



TaylorThomsonWhitting

TRANSPORT ASSESSMENT REPORT

Hornsby Ku-ring-gai Hospital Redevelopment – Stage 1

State Significant Development

Development Application

for Health Infrastructure

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EXECUTIVE SUMMARY

Taylor Thomson Whitting (NSW) Pty Ltd has been engaged by Health Infrastructure to carry out traffic engineering services for the Stage 1 Redevelopment of the Hornsby Ku-Ring-Gai Hospital.

Currently the proposed area for Stage 1 is located between the existing theatre block, HOPE building and Derby Road.

The key items identified are:

- Currently, all intersections along the road network in vicinity of the site operate at a good level of service with ample capacity. All these intersections will continue to operate at a good level of service once the Stage 1 redevelopment has been completed and operational.
- Endeavours are made to promote sustainable transport by encouraging more use of public and active transport to reduce car parking/use demand (Health Promotion 2011 by Northern Sydney and Central Coast Health Services).
- Appropriate access for pedestrians and people with disability will also be provided as part of the development proposal.
- An additional parking demand of 100 spaces for the site has been assessed.
- Future parking areas (such as a multi-deck carpark) need to be identified within the site for future development
- The future parking demand for the campus (including Stage 1 Redevelopment and Mental Health) is 770 spaces. The proposed redevelopment plan for the site provides this level of car parking as part of its on and off street parking strategy. This includes a provision of 495 parking spaces within the campus and use of 300 on street parking immediately adjacent to the perimeter of the Hospital campus (i.e. a total of 795 spaces).
- The car parking provision for already approved Mental Health Facility with capacity of 25 spaces will be relocated from south-east corner of Hospital Campus to the parking area near Building 5. These 25 spaces will be dedicated for mental health use where will be in much closer proximity to the new Mental Health Facility.
- The proposed development provides a major improvement on health services for Hornsby and northern region community.

RESPONSE TO DIRECTOR'S GENERAL REQUIREMENTS

No	DGR Key Issues - Transport	Comments
1	<i>General</i>	The study has been carried out with consideration to relevant guidelines and planning documents including: RMS's Guide to Traffic Generating Developments, AUSTROADS and state, regional and Hornsby Council's planning documents including State Plan 2021, Metropolitan Plan for Sydney 2036 (Transport), <i>North Subregion Draft Subregional Strategy</i> , <i>State Environmental Planning Policy (Infrastructure)</i> and <i>Hornsby Council Development Control Plan</i> and Council's relevant documents.
2	<i>Construction:</i> - <i>Detail access arrangements at all stages of construction and measures to mitigate any associated traffic, pedestrian or cycleway impacts.</i> - <i>Provide details regarding car parking arrangements during construction, including the displacement of visitor and patient car parking. Alternative off-site arrangements should be made for staff and construction workers.</i>	A comprehensive Construction Management Plan will be prepared prior to the commencement of works. Construction access routes will be in line with Council and RMS's requirements. All vehicular movements to and from the site will be in forward direction. Parking arrangements have also been outlined in Section 4.7.2 under Construction Access.
3	Operation: 3.1 Identify any impacts of the proposal on the 25 car parking spaces provided in the south-east corner of the hospital campus to service the approved Mental Health Facility (MP08_0227) and measures to address any parking shortfalls as a consequence of the proposed development. 3.2 Detail how the development has taken into consideration travel choices, and how the development contributes to the achievement of transport objectives contained in NSW 2021, Metropolitan Plan for Sydney 2036 and the North Subregion Draft Subregional Strategy.	Section 3.3 of the report provides a detailed discussion on parking requirements and its relevant measures. As detailed in the report, the 25 parking spaces for Mental Health will be designated and relocated to a closer area to Mental Health Facility to improve its functionality and operation of the Hospital as whole. A total of some additional 105 parking spaces will be provided at the end of Stage1 construction in addition to designated parking for Mental Health Facility. The proposed parking provisions and strategy are aimed to meet the Stage 1 and future parking demand of the Hospital. Section 4.9 demonstrates the 'Accessibility' to the site (Figures 4.2, 4.3 & 4.4 show the accessibility to Bus Routes and Train Station) while Appendix P4, includes cycleways and examples of <i>Transport Access Guide</i> and <i>Go2Work Travel Plan</i> for the site. Section 5 sets out a Transport Management Strategy for the Hospital to promote a sustainable transport in support of State Plan initiatives as well as recommending travel plans for the site.
3.3	<i>Assess the implications of the proposed development for non-car travel modes (including public transport use, walking and cycling), including the potential for implementing a location-specific sustainable travel plan (eg 'Travelsmart' or other travel behavioural change initiatives), and the</i>	Please see comments above (No 3.2). Sections 4.8, 4.9 and 5.0 provide a detailed accessibility assessment and put forward measures and strategies to achieve such objectives. . Bicycle parking spaces will also be provided throughout the campus in addition to the above measures.

	<i>Provision of facilities to increase non-car mode share for travel to and from the site. This will entail an assessment of the accessibility of the site by public transport.</i>	
3.4	<i>Provide details of the proposed daily and peak vehicle movements likely to be generated by the proposed development, including the impact on nearby intersections and the need/associated funding for upgrading or road improvement works (if required).</i>	Sections 4.1 to 4.6 of report provide detailed assessment of traffic generation and impact analysis.
3.5	<i>Detail the proposed access and parking provisions associated with the proposed development, including compliance with any parking codes and compliance with the relevant Australian Standards (i.e.: turn paths, sight distance requirements, aisle widths, etc).</i>	Chapter 3.0 of the report provides full assessment of parking requirements. Associated and relevant turning paths are shown in Appendix P3
3.6	<i>Detail the proposed service vehicle movements (including vehicle types and the likely arrival and departure times).</i>	Section 4.7.1 under Access Requirements discusses the movements associated with service vehicles. Appendix P3 demonstrates vehicular movements for loading areas.
3.7	<i>Relevant Policies and Guidelines: Guide to Traffic Generating Development</i>	Please note response to item 1 that all relevant Guides have been considered as part of the report.

1.0 INTRODUCTION

1.1 Development Proposal

In 2010 the NSW Health Department gave approval to undertake planning for the first stage of a campus redevelopment. Consultation with clinicians and managers between April and July 2010 identified preferred options for service models as the basis for campus redesign. These service models have also been informed by the Northern Sydney Central Coast Area Clinical Services Strategic Plan and clinical networking recommendations.

The NSW Health projection tool, AIM2010, was used to determine estimates of future demand based on assumptions reviewed by the Hornsby Ku-ring-gai Health Service.

Key findings included:

- The proportion of public planned surgical admissions at Hornsby Ku-ring-gai Hospital (**HKH**) that are privately insured has halved over the past decade.
- Two thirds of overnight medical beds, and nearly 60% of overnight surgical beds, are occupied by patients aged 70 and over.
- By 2021/22 adult medical and surgical separations are projected to increase by 24%, and bed days by 44% without a change in model of care.
- One quarter of medical admissions, and half of surgical admissions, is for less than 24 hours. It is estimated that 30% of medical overnight admissions and 40% of overnight surgical admissions could potentially be managed and discharged within 48 hrs.

This Development Application seeks approval for a new 4 level clinical building plus roof plant level accommodating surgical services (including sterilising services department); Inpatient accommodation and support services. The works are proposed by NSW Health Infrastructure.

1.2 Study Approach

The purpose of this report is to provide information in terms of access, traffic and parking for HKH Stage 1 Redevelopment proposal. An overall plan for the proposal is shown as part of the architectural drawings.

The study has been carried out on the basis of relevant guidelines and standards such as the RMS's Guide to Traffic Generating Developments, AUSTRROADS and state, regional and Hornsby Council's planning documents including State Plan 2021, Metropolitan Plan for Sydney 2036 (Transport), *North Subregion Draft Subregional Strategy*, *State Environmental Planning Policy (Infrastructure)* and *Hornsby Council Development Control Plan* and Council's relevant documents.

Further, documents from reports related to the study area and similar studies (based on our previous assessment of some 20 Hospitals in NSW and ACT) have also been utilised.

The following traffic and parking related surveys have been carried out as part of the study process:

- Parking Surveys of on street car parking occupancies
- Car parking occupancy survey of the Hospital car parks
- Intersection traffic counts
- Traffic volume and seed data along streets near the Hospital
- Interview surveys of staff, outpatients and visitors on travel mode and car parking.



Figure 1.1 Low Road 90° Parking

2.0 SITE CHARACTERISTICS

2.1 Development Site

The development site is within the existing grounds of the Hornsby Ku-Ring-Gai Hospital Campus. The Hornsby Ku-ring-gai Hospital (HKH) is bound by Lowe Road to the north, Burdett Street to the south, Derby Road to the east and Palmerston Road to the West (Refer to Site Plan below).



