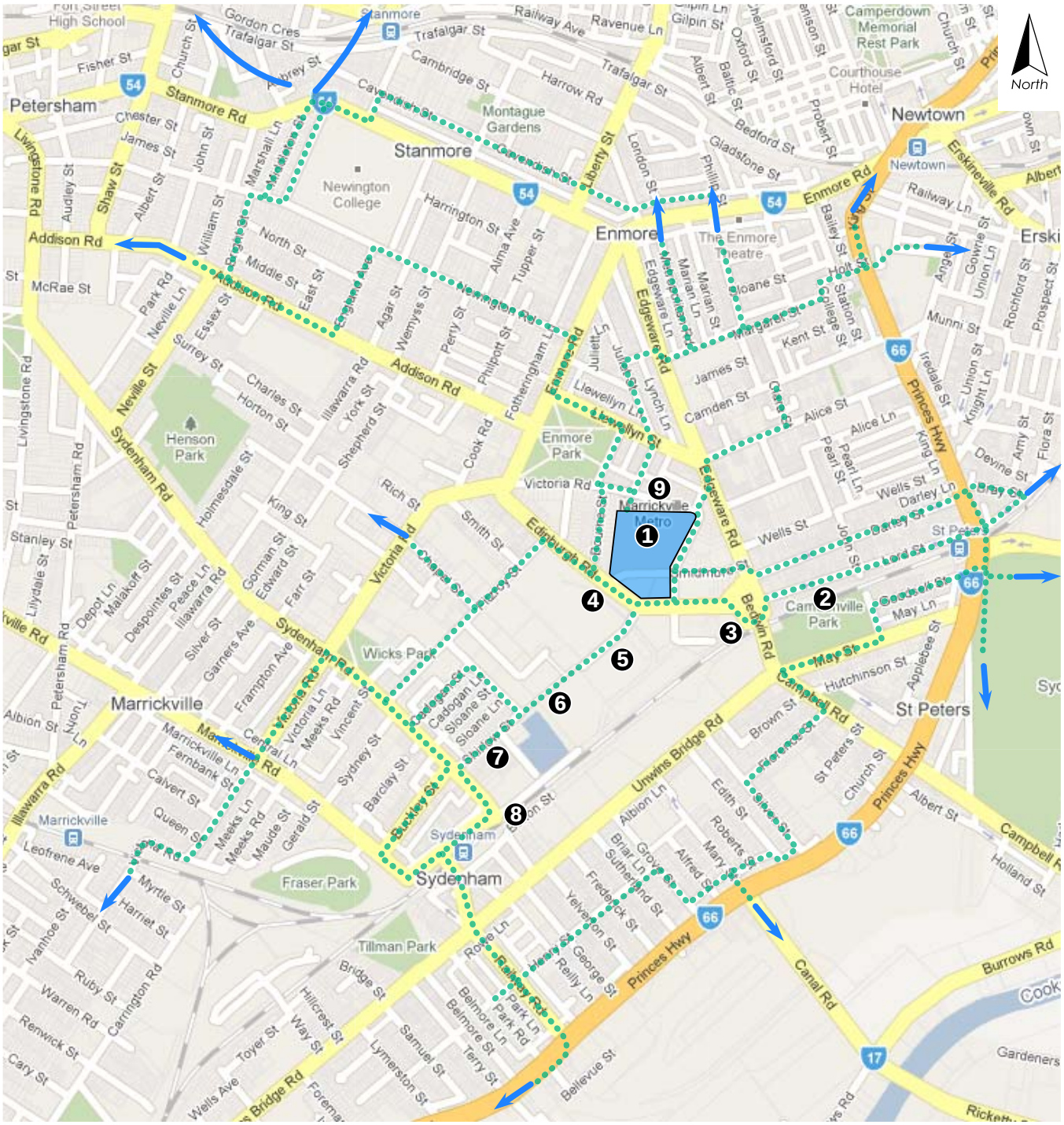
7.4.2 Bicycle Routes

Proposed improvements or connections to bike routes are proposed as follows (subject to agreement with Marrickville Council). These improvements are shown in **Figure 11**.

- Connections to route L10 and St Peters Station and north east
  - mark bicycle symbols on street in Lord Street and Darley Street extending the existing bicycle lanes from John Street to Edgeware Road,
  - mark bicycle symbols on street in Edgeware Road under Bedwin Road connecting the Lord and Darley Street lanes to Edinburgh Road,
  - mark bicycle symbols on street in Edinburgh Road to the shopping centre entrance/exit,
- Connections to Route L8 and Sydenham Station and south - south east
  - mark bicycle symbols on street in Edinburgh Road and Sydney Steel Road,
  - lighting improvement and signage for a shared pedestrian cyclist path off street from Sydney Steel Road to Shirlow Street,
  - mark bicycle symbols on street (both directions) in Shirlow Street south of Garden Street,

PROPOSED BICYCLE IMPROVEMENTS

MARRICKVILLE METRO TMAP



List of Improvements

1. Customer bicycle rails, staff bicycle parking enclosure
2. Marked bicycle symbols on street in Lord and Darley Streets
3. Marked bicycle symbols on street in Edgeware Road under Bedwin Road
4. Marked bicycle symbols on street in Edinburgh Road
5. Marked bicycle symbols on street in Sydney Steel Road
6. Lighting and signs for off street shared bicycle pedestrian path between Steel Road and Shirlow Street
7. Marked bicycle symbols on street (northbound) with contra-flow lane (southbound) south of Garden Street
8. Bicycle marking and signs for a two way shared bicycle-pedestrian footpath in Sydenham Road and Railway Parade
9. Marked bicycle symbols in Victoria Road to L7 and Juliet Street

Key

- Bicycle Routes Metro
- Connections to wider bicycle networks

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Figure 11

- signs and marking for a contra flow bicycle lane (southbound) and marked bicycle symbols on street (northbound) in Shirlow Street south of Garden Street,
- bicycle markings and signs for a two way bicycle and shared bicycle pedestrian footpath along the eastern side of Sydenham Road and northern side of Railway Parade.