Figure 2.1 Site Plan

The **Stage 1** development program will provide clinical services with estimated some 70 additional outpatients per day and some 171 staff. **Table 2.1** provides a summary of the Hospital characteristics.

Objectives for the redevelopment include:

- Provide for the future health service needs of the community
- Address agreed clinical priorities
- Enable new Models of Care and clinical innovation
- Provide safe, effective, patient focussed care
- Improve overall operational efficiency of the service
- Maximise site utilisation and provide for future developments
- Optimise the investment in new infrastructure

Table 2.1 Summary of Hospital Population – Stage 1

Category	Year 2010	Year 2015	Increase
Total No of Staff	777*	948^	171
Outpatients annually	168,408*	185,408*	17,000
Per day	680	750	70
No of Beds	254	338^	84

*source: HKH Clinical Services Plan (2011/2021); ^source: HI

2.2 Travel Mode

The Stage 1 Hornsby Ku-Ring-Gai Hospital project is located on the Hornsby Ku-Ring-Gai Hospital campus between the existing Theatre Block, HOPE building and Derby Road. It occupies an area north of Burdett Street and west of Derby Road.

The site is located towards the southern end of the HKH campus and is accessed via the entrance points along Derby Road and the internal roads within the campus.

Surveys of HKH staff, outpatients and visitors on the mode of travel to and from the HKH campus have revealed that:

- 83% of staff drive car and 5% are car passenger while 6% walk and over 6% use public transport as their mode of travel.
- 93% of visitors use a car (87% car driver and 6% car passenger) as their mode of travel with about 4% using public transport as their means of transport.
- Among outpatients, 77% use car (including 23% taking a ride), 10% walk while public transport accounts for 12%.

The survey was carried out during the month of October 2011.

The results from a previous similar survey during 2004/05 had indicated that about 73% of staff drove cars while about 92% of outpatients & visitors used a car as their mode of travel.



Figure 2.2 Derby Road 90° Parking

3.0 PARKING DEMAND AND SUPPLY

3.1 Parking Survey

Parking is restricted with 2-hour limit on both sides of Palmerston Road between Edgeworth David Avenue and Burdett Street from 8.30am to 5.30pm Monday to Friday. Generally, on-street parking is available within reasonable walking distance to the Hospital.

The Hospital has a number of parking areas within its site. The locations of these areas are shown in **Figure 3.1**. These areas are situated at various locations around the Hospital.

The survey of the existing parking situation was undertaken on Wednesday, 31 August 2011 between the hours of 8.00 am to 5.30 pm. The survey indicated that the overall parking demand peaked between 11.30 noon and 2.30 pm.

An inventory of the existing parking spaces at each carpark location within the Hospital was undertaken. **Tables 3.1 and 3.2** provide a summary of the supply of parking spaces and their use within the Hospital site as well as on-street parking areas in the vicinity of the site.

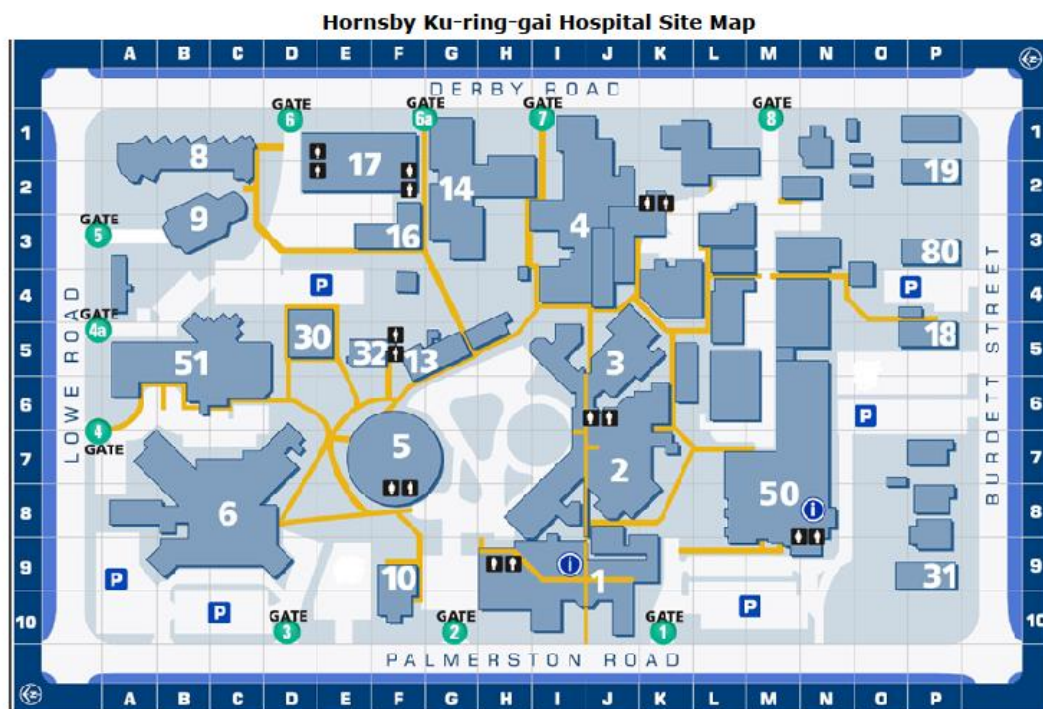


Figure 3.1 Hospital Campus Map

Table 3.1 On-Street Parking Supply and Use (31 August 2011 Survey)

LOCATION (between)	ON STREET								
	Side	800	930	1100	1230	1400	1530	1700	CAP
LOWE RD	N	20	56	62	60	61	56	16	62
King/Palmerston	S	9	30	29	29	29	29	30	30
DERBY RD	E	35	39	39	37	39	27	27	39
Lowe / Jubilee	W	64	68	70	70	67	51	11	70
PALMERSTON	E	10	19	21	18	22	19	11	19
Burdett/ Lowe	W	13	20	23	20	22	17	12	23
BURDETT ST	N	30	35	35	35	35	34	11	35
Derby / Balmoral	S	19	19	19	19	19	15	10	19
Total*		249	286	298	288	294	248	128	297

*Total on street parking capacity is in order of **600** spaces. This includes **300 spaces** on the immediate perimeter of the campus and a further **300 spaces** including Jubilee St, Northcote and Balmoral Roads, Burdett St (east) and Palmerston Rd (south) within 400m to the Hospital.

**Table 3.2 Off-Street Parking Supply and Use (31 August 2011 Survey)
Pre-Mental Health Development**

GATE/LOCATION	HOSPITAL GROUNDS							
	Capacity	800	930	1100	1230	1400	1530	1700
1 Palmerston	44	31	37	41	40	44	36	34
2 Palmerston	34	29	34	40	42	47	39	36
3 Palmerston-Lock	25	14	23	24	18	15	14	13
3 Palmerston	75	69	82	75	68	74	50	27
4 Lowe	25	18	29	29	27	28	26	18
4a Lowe	50	48	53	56	58	61	48	28
5 Lowe	1	1	1	1	1	1	1	0
Building 8 Derby	5	7	3	4	5	8	9	6
6 Derby	6	3	2	4	4	6	5	4
6a Derby	1	0	0	0	0	0	0	0
7 Derby	M	0	0	0	0	0	0	0
Meals on Wheels	5	4	3	5	3	4	3	3
8 Derby	8	1	8	6	5	4	3	3
Building 18 (Burdett)	13	11	8	8	7	10	4	1
Burdett - Lock	15	13	13	13	12	14	13	12
Burdett	28	24	27	28	28	26	22	13
Pre-school	5	7	7	9	8	7	8	7
Total	340	280	330	343	326	349	281	205

Total estimated capacity (some spaces are not formal): 340

A total of **340** parking spaces are provided within the Hospital site while **600 (300 immediate and 300 within 400m)** spaces are available as on-street parking within a walking distance to the Hospital (including Jubilee St, Northcote and Balmoral Rd as well as Burdett St, east of Derby St and Palmerston Rd, south of Burdett St). This results a **parking supply** of some **940** spaces (while acknowledging that not all on street parking supply are for the Hospital's use).

The on street parking experiences a peak demand at about 11.00 AM while for off street parking, it is at about 2.00 pm. An analysis of the data from the parking survey showed that overall, all the parking areas within the campus and on-street parking experienced an utilisation rate of over **90%** during most hours especially between 12.00 noon to 2.30 pm.

A further parking survey of the area was also carried out on 28 June 2012 considering that part of the site has been dedicated for the current construction of works (see **Figure 3.2**).

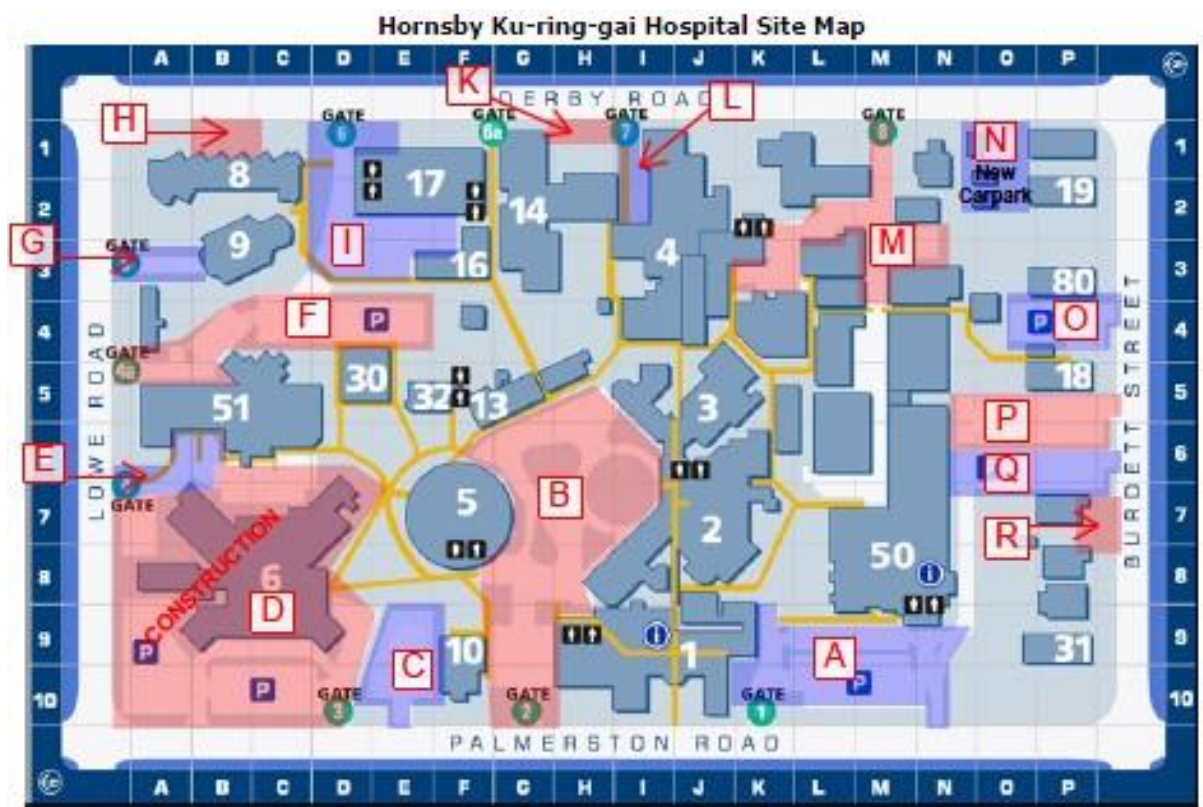


Figure 3.2 Hospital Campus Map (during construction)

The results of the survey as shown in **Tables 3.3** and **3.4** indicate similar findings per previous survey (2011), with a higher level of congested parking within the campus particularly at the carpark off Gate 2. This is mainly due to temporary loss of parking during the construction period. The highest parking demand was observed from 11.00 AM to 2.30 PM.

**Table 3.3 Off-Street Parking Supply and Use (28 June 2012 Survey)
During Mental Health Development**

		ON STREET								
LOCATION		800	930	11	12	1330	1500	1630	1800	CAP
LOWE RD	N	60	62	62	60	61	53	39	15	62
King/Palmerston	S	29	31	31/1*	30	31	25	14	8	30
PALMERSTON RD	E	18	24	25/2*	24	24	19	16	14	21
Burdett/ Lowe	W	18	22	25/1*	21/1*	23/2*	17/1*	13/1*	15/1*	23
DERBY RD	E	36	37	39	37	39	35	13	11	39
Lowe / Burdett	W	69	71	71	71	72	64	45	39	68
BURDETT ST	N	34	35	35	35	34	33	16	12	35
Derby / Balmoral	S	19	19	19	19	19	13	9	6	19
Total		283	301	307	297	303	259	165	120	297

*shows informal parking mainly on grass verge

**Table 3.4 On-Street Parking Supply and Use (28 June 2012 Survey)
During Mental Health Development**

		HOSPITAL GROUNDS								
GATE		800	930	11	12	1330	1500	1630	1800	CAP
1 Palmerston	A	23/5*	34/5*	40/6*	41/7*	39/8*	39/6*	33/3*	23/2*	43
2 Palmerston	B	30/9*	30/7*	32/11*	35/18*	32/22*	30/22*	26/17*	22/13*	35
3 Palmerston (L)	C	8	15	16	13	16	17	11	8	26
3 Palmerston	D	CONST	RUCT	ION	SITE					
4 Lowe	E	1	1/1*	1	1	1	1	1	0	1Dis
4a Lowe	F	29/4*	37/9*	36/9*	36/10*	38/9*	36/8*	22/7*	17/2*	38
5 Lowe	G	1/7*	1/7*	2/9*	1/6*	1/8*	1/7*	0/5*	0/1*	1
Building 8 Derby	H	5/1*	2	1	1	5/1*	5/2*	4/1*	4/1*	5
6 Derby	I	17	26/1*	22	24	26	25/1*	13	9	26
6a Derby	J	0	1	1	1	2	0	0	0	1
Footpath Ambulance	K	1	1	1	1	1	0	0	1	2
7 Derby (Locked)	L	0	0	0	0	0	0	0	0	Main
8 Derby / MoW	M	3	3/2*	4	4/1*	4	4/1*	4/3*	4/2*	5
New Carpark	N	20	22	25	24	23	18	9	7	25
Building 18 Burdett	O	7/3*	8/4*	11/4*	6/3*	8/4*	7/2*	1/1*	1	13
Burdett (Locked)	P	13/2*	12/3*	10/2*	10/2*	11/2*	11/2*	13/2*	11/2*	15
Burdett	Q	28	27/1*	28/1*	28/1*	28/1*	22	19	23	28
Pre-school	R	2	6	6/1*	7	5	5	6	1	5
Total		188	226	236	232	240	221	162	131	269

*shows informal parking mainly on grass verge

3.2 Parking Demand

The parking demand for the Hospital based on its current operation (prior to construction of Mental Health facility) would be in order of **620** spaces. This incorporates:

Staff: 450 spaces for 777 staff, based on 83% car use and taking into account 30% for shift works (e.g. nursing staff) and absence for holiday, seminar, etc. (fleet and service vehicles are included).

Outpatients: 130 spaces (based on additional 680 outpatients per day and 77% car use and staying about 120 minutes over an 8 hour period)

Visitors: 40 spaces during peak parking demand (based on 2.0 separate visitors per bed during a full day for 254 beds with average stay of 1 hour at 87% car use of total visitors – during the day time only ($254 \times 2 \times 0.87 = 442/12\text{hrs}$). Note: majority of visitors attend after hours when there is availability of more car parking.

Parking Demand (prior to new Mental Health) = **620** spaces

Additional parking demand from new Mental Health = 50 spaces (per separate approved application). Therefore, total Parking Demand for the existing operation of the Hospital and new Mental Health facility would be **670** spaces

3.3 Stage 1 Parking Demand

The additional parking demand for the **Stage 1** of the Hospital Redevelopment would be in order of some **100** spaces. This includes:

Staff: 74 spaces (for 171 staff, based on 80% car use (as future rate for car use) and taking into account 40% for shift works (due to the nature of upgrade and staffing e.g. higher nursing and medical) and 10% absence for holiday, seminar, etc

Outpatients: 14 spaces (based on additional 70 outpatients per day and 77% car use and staying about 120 minutes over an 8 hour period)

Visitors: 12 spaces during peak parking demand (based on 2.0 separate visitors per bed during a full day for 85 additional beds with average stay of 1 hour at 87% car use of total visitors – during the day time only ($85 \times 2 \times 0.87 = 174/12\text{hrs}$).

Total additional parking demand for Stage 1 proposal: **100** spaces

Note: due to the characteristics of redevelopment and introduction of 3 additional theatres, a higher level of shift works have been utilised, based on information from Health Services projections/study management.

Considering a parking demand of 670 spaces for the current operation of the Hospital and the new Mental Health facility, therefore the total parking demand for the Hospital at completion of Stage 1 Redevelopment would be **770** spaces.

3.4 Parking Supply

The parking requirements for the Hornsby Hospital Campus have been assessed based on its current and future activities. It should be noted that the Hornsby Council Development Control Plan does not provide specific requirements for these types of developments i.e. health related facilities. The RMS's Guide to Traffic Generating Developments also does not have any specific requirements or traffic generation rate for Public Hospitals. The Council's DCP and the RMS Guide suggest undertaking a traffic study for assessment of such facilities. Accordingly, an evaluation of parking demand has been made on this basis and detailed in Sections 3.1 and 3.2 of this report.

The parking requirement for the Hospital Campus is evaluated for the proposed redevelopment of the Hospital and is based on the expected additional activities of the Stage 1, Hospital Redevelopment.