- Connections to L7 thence to north and west
  - marked bicycle symbols on street in Victoria Road to connect Metro with L7 and existing facilities in Juliet Street and Black Street.

7.5 Taxis

The proposed development proposes to replace the existing taxi rank in Smidmore Street with a new taxi rank for three spaces and a new shelter and seating in Murray Street.

The rank will contain the following.

- Improved street presence and lighting to assist with any perceived security issues by people waiting for taxis particularly at night.
- The provision of seating with shelter for waiting passengers.
- New footpath surfacing.
- Accessible taxi space in accordance with Australian Standard with low height kerb, wheelchair access and accessible paths direct from the shopping centre entry and exit.

7.6 Car Share Parking

Car share schemes support public transport and use for active travel modes by reducing the need for residents to own cars.

Two car share spaces will be allocated within the centre car park for priority access to the centre's entrance / exit.

7.7 Pick Up / Set Down

As part of the proposal a length of space will be allocated on street for shuttle buses such as the Leichardt Marrickville shuttle and private vehicles to drop off or pick up

passengers in Murray Street. The space would not be dedicated and will allow other passengers to be dropped off / picked up.

Seating for the set down and pick up area would be provided clear of the footpath area with accessible loading areas for the community bus.

7.8 Future Road Works

The road improvement schemes set out in this section were developed on the basis of capacity analysis of the existing traffic flows and of likely traffic increases that would arise from the proposed expansion of the centre.
These potential improvements were taken into account in the operational analysis in the following sections of this report.

7.8.1 Intersection of Edgeware Road, Alice Street & Llewellyn Street

To maintain the existing level of service after the expansion of Marrickville Metro intersection modelling of the intersection of Edgeware Road, Alice Street and Llewellyn Street indicates a need to extend the length of parking restrictions on Edgeware Road, southbound approach and on the Alice Street westbound approach. These should be increased to 50 m during weekday evening and Saturday morning peak periods.

It is noted that the performance of this intersection could be considerably further improved by widening Edgeware Road south of the intersection and Alice Street east of the intersection by about 1.8m (900mm on each side) to develop a third lane on each approach. However this treatment is not proposed as:

- It would impact on trees and on the amenity of pedestrians on the footpath,
- Alice street has reached its natural capacity as an east west thoroughfare and any increase in capacity on it would attract more through traffic to its use, and
- North-south traffic on Edgeware Road is naturally throttled by the intersection of Edgeware Road with Enmore Road. Any traffic relief at the Alice Street/Llewellyn Street intersection would serve to move traffic more quickly up to the Enmore Street/Edgeware road intersection.

In relation to the Enmore Road/Edgeware Road intersection, it is considered that this acts as an important gateway to traffic entering the Marrickville area from King Street.

While delays at this intersection are obviously a concern to local residents, the throttle effect of the operation of this intersection does protect the local government area from excessive through traffic. To the extent that additional through traffic would be drawn through this intersection if it was improved, such improvement would be counter productive.

7.8.2 Intersection of Victoria and Edgeware Roads

At this intersection traffic turning left out of Victoria Road needs to merge into the queue in Edgeware Road northbound that backs up from the Alice Street intersection. Out of courtesy drivers in Edgeware Road do tend to allow left turning vehicles out of Victoria Road. However there are difficulties if the turning driver then wants to turn right into Alice Street.

Another difficulty is that there are long delays for vehicles wishing to turn right out of this intersection.

Consideration was given to signalising this intersection to assist vehicles in turning out of Victoria Road. However this possibility was not supported as:

- It would be preferable for vehicles leaving Marrickville Metro to turn left into Edgeware Road via Smidmore Street as they would then be able to feed into the back of the queue leading up to Alice street, selecting the appropriate lane when they did so, and
- Traffic volumes turning right out of Victoria Road are low (probably because it is difficult to do.) It would be preferable that right turns at this location not be encouraged and that instead, traffic heading to the south use Edinburgh Road instead of Victoria Road.

Thus no change to the control of this intersection is proposed.

7.8.3 Intersection of Unwins Bridge Rd/Bedwin Rd/May & Campbell Streets

This intersection currently operates at a poor level of service. To improve operation, the following upgrades would be desirable:

- Create a dedicated left slip lane of about 60m by implementing parking restrictions (clearway or permanent) on the Unwins Bridge Road approach;

- On May Street convert the existing right and through lane to a dedicated right-turn lane. Add a right-turn phase for vehicles turning from May Street into Bedwin Road;
- Extend the peak period 'No Stopping' restriction on May Street north of the left slip lane to about 80m to allow left and through traffic to pass right-turning traffic queued in the new dedicated right-turn lane.