It should be noted that parking requirement and its provision for the new mental health has been assessed as part of a separate project. A total of 50 additional parking spaces will be required as part of the redevelopment of the new mental health facilities (Traffic and Parking Report for the New HKH Mental Health Facilities (TTW, 2011). Of these, 25 car parking spaces at south east corner of the campus have been dedicated for mental health use. As part of the proposed Stage 1 Redevelopment plan, these 25 spaces will be relocated to car parking area near Building 5 (round building) which is in much more close proximity to the New Mental Health Facility. These spaces will be designated for Mental Health use only. This measure will be an improvement to functionality of hospital's operation including mental health unit and its users.

As stated earlier, currently, the Hospital Campus and its surrounding streets provide some 940 parking spaces (640 on the Hospital Campus and at the Campus perimeter) for the Hospital use (not considering the construction activities and Mental Health). In summary the existing parking provision comprises of:

Parking Supply

- Existing Hospital Campus (prior to Mental Health): **340** spaces
- On street parking along immediate streets to the Hospital Campus: **300** spaces
- On street parking along streets within walking distance: **300** spaces
- Parking Supply (prior to construction and Mental Health): **940** spaces
(Off street 340 + 600 on street)

Considering the additional parking demand for the Stage 1 of Hospital redevelopment and the new Mental Health, an additional 150 car parking spaces would be required (i.e. an additional 100 spaces for the Hospital's Stage 1 Redevelopment and 50 spaces for the new Mental Health facility).

Therefore a total parking supply of some **770** spaces would be required to accommodate various uses of the Hospital campus for its Stage 1 redevelopment and the already approved Mental Health facility. This includes:

Parking Demand prior to Mental Health: 620 spaces
Mental Health Parking Requirements: 50 spaces
Stage 1 Redevelopment Parking Demand: 100 spaces
Total Parking Demand: 770 spaces

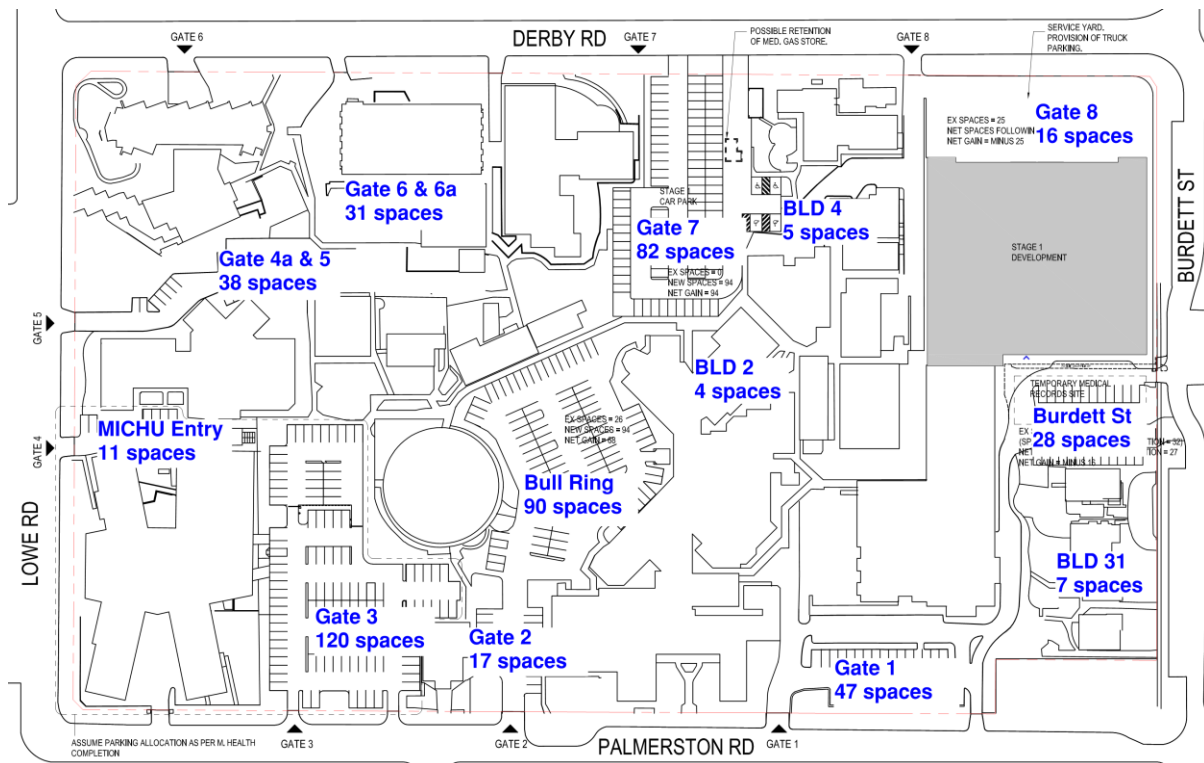


Figure 3.3 Hospital Campus Parking Stage 1 Redevelopment

The proposed Stage 1 Hospital Redevelopment provides a total of some **105 new** parking spaces within the campus. After the completion of various components (including designated 25 car parking spaces for Mental Health use near Building 5) there will be a total of 495 spaces on-campus. The remaining 275 car parking spaces are available by use of on-street parking (out of total some 600 spaces). Therefore, the required parking demand is met by provision of additional on-site parking (within the campus) and use of streets near the campus per existing operation of the Hospital.

However, as discussed in Section 3.4, a parking strategy will be put in place to provide further parking on site. The proposed parking provision within the Campus after the completion of Stage 1 Redevelopment is shown in **Figure 3.3** (above).

It is envisaged that parking demand would be contained by introduction of appropriate strategies that will promote less car dependency (as a mode of travel) particularly among staff.

A total of some 12 additional accessible car parking spaces should also be provided as part of the master plan parking provision which accounts for 12% of total additional parking spaces (i.e. 100 spaces for Stage 1). Provision of bicycle parking (say about 40 spaces about 5% of total additional staff) throughout the campus at appropriate locations are also included as part of the proposal for the site.

Parking supply on and off street is shown in Figure 3.4. Parking demand and supply for the existing and future Hospital campus are detailed in **Tables 3.5** and **3.6**

Table 3.5 Overall Parking Demand for Stage 1 Redevelopment

DEVELOPMENT SITE	STAFF (no. of spaces)	PUBLIC (no. of spaces)	TOTAL Demand
Existing Hospital Campus (Prior to Mental Health)	450	170	620
Mental Health Facility	46*	4*	50
Additional Demand–Stage 1	74	26	100
Total Stage 1	570	200	770

*subject to Mental Health allocation of spaces

Table 3.6 Overall Parking Supply for Stage 1 Redevelopment

DEVELOPMENT SITE	TOTAL Demand Spaces	TOTAL Supply on Campus Spaces	Use of On Street Parking Spaces	TOTAL Supply including on street parking spaces
Existing Hospital Campus (Prior to Mental Health)	620	340	280	640
After Mental Health	670	390	280	670
Stage 1+Mental Health	770	495	275	790

Table 3.6 indicates that parking provision for Stage 1 development will have no adverse impact on parking availability along streets within the walking distance to the Hospital as it reduces the on street parking demand (from 300 to 295) while maintaining an overall surplus of 20 spaces between overall parking demand and supply (i.e 640-620, 690-670 and 790-770)



Figure 3.4 Parking Supply and Accessibility (Current + Future)

3.5 Parking Strategy

An analysis of the site for possible future parking locations indicates that there is the potential to create a net gain of up to approximately 400 parking spaces by construction of multi storey car park as part of the Stage 2 Redevelopment of the site. This will increase the parking supply within the Hospital Campus to some 800 spaces in total.

Accordingly, it is suggested that such provision would be made available for the Hospital's users. This initiative has been supported by Health Infrastructure. The vision to improve the parking at the hospital is in line with the recent NSW government policy to review carparking at all hospitals in NSW.

Endeavour should also be made to promote sustainable transport by encouraging more use of public and active transport to reduce car parking/use demand. This has been discussed in Chapter 5.0 of this report.

It is also important to note that not all on street parking activities surrounding the Hospital Campus are Hospital related. A majority of such uses are associated with activities of clinics and private entities that operate along streets within the walking distance to the Hospital.

4.0 TRANSPORT AND ROAD NETWORK

4.1 Street System Operation

The term “level of service” for **road capacity** has been defined by AUSTROADS as:

A qualitative measure describing operational conditions within a traffic stream and their perception by motorists and or passengers. A level of service definition generally describes these conditions in terms of factors such as speed and travel time, freedom to manoeuvre, traffic interruptions, comfort, convenience and safety. In general there are six levels of service designated from A to F, with level of service A representing the best operating conditions (i.e. free flow) and level of service F the worst (i.e. forced or breakdown flow).