The proposed improvements above are shown on **Figure 12**.

7.8.4 Intersection of Edinburgh & Sydney Steel Roads

A roundabout is proposed for the intersection of Edinburgh and Sydney Steel Roads. Although this intersection does not currently suffer from capacity issues, the roundabout would facilitate the following:

- Allow vehicles exiting the proposed left-out from the expansion site to u-turn and head northwest-bound on Edinburgh Road;
- Provide the required turning facility for buses arriving from the east on Edinburgh Road to make a U-turn in order to enter the new bus terminus on the northern side of Edinburgh Road.

7.8.5 Intersection of Edinburgh, Edgeware & Bedwin Roads

Analysis indicates that there is potential for considerable delay for vehicles turning right to the south from Edinburgh Road.

As an alternative, this right-turning traffic is able to use the underpass beneath Bedwin Road to instead make a left-turn to the south into Bedwin Road. Therefore, as part of the expansion-related road works, it would be advisable to sign post that the right-turn movement could also be made by using the existing underpass to access Bedwin Road.

A summary list of the Transport Improvements outlined in this Section 7.0 is attached at **Appendix B**.

LANE RELOCATION AND PARKING RESTRICTIONS FOR UNWINS BRIDGE ROAD AND MAY STREET

Marrickville Metro Shopping Centre

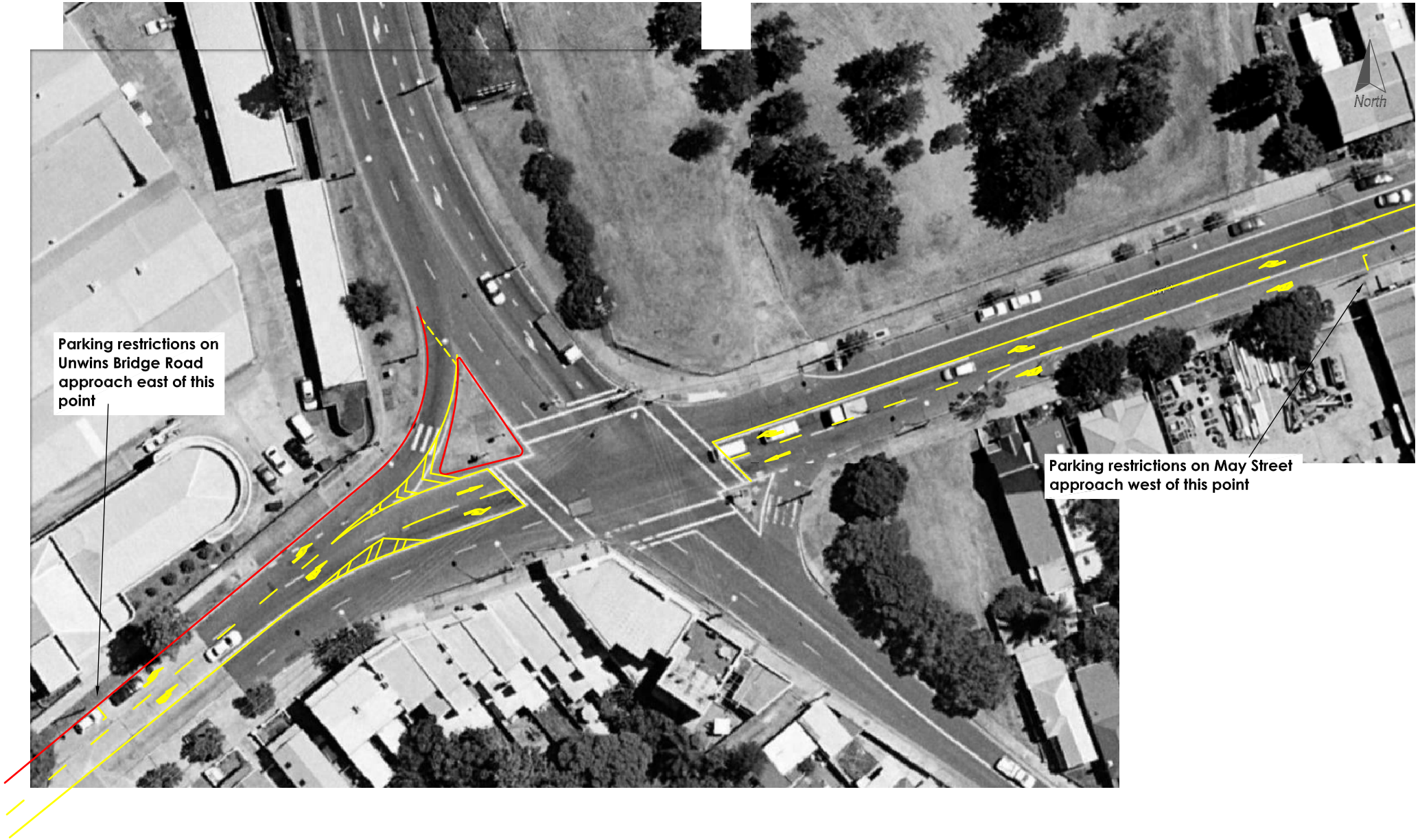

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Figure 12

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Date: May 2010

8 Road Network and Parking Implications

8.1 The Proposal

As indicated above, the proposal involves increasing the retail lettable area of the centre from 22,933m^2 to 44,403m^2. In addition, some 8,500m^2 of warehouse space that is presently used by a party hire business will be displaced.