One-way hourly volumes for urban roads during peak hours and recommended level of service are shown in **Table 4.1**

Table 4.1 Urban Road Peak Hour Flows per Direction

Level of Service	One Lane (veh/hr)	Two Lanes (veh/hr)
A	200	900
B	380	1400
C	600	1800
D	900	2200
E	1400	2800

Source: RTA Guidelines 1995

4.2 Existing Road Network

The major approach routes to the development site are from Palmerston Road, Burdett and Derby Streets. The main access points to the site are from Palmerston Road and Derby Street.

Palmerston Road is a four lane undivided carriageway with a parking lane along each side. A section of the road is one-way (north direction) between Burdett Street and Northcote Road.

Derby Road has angle parking on its western side and has a carriageway with two travel lanes and parking on each side.

Burdett Street is treated with a traffic calming scheme and provides two travel lanes with angle parking.

The intersections of Burdett Street with Palmerston Road and Derby Street are controlled with stop signs, giving priority to Palmerston Road and Burdett Street, respectively.

The intersection of Palmerston Road and Northcote Road is T-junction with medians in Palmerston Road giving priority to movement to/from Northcote Road.

A pedestrian crossing is located in Palmerston Road near the entrance to the Hospital.

Bus zones are located in Palmerston and Lowe Roads near the Hospital entrances.

Direction signposting to the Hospital has been provided by the Roads and Maritime Services (RMS) at Edgeworth David Avenue and Pacific Highway to direct visitors to the Hospital site.

4.3 Existing Peak Hour Traffic Volumes

Traffic volume counts for the intersections along Burdett Street and Lowe Road with Derby and Palmerston Roads were carried out during a peak hour period on February 2011 and August 2011. The findings showed a lower or similar traffic volume along these routes in comparison to the results from September 2005 and March 2009 surveys.

The results of the survey (Feb 2011) indicated that Lowe Road experiences a peak traffic volume of 112 vehicles per hour (vph) (in comparison to 210 vph in 2005) while Derby and Palmerston Roads (at south of Lowe Road) having peak traffic volumes of 109 vph and 206 vph respectively (note: a higher traffic volume was observed on March 2005 i.e. 130 vph and 215 vph while 2009 data indicated lower traffic volumes in comparison to 2005 data). The results of intersection and traffic volume counts are shown in **Appendix P1**.

Table 4.2 Peak Hourly Traffic Volumes (vph) – AM and (PM)

Street	Eastbound/NB	Westbound/SB	Total
Lower Rd	54 (73)	53 (39)	106 (112)
Palmerston Rd*^	264 (225)	181 (186)	445 (411)
Derby Road^	75 (27)	68 (76)	143 (103)
Northcote Rd	102 (24)	170 (200)	272 (224)
Burdett St^	234 (170)	178 (218)	412 (388)

Key: AM (PM) - * Counts at south of Burdett Street ^Counts carried out in August 2011

The existing road network functions at a good level of service. The 85% speed levels for Low and Palmerston Roads have been recorded at 48 and 44 km/hr, respectively.

4.4 Intersection Operation

The adequacy of the capacity of an intersection is judged by whether it can physically and operationally cater for the traffic using it. The performances of the intersections have been assessed using the intersection modelling software. The model provides parameters of the performance of an intersection including the degree of saturation (DoS) and the average delay per vehicle.

Satisfactory operation of an intersection would normally continue up to 42 seconds as Average Delay/Vehicle. At this Level of Service (LoS) operating speeds are still reasonable and acceptable delays are experienced. The recommended criteria for evaluating capacity of intersections are shown in **Table 4.3**.

Table 4.3 Criteria for Evaluating Capacity of Intersection

Level of Service	Degree of Saturation (DoS)	Ave. Delay/Veh. (Secs)
A/B good operation	less than 0.80	Less than 28
C satisfactory	0.80 to 0.85	29-42
D poor but manageable	0.85 to 0.90	43-56
E at capacity	0.90 to 1.0	57-70
F unsatisfactory, extra capacity required	Over 1.0	Over 70

Accordingly, an assessment of intersections performances were carried out using a traffic modelling software and the existing intersection layouts with consideration to the morning and afternoon commuter peak hour traffic volumes.

The results of the assessment revealed that the all intersections i.e. Palmerston Road with Northcote Road and Burdett Street and Derby Road with Burdett Street are operating at a good level of service during the morning and afternoon commuter peak hours on a weekday. The average delay for all vehicles at these intersections is well below the 28 seconds per vehicle (i.e. very good level of service), indicating an ample capacity at these intersections. Since the allowable maximum average delay for vehicles is about 70 seconds per vehicle.

Table 4.4 Performance of Intersections- AM&PM Peak Hour - Weekday

Intersection	Traffic Controls	Degree of Saturation DoS	Level of Service LoS	Average Delay/Veh Sec/Veh (approach)*
AM PEAK HOUR				
Palmerston Rd & Northcote	T- Junction	0.11	A	5.8 (6.0)
Palmerston Rd & Burdett St	Stop Signs	0.32	A	8.0 (10.6)
Derby Rd & Burdett St	Stop Signs	0.15	A	7.9 (11.3)
Edgeworth David & Plam'tn	Signal	0.58	A	8.9 (17.9)
PM PEAK HOUR				
Palmerston Rd & Northcote	T- Junction	0.18	A	5.9 (6.3)
Palmerston Rd & Burdett St	Stop Signs	0.49	A	10.1 (13.9)
Derby Rd & Burdett St	Stop Signs	0.15	A	7.7 (11.1)
Edgeworth David & Plam'tn	Signal	0.63	A	9.7 (19.5)

* Highest delay on an approach

4.5 Traffic Generation

As stated earlier, the Stage 1 proposal involves 84 more beds with an addition of some 170 staff and increase of some 70 outpatients per day in comparison to the existing situation. Therefore, an **additional** peak hour traffic generation of some **155 vph** has been estimated for the Stage 1 redevelopment of the Hospital on the following basis.

- Staff arrival and departure vehicular trip (considering that not all arrive in one hour period): 171 staff X say 0.80 car use X 0.70 arrive or depart = 95 vph
- Outpatients vehicular trips: 18 outpatients arrive and depart in one hour period (worst case, assuming 2 hrs stay) X 0.77 car use = 28 vph
- Visitors vehicular trips: 17 visitors (assuming 2 visitors during a 10 hr period) arrive and depart in one hour period (worst case) X 0.93 car use = 32 vph

Note: it is expected that staff car use will be in order of 75% or lower based on previous records of 73% car use (URaP-TTW, 2005) and promotion of active and public transport.

Further, the proposed Menal Health facilities would generate some additional **45** vehicular trips during a peak period (Traffic and Parking Report for New Mental Health Facilities Hornsby Ku-ring-gai Hospital; TTW 2011)

Accordingly, an additional vehicular traffic generation of **200 vph** ($155+45=200$) has been projected for the Hospital campus as the result of future Stage 1 redevelopment of the Hospital and Mental Health expansion.

4.6 Traffic Impact

Considering, that not all traffic movements (i.e. 200 vph additional traffic generation) will be in one direction, the impact of such vehicular traffic on the road system would be minimal. This is based on 75% arrival or departure during a peak hour which results in an additional traffic volume of some 150 vph in one direction. Considering the ample road capacity along streets surrounding the Hospital (see **Tables 4.1** and **4.2**), this level of vehicular traffic is well within the capacity of the road system.

The overall assessment of the intersections related to the redevelopment site indicates that these intersections are currently operating at a good level of service and will continue to operate with similar level of service after the completion of Stage 1 redevelopment program (the assessment has included Stage 1 Hospital and Mental Health combined for a worst case scenario). The results of the assessments are shown in **Table 4.5**.

The analysis of intersection operation using SIDRA traffic modelling software indicate that all relevant intersections associated with the proposed site are operating at a good level of service and will continue to operate at similar level of service once the Stage 1 Redevelopment of the Hospital has been completed. The relevant intersections include:

- Palmerston Road and Burdett Street
- Burdett Street and Derby Road
- Northcote Road and Palmerston Road
- Edgeworth David Avenue and Palmerston Road

Table 4.5 Future Performance of Intersections-AM&PM Peak Hour

Intersection	Traffic Controls	Degree of Saturation DoS	Level of Service LoS	Average Delay/Veh Sec/Veh (approach)*
AM PEAK HOUR				
Palmerston Rd & Northcote	T- Junction	0.12	A	5.9 (6.7)
Palmerston Rd & Burdett St	Stop Signs	0.52	A	8.9 (11.9)
Derby Rd & Burdett St	Stop Signs	0.22	A	7.9 (11.9)
Edgeworth David & Plam'tn	Signal	0.59	A	9.2 (18.4)
PM PEAK HOUR				
Palmerston Rd & Northcote	T- Junction	0.21	A	6.0 (7.1)
Palmerston Rd & Burdett St	Stop Signs	0.52	A	10.4 (13.7)
Derby Rd & Burdett St	Stop Signs	0.18	A	7.8 (12.0)
Edgeworth David & Plam'tn	Signal	0.64	A	9.7 (19.5)

Note: the results of SIDRA analysis are available on **Appendix P1**

4.7 Access Requirements

Currently, all intersections along the road network in vicinity of the site operate at a good level of service with ample capacity. The proposed Stage 1 development of the Hospital in terms of its vehicular traffic will have minimal impact on the road network and intersections operation.