In terms of traffic access, the existing car park accesses on Smidmore and Murray Streets would be retained in their present locations but realigned within the centre. A new left-in, left-out access would then be added on Edinburgh Road so as to spread access traffic and avoid undue concentrations at any one point. A median island on Edinburgh Road at the new access would be constructed to stop exiting vehicles from right-turning on to Edinburgh Road. Vehicles wanting to undertake this manoeuvre would be able to U-turn at the proposed roundabout at the intersection of Edinburgh Road with Sydney Steel Street.

The analysis below assumes that in addition to the retail expansion, the transport improvement measures identified in this report also be implemented. These are addressed in the Statement of Commitment which accompanies the application.

8.2 Traffic Generation

Section 6.2.1 sets out details of the centre's existing traffic generation. This indicates that the centre presently generates traffic at about 77% of the RTA rate on a Thursday evening and at about 90% of the RTA rate on a Saturday morning.

Based on RTA traffic generation rates for a centre of more then 40,000m^2 and applying the scale factors established above the expected traffic generation of the expanded centre would be as follows:

- Thursday evening 44,403m^2 @ 4.6 veh/hr/100m^2 x 0.77 = 1,573 veh/hr
- Saturday 44,403m^2 @ 6.1 veh/hr/100m^2 x 0.95 = 2,573 veh/hr

Adopting these traffic generation figures the increase in traffic generation would be:

- Thursday evening 50%
- Saturday 57%

In consideration of this level of traffic growth, regard was had to advice from AMP Capital Investors is that the centre is trading at a level well above that of its peers and that part of the motivation for expanding the centre is to spread the trade over a greater floor area to afford less congested conditions at peak times.

Accordingly as a check on traffic growth, a comparison was made of forecast sales growth prepared for the Economic Impact Assessment of the proposed expansion by consultants Pitney Bowes Capital Insight. The forecast total annual sales in the centre in 2012/13 are as follows:

- No expansion $215M
- With expansion $316M

Thus sales are expected to increase by about 47% over the no expansion case. This increase is a little lower than the forecast in traffic generation growth but does give credence to it.

Finally, the net traffic increase can be calculated as follows by deducting the existing traffic generation from the forecast future traffic generation:

- Thursday evening 1,573 – 1,041 = 532 veh/hr
- Saturday 2,573 – 1,635 = 938 veh/hr

8.3 Future Traffic Flows

Future traffic flows were estimated by adding the additional traffic that would be generated by the centre on to the surveyed existing traffic flows. The distribution of the additional traffic was determined on the trade area sales forecasts prepared by Pitney Bowes Capital Insight who prepared an Economic Impact Assessment for the proposed development. Traffic growth in expected to come mainly form the south, south east and west. Little traffic growth is expected from the north and north east because:

- The main competing centres are located to the north, and
- Erskineville provides a barrier to traffic access directly from the east.

In determining future traffic flows two conservative elements were incorporated into the forecasts. Firstly, no deduction was made for the removal of traffic associated with the warehouse site. Secondly, no deduction was made for the interception of traffic that would otherwise have travelled out of Marrickville to shop elsewhere. This benefit would occur mainly on Edgeware and Enmore Roads.

To the extent that these effects were not taken into account the analysis in this report is conservative.

Further in relation to this, in reality it is expected that the interception by the expanded centre of shopper traffic from within Marrickville, which would otherwise have travelled to alternative shopping centres to the north (CBD, Leichhardt, Broadway), would more than offset any additional traffic that might be drawn to the expanded centre from the north. This has importance for the analysis of the operation of intersections on Enmore and Edgeware Roads in the following sections for which this outcome was conservatively (as a very worst case) not allowed for.

Finally, as mentioned earlier in Section 6.11, traffic data for the redevelopment of the Annette Kellerman Aquatic Centre and the industrial subdivision of part of the Old Unilever site, were included in the forecasted traffic flows.

Forecast future traffic flows are presented on **Figures 13** and **14**.