Vehicular access points are maintained per existing situation via Derby Road and Burdett Street. The existing driveway off Derby Road will be improved to accommodate access for service vehicles.

The site redevelopment is designed on the basis of best practice and current guidelines, catering for disabled access and parents with prams.

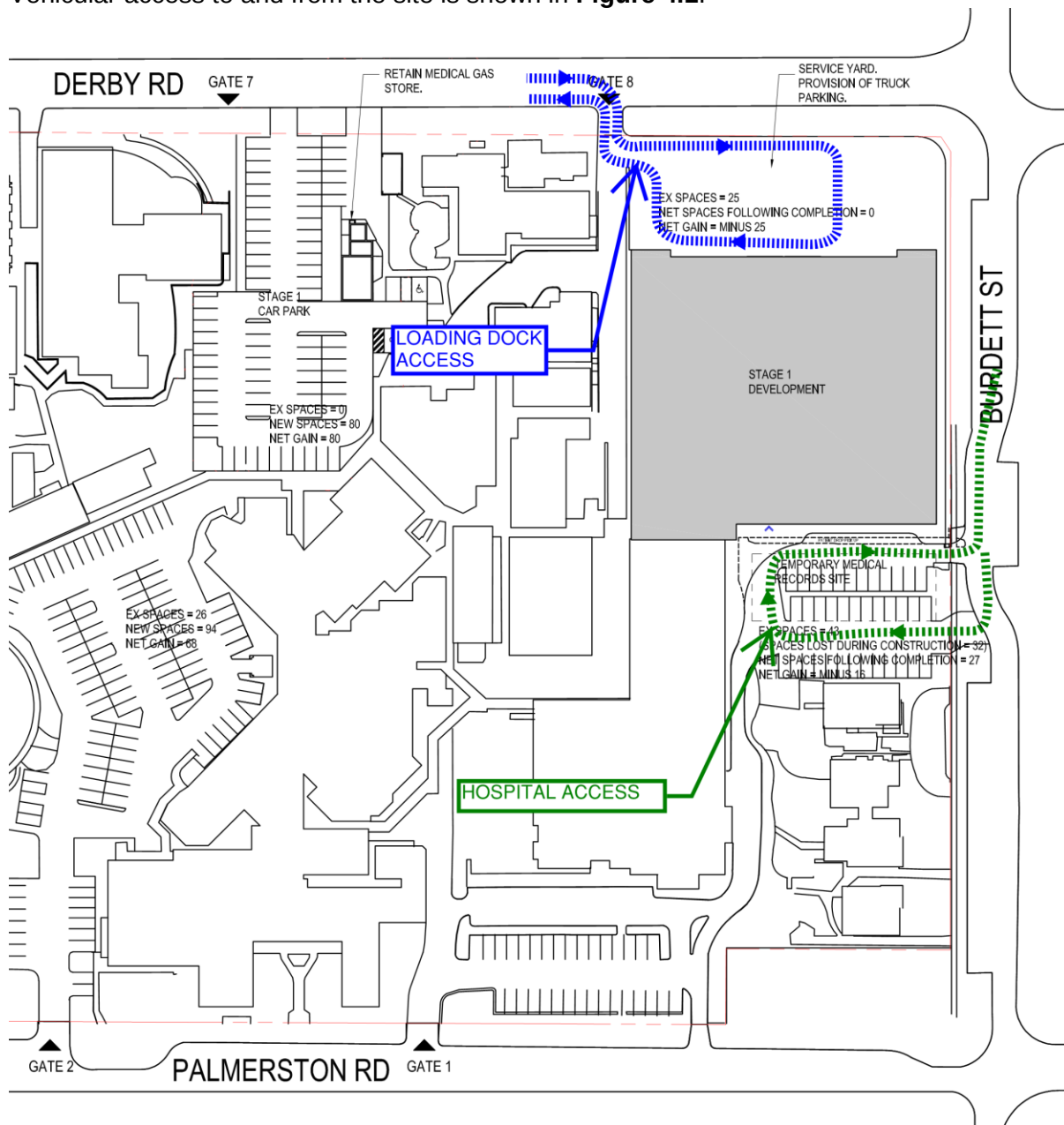
Pedestrian movement paths associated with the proposal are documented as part of the architectural drawings and shown as part of **Appendix P2**.

4.7.1 Service Vehicles

All service vehicles including trucks will enter and exit the site in forward direction. All vehicular turning paths to and from the loading areas are shown in **Appendix P3**.

Access to the site will be maintained per existing situation with relevant modifications to facilitate better and safer vehicular movements. The architectural drawings for the site demonstrate the loading areas and associated improvements. A total of some 25 truck movements could occur within a day (about 15 during the morning period and 10 in the afternoon). Approximately 10 to 15 other deliveries also occur throughout the day using vans, smaller trucks for couriers and other services.

Vehicular access to and from the site is shown in **Figure 4.1**.



Key: **Blue**: service vehicles

Green: cars

Figure 4.1 Vehicular Access

4.7.2 Construction Access

A Construction Traffic Management Plan (CTMP) will be prepared prior to commencement of works. Provision for pedestrian and cyclist access will be made as part of the CTMP.

The designated heavy vehicle routes would be via major approach roads such as Pacific Highway and George Street. **Figure 4.2** illustrates potential truck routes to the site.

It is anticipated that some 30 vehicular trips associated with construction staff would occur during each AM and PM peak periods. Parking for construction staff should be provided on

site as part of the Early Works on formalisation of carparking areas. As part of the car parking provision strategy for construction workers the following measures are therefore proposed:

- Endeavour should be made to provide maximum parking on site for construction workers during the construction period.
- In addition to the above, discussion with Council could take place to further improve the parking situation by leasing an area e.g. within James Park (subject to HI approval and Council's/residents' view and its feasibility).
- Seeking any other possible areas within the close proximity of the Hospital for car parking use and possibly its lease.
- Consideration of shuttle bus for construction/staff workers between the Hospital and Train Stations (Waitara and Hornsby) during peak hours.
- High level incentive among construction workers to use public transport or car pool – this could be included as part of the contract to selected builder.



Figure 4.2 Potential Construction Routes

4.8 Pedestrian and Cyclist Access

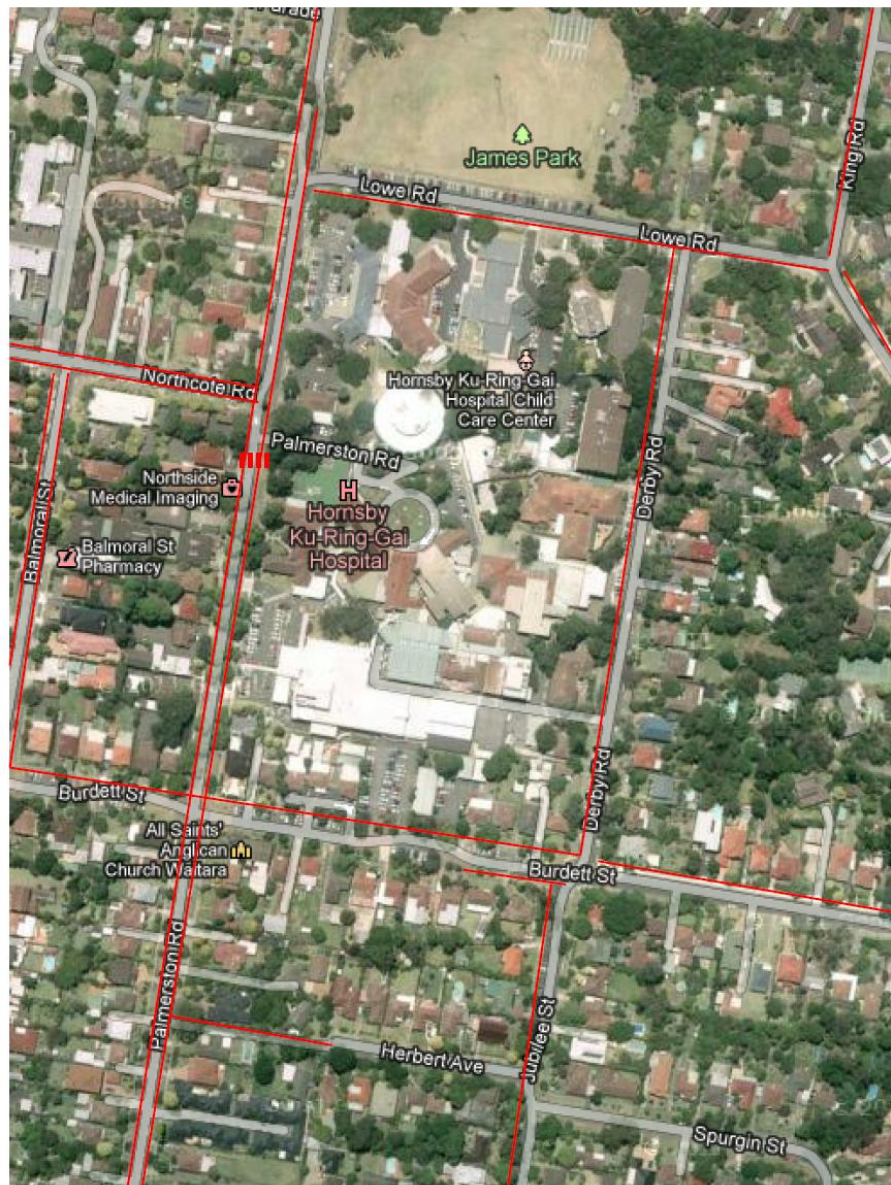
Currently pedestrian facilities such as covered walkways and marked foot crossings are provided at certain locations within the Campus. These are mainly located between car parking areas and main activity areas of the Hospital.