FUTURE WITH EXPANSION TRAFFIC FLOWS, THURSDAY PM

Marrickville Metro Shopping Centre

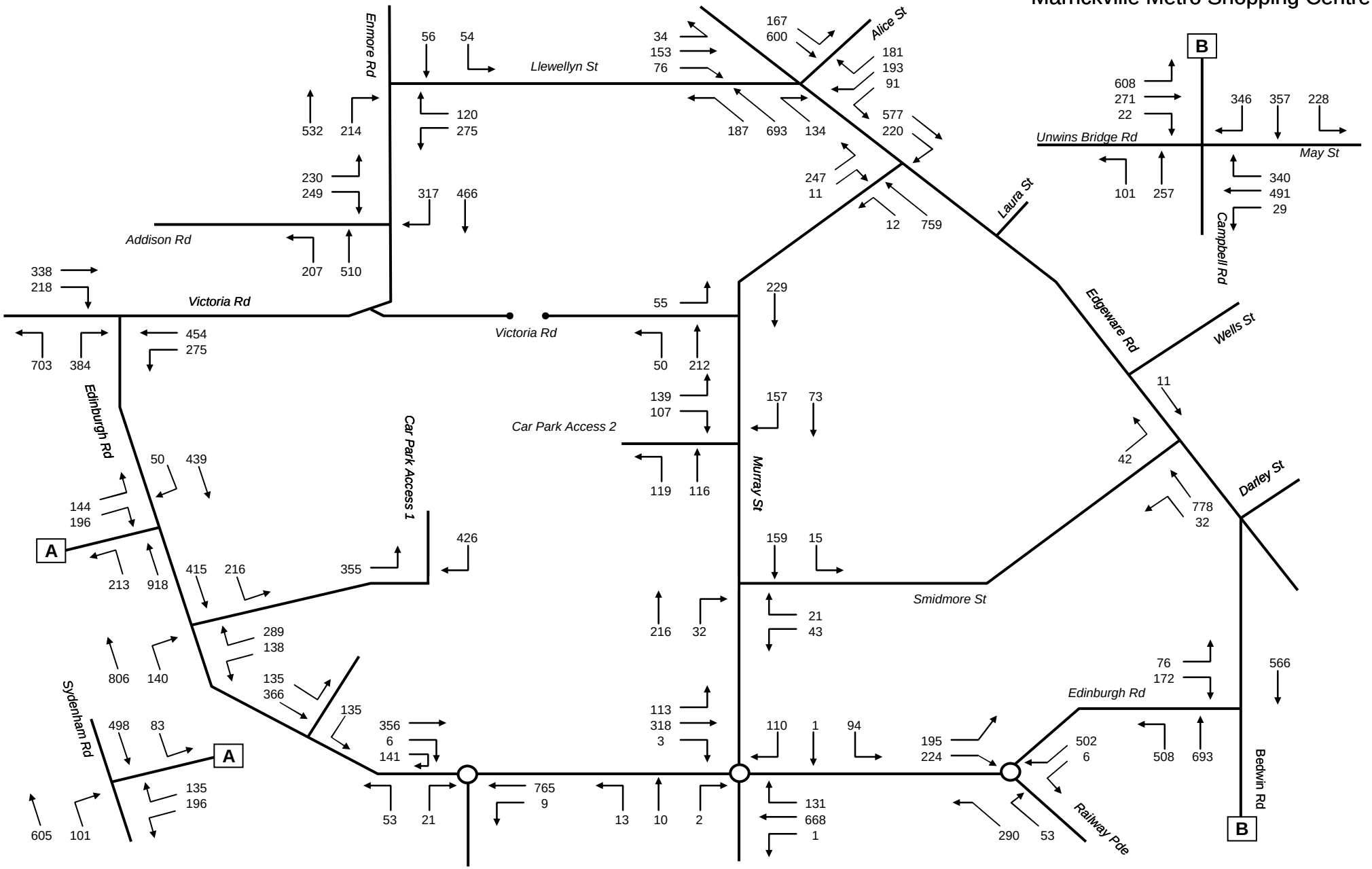

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Figure 13

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FUTURE WITH EXPANSION TRAFFIC FLOWS, SATURDAY

Marrickville Metro Shopping Centre

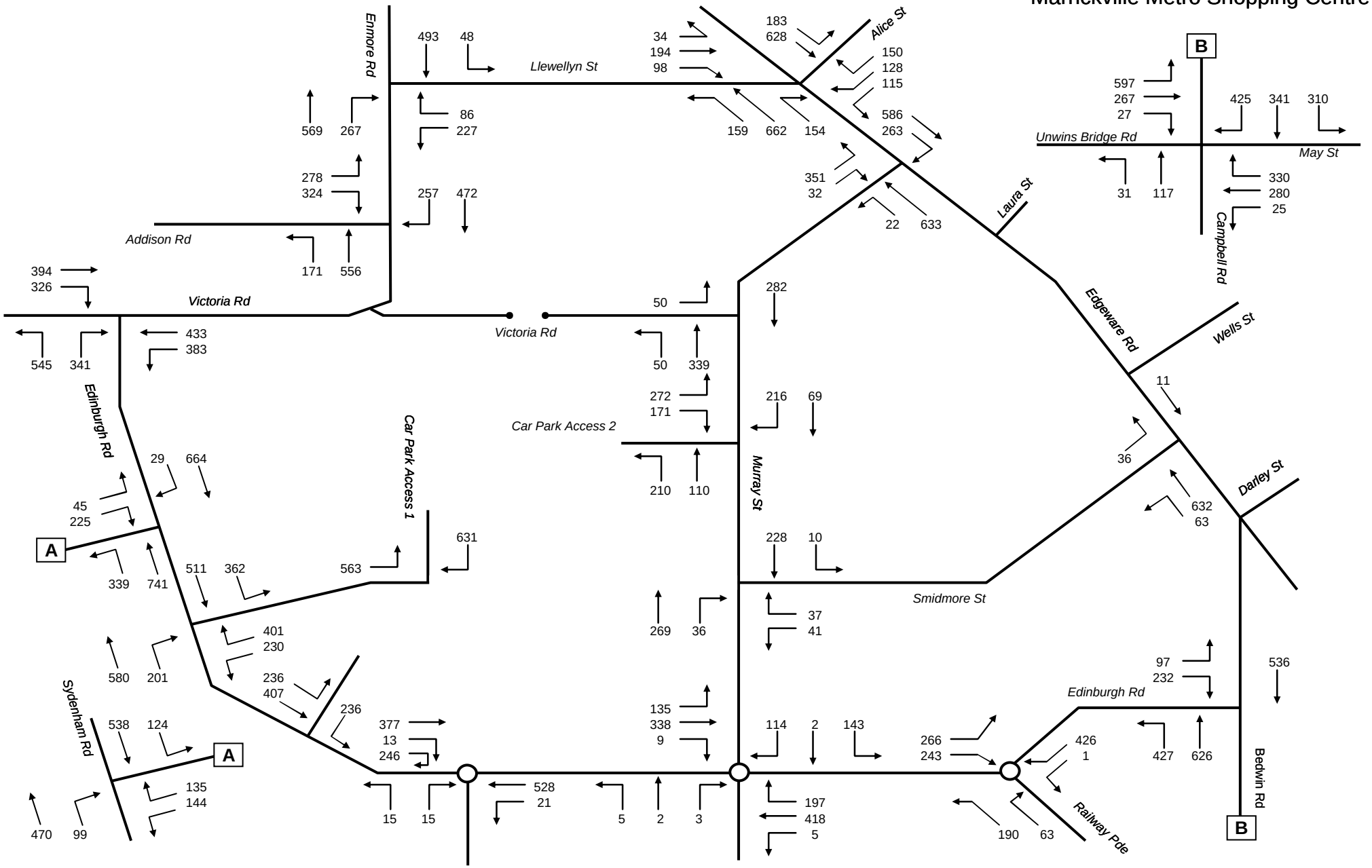

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Figure 14

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8.4 Link Flows Analysis

Table 8.1 compares existing and future traffic flows for links on the local road network.

Table 8.1 – Comparison of Existing and Future Two-Way Peak Hour Traffic Volumes (vph)

Link	Location	Thursday PM		Saturday	
		Existing	Future	Existing	Future
Enmore Rd	Between Addison Rd & Llewellyn St	1009	1212	904	1196
Victoria Rd	West of Edinburgh Rd	1162	1442	1116	1537
Edgeware Rd	North of Llewellyn St & Alice St	1669	1675	1647	1657
Edgeware Rd	Between Victoria Rd & Llewellyn St	1764	1792	1784	1825
Edgeware Rd	Between Darley St & Edinburgh Rd	1311	1335	1234	1259
Alice St	East of Edgeware Rd	855	919	852	924
Victoria Rd	Between Murray St & Edgeware Rd	481	493	646	670
Murray St	Between Murray St Access & Smidmore St	409	413	540	552
Murray St	Between Smidmore St & Edinburgh Rd	452	455	575	584
Smidmore St	Between Murray St & Edgeware Rd	91	93	109	112
Edinburgh Rd	Between Victoria Rd & Fitzroy St	1165	1566	947	1537
Edinburgh Rd	Between Fitzroy St & Smidmore St	1337	1746	1284	1912
Edinburgh Rd	East of Smidmore St	1017	1409	759	1354
Edinburgh Rd	West of Sydney Steel Rd	1019	1455	754	1425
Edinburgh Rd	Between Sydney Steel Rd & Murray St	1001	1188	754	980
Edinburgh Rd	Between Murray St & Railway Pde	996	1213	832	1115
Edinburgh Rd	Between Railway Pde & Bedwin Rd	598	756	550	756
Smidmore St	East of Edinburgh Rd	535	783	764	1194
Fitzroy St	Between Sydenham Rd & Edinburgh Rd	409	515	428	502
Sydenham Rd	North of Fitzroy St	1251	1321	1221	1267
Sydenham Rd	South of Fitzroy St	1340	1400	1223	1251
Bedwin Rd	Between Edinburgh Rd & Unwins Bridge Rd	1896	2136	1812	2120
Unwins Bridge Rd	West of Bedwin Rd	1771	1839	1551	1627
May St	East of Bedwin Rd	1263	1359	1080	1212
Campbell Rd	South of Unwins Bridge Rd	690	766	441	541

Table 8.1 indicates that, as would be expected, traffic increases would be greatest on the main approach routes to the centre: Edinburgh Road, Victoria Road, Enmore Road and Bedwin Road.

Traffic loads on other roads in the vicinity of the centre would be relatively minor.

8.5 Future Intersection Performance

The intersections surrounding the Marrickville Metro Shopping Centre were re-analysed using SIDRA 4.0. **Table 8.2** compares the existing and future operation of these.