Accordingly, pedestrian facilities and links will be provided as part of the Hospital redevelopment plan. Pedestrian routes for the proposed redevelopment have been identified and are shown in **Appendix P2**.

Introduction of bicycle parking at various locations within the Hospital Campus will also provide additional amenities for the users of the Hospital and would promote active transport particularly among the Hospital's staff. A total of 40 spaces (at various locations) are proposed for bicycle parking as part of the Stage 1 Development.

Bicycle routes based on Hornsby Council's Bike Plan are shown in **Appendix P4**. This provides a transport nexus for the existing Hospital Campus and the proposed redevelopment site. It also promotes more choice of travel modes for users of the Hospital.

The study area is well serviced by walkway and pedestrian footpaths and facilities along the streets surrounding the Hospital are shown in **Figure 4.3**.



KEY:

-  Footpath
-  Pedestrian Crossing

Figure 4.3 Pedestrian Facilities

4.9 Accessibility

The access to the Hospital Campus is provided by various mode of travel as described below.

By Train and Bus

The nearest railway stations are Waitara and Hornsby. Hornsby is accessible via both the main North line and the North Shore line. Waitara is on the North Shore line.

The Shorelink Bus service number 574 and 575 travel to Hornsby Ku-ring-gai Hospital from Hornsby Railway Station (near Station Street). These pick up and set down at the front entrance of the Hospital, in Palmerston Road. A timetable is available in the **Appendix P4**. Frequency of service is about every 30 minutes during peak hours and the total trip takes 50 minutes. To walk from Hornsby train station to the Hospital, it takes about 30 minutes.

There are no bus services to Hornsby Ku-ring-gai Hospital (HKH) available from Waitara railway station.

Hornsby railway station has a ramp and a lift, so it is a more suitable choice for people with mobility issues.

By Car

Hornsby Hospital is situated on Sydney's upper north shore and located 5 minutes from the F3 expressway. Main approach routes such as Pacific Highway and Edgeworth David Avenue provide main access links to the Hospital's surroundings. Off street parking is sometimes available at Lowe and Derby Roads, 2 hour parking spots are available in Palmerston Road between Burdett Street and Edgeworth David Avenue. Some parking areas are assigned for ambulances, medical staff and other special purposes.

By Taxi

Hornsby Hospital covers a large area and Taxis can drop off/pick up at the exact point. Free taxi phones are located in the main entrance and emergency department.

Walking

The Hospital's website provides directions for walking to the Hospital and nearby railway stations as detailed below:

From Waitara Station:

The distance to the Hospital from Waitara Station is approximately 1.4 km. You will need to leave the station on the Alexandria Avenue side. Cross at the pedestrian crossing to reach Waitara Avenue (it will be slightly to your right).

Walk along to the end of Waitara Avenue and take the pathway through to Edgeworth David Avenue. Just to your left there will be traffic lights where you may safely cross the road to the other side of Edgeworth David Avenue. Continue to your right along Edgeworth David Avenue until you reach Palmerston Road and turn left into Palmerston Road. You will come to the main Hospital entrance on your right hand side, soon after you cross Burdett Street.

From Hornsby Station:

The distance to the Hospital from Hornsby Station is approximately 1.5 km. No matter which route is taken, part of the walk will be 'uphill'. You would need to leave the station on the George Street side, and it is safest to use the pedestrian overpass, which will bring you out

near the mall. Walk down through the Mall and continue down Florence Street to the 'T' intersection. Turn left and walk down Sherbrook Road until you reach the intersection with Burdett Street. Cross to the opposite side of Burdett Street at the lights. Then cross at the lights on that side to walk on the footpath up the hill along Burdett Street. Continue to walk up Burdett Street. Eventually you will come to Palmerston Road. If you then turn left and walk along you will soon come to the main Hospital entrance on your right hand side.

By Air

The closest domestic and international airport is Sydney Airport. Trains are available from the airport via the City. Airport Express buses run between Central Railway Station and Sydney Airport.

Bus Routes and access routes to Train Stations are shown in **Figures 4.4 and 4.5.**

Bus Routes Near Hornsby Hospital

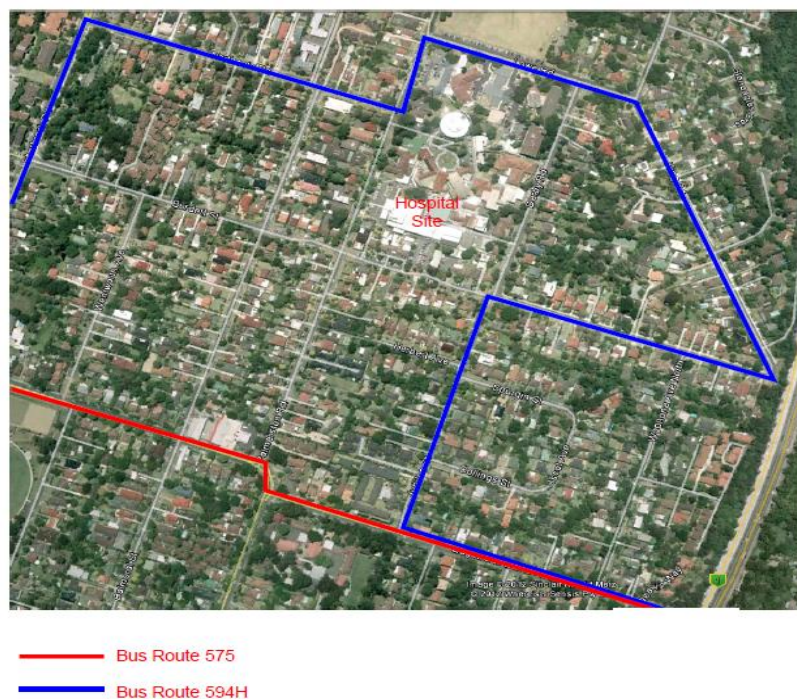


Figure 4.4

Access to Bus Routes

Walking Routes from Waitara and Hornsby Stations to Hornsby Hospital



Figure 4.5

Access to Train Stations

PUBLIC TRANSPORT SERVICE FREQUENCY

Hornsby Train Station

Hornsby station is located in Station Street, Hornsby. Hornsby Station is Wheelchair accessible and staffed from the first to the last train service. The station is serviced by three lines;

The North Shore line (NSL) – Operating services between Berowra & Parramatta with extensions to Wyong and Springwood in peak times. Services operate to the city via Gordon. Some services only go as far as Chatswood in the daytime. Around half of the services terminate/begin at Hornsby and do not extend to Berowra

The Northern line (NL) – Operates services from Epping & Hornsby to the City. Services operate from Hornsby to the City via Macquarie Park or Epping.

The Newcastle and Central Coast line (NCCL) – Operates services between Newcastle and Central (intercity platforms). Some services only extend as far as Wyong or Gosford.