Table 8.2 – Comparison of Existing and Future Peak Hour Intersection Operation

Intersection		Control	Thursday PM		Saturday	
			LoS	Av. Delay	LoS	Av. Delay
Enmore Rd / Llewellyn St	Existing	Signals	B	22.0	B	20.3
	Future	Signals	C	29.2	C	34.0
Addison Rd / Enmore Rd	Existing	Signals	B	25.1	B	22.6
	Future	Signals	C	35.4	C	35.7
Victoria Rd / Edinburgh Rd	Existing	Signals	B	28.1	B	27.2
	Future	Signals	C	31.4	C	33.9
Edgeware Rd / Alice St / Llewellyn St (1)	Existing	Signals	D	51.2	D	50.5
	Future (2)	Signals	E	61.4	E	58.5
Edgeware Rd / Victoria Rd	Existing	Signs	C	41.3	C	41.8
	Future	Signs	D	43.3	D	44.9
Edinburgh Rd / Fitzroy St	Existing	Roundabout	B	15.5	A	11.9
	Future	Roundabout	C	41.0	B	17.1
Fitzroy St / Sydenham Rd	Existing	Signs	A	11.5	A	12.0
	Future	Signs	A	12.1	A	12.4
Edinburgh Rd / Smidmore St	Existing	Signals	B	26.7	C	29.6
	Future	Signals	B	21.6	D	46.9
Smidmore St/ Murray St	Existing	Roundabout	A	8.0	A	8.2
	Future	Signs	A	11.6	A	14.3
Edinburgh Rd / Sydney Steel Rd (1)	Existing	Signs	A	11.6	A	9.4
	Future	Roundabout	A	13.8	A	12.3
Edinburgh Rd / Murray St	Existing	Roundabout	A	11.2	A	10.7
	Future	Roundabout	A	8.0	A	12.4
Edinburgh Rd / Railway Pde	Existing	Roundabout	A	9.8	A	9.6
	Future	Roundabout	A	12.0	A	10.2
Edinburgh Rd / Bedwin Rd (3)	Existing	Signs	B	24.8	B	24.2
	Future	Signs	C	35.4	C	36.7
Bedwin Rd / Unwins Bridge Rd / Campbell Rd / May St (1)	Existing	Signals	F	74.5	C	28.8
	Future	Signals	C	32.2	C	29.1

(1) Future with modified layout

(2) Relative additional traffic contributions are: Thursday PM 15% Marrickville Metro Expansion; 85% Aquatic Centre + Subdivision; Saturday 24% Marrickville Metro Expansion; 76% Aquatic Centre + Subdivision

(3) Assumes any growth in right turns into Bedwin Road uses underpass to turn left to south to avoid delays.

Table 8.2 confirms that almost all intersections would operate satisfactorily (Level of Service D or better in peak periods) provided the improvements outlined in Section 7.8 above were implemented.

The one exception is the intersection of Edgeware Road with Alice and Llewellyn Streets, which goes from a Level of Service D to E during a Thursday evening peak.

About 15-25% of the increased traffic using this intersection would be attributed to Marrickville Metro. In relation to the analysis of this intersection, it is noted that as outlined in Section 8.3 above, that it represents a worst case situation as in reality the assessed traffic increase through the intersection would be offset by reduced traffic travelling to the north to shop. In view of this, a possible slight worsening of performance on a Thursday evening is considered acceptable.

8.6 Conclusions on Traffic Implications

The additional traffic generated by the proposed expansion would necessitate improvements at several locations external to the site. Subject to these, traffic impacts would be satisfactory.

8.7 Internal Traffic Arrangements

8.7.1 Car Parking Design

All parking spaces have been designed to meet the geometric requirements of Australian Standards AS 2890.1-2004. A proposed guidance system will indicate the number of space available on each floor.

The existing car park ramps on Smidmore Street and Murray Street will have a modified alignment to improve their geometry, provide easier access to the roof parking and make a better use of space on the site. The new ramp on Edinburgh Road will be a double-helix to provide express up and down movements. Internal ramps will provide access between the two floors of car parking above each building.

8.7.2 Loading Dock Design

Improved loading areas on Murray Street replacing the 'reverse in' loading bays with an enlarged internal loading area. An improved and enlarged loading area for the

Smidmore Street loading dock and a new internal loading dock on the expansion site also accessed from Murray Street.

A schedule of the existing and proposed loading dock spaces is included in **Table 8.3** in Section 8.8 below.

8.8 Parking Provision

8.8.1 Parking Provision

RTA research has found that the car parking demand rate for shopping centres decreases as the size of the centre expands. Thus the recommended rate for centres with more than 30,000m^2 of GLA is 4.1 spaces per 100m^2. It is proposed to supply parking at this rate.

A total of 1,815 parking spaces are proposed for the future retail area. It is noted that the Marrickville DCP suggests a parking rate for "shops" of 30 spaces plus one space per 20m^2 over 1,000m^2. For the subject proposal this would require 2,242 spaces. This provision is not considered appropriate as:

- Existing demand at the centre is consistent with RTA rates,
- The Marrickville DCP does not take into account the aggregation effect of large shopping centres on parking demand, and
- It is State Government policy that parking in new developments not be over supplied. Such was the specific advice of the Department of Transport for this particular application.

8.8.2 Comparison of Existing and Proposed Parking and Loading Provisions

Table 8.3 provides a comparison of existing loading bays and parking numbers (including disabled parking, bicycle and motorcycle) with those proposed by the expansion development.

Table 8.3 – Existing and Proposed Parking and Loading spaces

Type	Existing Marrickville Metro Centre	Proposed Marrickville Metro Centre
Total Car parking	1,080	1,815
Disabled parking	12	36
Motorcycle parking	0	36
Bicycle parking	4	80
Loading bays	14	28

8.8.3 On-street Parking Demand

In discussions with Council Officers a request was made that consideration be given to the availability/use of on-street parking in the vicinity of the centre, particularly in proximity to the Annette Kellerman Aquatic Centre. On-street car parking at this location is sensitive because it is proposed to accommodate additional parking needs of the aquatic centre through the arrangement of on-street parking.

As it turned out at the time of writing this report, much of the on-street parking, in the residential areas to the north and west of the Marrickville Metro shopping centre, was being occupied by tradespeople currently working on the redevelopment of the aquatic centre. Accordingly, fresh parking surveys would not have given a true indication of existing usage patterns.

In relation to on-street parking associated with Marrickville Metro, it is acknowledged that some customers prefer to park on streets such as Victoria Street. This reflects a personal preference for such parking rather than an absence of parking on the site. In part, this preference is attributable to difficulties customers sometimes have in finding parking within the centre although there is usually available parking in some of the remote parts of the shopping centre. To address this it is proposed to provide a guidance system in the car park that will advise shoppers of the availability of parking on each floor.

Because of this and because of the convenience factor at parking on-street quickly runs out with distance from the shopping centre, it is not expected that the expanded centre would lead to any increased parking on nearby streets.

In fact the centre is likely to provide an overflow opportunity for aquatic centre parking on peak days at the facility. This could be beneficial to both developments as visitors to the aquatic centre could combine a visit to that with a shopping visit to Marrickville Metro.

9 Construction Traffic Management

Owing to the scale of the project and the need to undertake the development whilst maintaining a safe and functional retail centre, it is proposed that construction would occur over at least two discrete stages.

Stage 1 would involve the redevelopment of the warehouse site at 13-55 Edinburgh Road to accommodate the new two level retail centre including car parking above. This work would also involve the creation of the pedestrian plaza and retail extension across Smidmore Street linking the two retail buildings and the refurbishment of the existing shopping centre building fronting the northern side of Smidmore Street.

Stage 2 would involve the first floor level retail extension over the existing shopping centre building with the proposed additional car parking at roof top level.

Separate formal Construction Traffic Management Plan will be submitted for each development stage. Whilst at this stage of planning the formal construction methodologies have not been determined, the following principles would be incorporated given that the site is located close to transit corridors and that there are a high number of pedestrian movements in and around the site.

- The Construction Traffic Management Plan will include proposed truck parking areas, construction zones, crane usage, truck routes etc.
- Pedestrian movements along footpaths will be maintained as much as possible on roads surrounding the site.
- Trucks must enter and leave the site in a forward direction unless accredited flag persons are in place to control traffic and pedestrians.
- The Building Contractor will maintain strict traffic management procedures to ensure the safety of the public road users and pedestrians utilising traffic wardens.
- All vehicles carrying materials to, or from the site must have their loads covered with tarpaulins or similar covers.
- Openings in the construction fencing at the construction access driveways will be managed and controlled by qualified site personnel.

- Temporary pedestrian warning signs and flashing lights will be erected adjacent to construction access driveways where appropriate.

It is anticipated that a condition would be imposed on any consent requiring that a construction traffic management plan be approved by the Marrickville traffic Committee prior to the use for a construction certificate for the main building works.

10 Green Travel Plan

From the above, it will be seen that the Centre already enjoys excellent external transport infrastructure that both encourages and facilitate access to the Centre by non-car modes.

In order to build on this strong foundation, a number of measures or initiatives have either been incorporated in the design of the Centre or are proposed to be implemented by centre management. These are outlined below.

10.1 Travel Access Guide

The centre would be proactive in providing up to date public transport information to customers and staff as well as new tenant owners. A TAG will be prepared in accordance with RTA Guidelines for employees and customers. In particular:

- Marrickville Metro will include public transport access information and encouragement for staff to travel by public transport in its tenant information kits.
- Tenants will be encouraged to display travel information in staff amenity rooms where appropriate.
- Centre management will continue to provide transport information on its website.
- Directions to bus stops and the railway station would be available at the information desk.
- Boards will be erected within the centre to provide information on public transport options at each of the street entrances.

10.2 Home Delivery

The major supermarkets in the centre will be encouraged to provide a home delivery service.

10.3 Parking Limitation

The amount of parking added to the Centre will result in an adequate supply of parking but the supply rate will be below the nominated DCP rate of 5 car spaces per 100m^2.

The RTA Traffic Generating Guidelines' car parking rate of 4.1 car spaces per 100m^2 has been adopted for the expanded centre.

The car parking provision is intended to assist in avoiding the overflow of parking into the neighbouring local streets whilst encouraging the use of public transport through the restriction of car parking.

10.4 Encouragement

Marrickville Metro will liaise with tenants in tenant meetings and encourage them to raise any transport improvement suggestions that might be made in representations to Marrickville Council, City Rail, bus operators or the taxis council.

Marrickville Metro will actively encourage tenants to promote car pooling by their staff.

10.5 Pedestrian Way Finding Signage

In conjunction with Marrickville Council, Marrickville Metro will review way finding signage on streets with Council and it will install new signs showing the way to the Centre and other local facilities as agreed with Council.

Maps and information on walking routes will be available at the centre entrance points and at bus stops in the area.

10.6 Car Park Priority Parking

Priority parking for mobility impaired, seniors, and parents with prams will be marked within the centre car park near accessible entrances to the centre.

10.7 Fuel Efficient Travel

Use of motorcycles and motor scooters has increased in recent years. Travel by these is much more sustainable than by car for one person trips.

36 motorcycle parking spaces will be provided initially to encourage the motorcycle use. Marrickville Metro will monitor the need for parking by these and gradually convert car parking spaces to motorcycle spaces as the demand for such parking increases. In this way travel by fuel efficient vehicles will be encouraged.