Number of Services

Monday to Friday Services

Route	Operates between (Services to...)		Number of Services AM Peak (7-9)		Number of Services Daytime (9-4)		Number of Services PM Peak (4-6)	
	Inbound	Outbound	IB	OB	IB	OB	IB	OB
NSL	Hornsby	City	16	16	39	34	15	19
NL	Berowra	(Via City) Parramatta	9	8	31	32	8	7
NCCL	Newcastle	Central	4	7	14	15	8	5

Saturday Sunday and Public Holiday Services

Route	Operates between (Services to...)		Number of Services AM Peak (7-9)		Number of Services Daytime (9-4)		Number of Services PM Peak (4-6)	
	Inbound	Outbound	IB	OB	IB	OB	IB	OB
NSL	Hornsby	City	8	9	28	27	8	8
NL	Berowra	(Via City) Parramatta	8	9	28	28	8	8
NCCL	Newcastle	Central	4	4	14	14	4	4

Number of Services per Hour

Monday to Friday Services

Route	Operates between (Services to...)		Services Per hour AM Peak (7-9)		Services Per hour Daytime (9-4)		Services Per hour PM Peak (4-6)	
	Inbound	Outbound	IB	OB	IB	OB	IB	OB
NSL	Hornsby	City	8	8	5.6	4.9	7.5	9.5
NL	Berowra	(Via City) Parramatta	4.5	4	4.4	4.8	4	3.5
NCCL	Newcastle	Central	2	3.5	2	2.1	4	2.5

Saturday Sunday and Public Holiday Services

Route	Operates between (Services to...)		Services Per hour AM Peak (7-9)		Services Per hour Daytime (9-4)		Services Per hour PM Peak (4-6)	
	Inbound	Outbound	IB	OB	IB	OB	IB	OB
NSL	Hornsby	City	4	4.5	4	3.9	4	4
NL	Berowra	(Via City) Parramatta	4	4.5	4	4	4	4
NCCL	Newcastle	Central	2	2	2	2	2	2

Services Headways

Monday to Friday

Route	Operates between (Services to...)		Service Headway (min) AM Peak (7-9)		Service Headway (min) Daytime (9-4)		Service Headway (Min) PM Peak (4-6)	
	Inbound	Outbound	IB	OB	IB	OB	IB	OB
NSL	Hornsby	City	7.5	7.5	10.8	12.4	8.0	6.3
NL	Berowra	(Via City) Parramatta	13.3	15.0	13.5	13.1	15.0	17.1
NCCL	Newcastle	Central	30.0	17.1	30.0	28.0	15.0	24.0

Saturday Sunday and Public Holidays

Route	Operates between (Services to...)		Service Headway (min) AM Peak (7-9)		Service Headway (min) Daytime (9-4)		Service Headway (Min) PM Peak (4-6)	
	Inbound	Outbound	IB	OB	IB	OB	IB	OB
NSL	Hornsby	City	15.0	13.3	15.0	15.6	15.0	15.0
NL	Berowra	(Via City) Parramatta	15.0	13.3	15.0	15.0	15.0	15.0
NCCL	Newcastle	Central	30.0	30.0	30.0	30.0	30.0	30.0

Waitara Train Station

Waitara Station is located in Alexandria Parade Waitara. Waitara Station is NOT wheelchair accessible. Waitara is serviced by the north shore line only.

Number of Services

Monday to Friday

Route	Operates between (Services to...)		Number of Services AM Peak (7-9)		Number of Services Daytime (9-4)		Number of Services PM Peak (4-6)	
	Inbound	Outbound	IB	OB	IB	OB	IB	OB
NSL	Hornsby	City	13	12	38	33	12	18

Saturday Sunday and PH day

Route	Operates between (Services to...)		Number of Services AM Peak (7-9)		Number of Services Daytime (9-4)		Number of Services PM Peak (4-6)	
	Inbound	Outbound	IB	OB	IB	OB	IB	OB
NSL	Hornsby	City	8	8	28	28	8	8

Number of Services per hour

Monday to Friday Services

Route	Operates between (Services to...)		Services Per hour AM Peak (7-9)		Services Per hour Daytime (9-4)		Services Per hour PM Peak (4-6)	
	Inbound	Outbound	IB	OB	IB	OB	IB	OB
NSL	Hornsby	City	6.5	6	5.428571	4.714286	6	9

Saturday Sunday and Public Holiday Services

Route	Operates between (Services to...)		Services Per hour AM Peak (7-9)		Services Per hour Daytime (9-4)		Services Per hour PM Peak (4-6)	
	Inbound	Outbound	IB	OB	IB	OB	IB	OB
NSL	Hornsby	City	4	4	4	4.0	4	4

Services Headways

Monday to Friday

Route	Operates between (Services to...)		Service Headway (min) AM Peak (7-9)		Service Headway (min) Daytime (9-4)		Service Headway (Min) PM Peak (4-6)	
	Inbound	Outbound	IB	OB	IB	OB	IB	OB
NSL	Hornsby	City	9.2	10.0	11.1	12.7	10.0	6.7

Saturday Sunday and Public Holidays

Route	Operates between (Services to...)		Service Headway (min) AM Peak (7-9)		Service Headway (min) Daytime (9-4)		Service Headway (Min) PM Peak (4-6)	
	Inbound	Outbound	IB	OB	IB	OB	IB	OB
NSL	Hornsby	City	15.0	15.0	15.0	15.0	15.0	15.0

BUS SERVICES

Bus Routes providing services to and from the Hospital are shown in **Figure 4.6**.

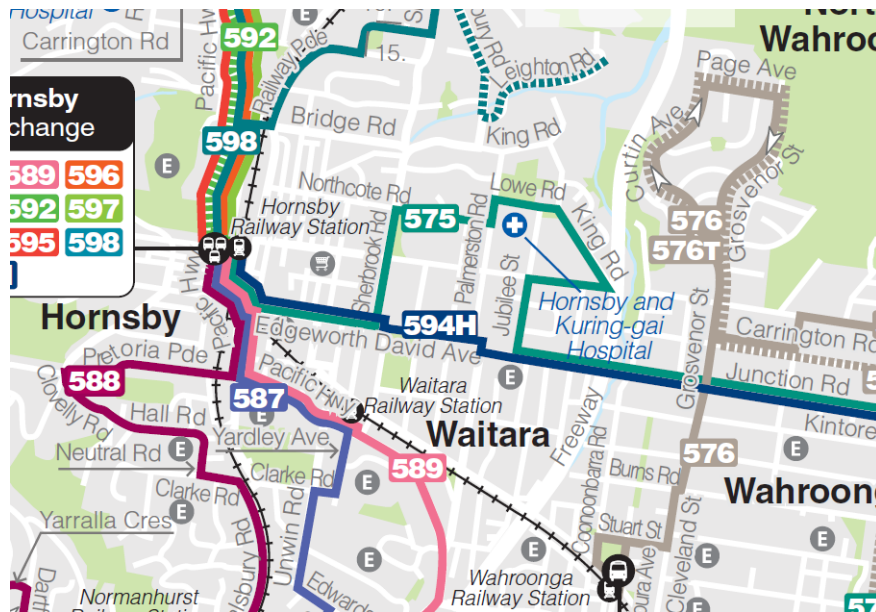


Figure 4.6 Bus Routes

Number of Busses during Peak Period

Monday - Friday

Route	Operates between (Services to...)		Stop	Number of Busses AM Peak (7-9)		Number of Busses Daytime (9-4)		Number of Busses PM Peak (4-6)		Notes
	Inbound	Outbound		IB	OB	IB	OB	IB	OB	
575	Hornsby	Macquarie University	Hornsby Hospital (207766)	5	5	14	14	4	4	
594H	City	Hornsby	Edgeworth David Ave Near Waitara PS	2	0	1	0	3	0	Outbound busses express from St Ives, Will not stop near hospital.

Saturday

Route	Operates between (Services to...)		Stop	Number of Buses AM Peak (7-9)		Number of Buses Daytime (9-4)		Number of Buses PM Peak (4-6)		Notes
	Inbound	Outbound		IB	OB	IB	OB	IB	OB	
575	Hornsby	Macquarie University	Hornsby Hospital (207766)	0	1	7	7	2	2	
594H	City	Hornsby	Edgeworth David Ave Near Waitara PS	No Services						

Sunday and Public Holidays

Route	Operates between (Services to...)		Stop	Number of Buses AM Peak (7-9)		Number of Buses Daytime (9-4)		Number of Buses PM Peak (4-6)		Notes
	Inbound	Outbound		IB	OB	IB	OB	IB	OB	
575	Hornsby	Macquarie University	Hornsby Hospital (207766)	0	1	7	7	1	1	
594H	City	Hornsby	Edgeworth David Ave Near Waitara PS	No Services						

Average Bus Headways (Minutes)**Monday to Friday**

Route	Operates between (Services to...)		Stop	Bus Headway AM Peak (7-9)		Bus Headway Daytime (9-4)		Bus Headway PM Peak (4-6)	
	Inbound	Outbound		IB	OB	IB	OB	IB	OB
575	Hornsby	Macquarie University	Hornsby Hospital (207766)	24	24	30	30	30	30
594H	City	Hornsby	Edgeworth David Ave Near Waitara PS	60	No Service	420	No Service	40	No Service

Saturday

Route	Operates between (Services to...)		Stop	Bus Headway AM Peak (7-9)		Bus Headway Daytime (9-4)		Bus Headway PM Peak (4-6)	
	Inbound	Outbound		IB	OB	IB	OB	IB	OB
575	Hornsby	Macquarie University	Hornsby Hospital (207766)	No Service	120	60	60	60	60
594H	City	Hornsby	Edgeworth David Ave Near Waitara PS	No Services					

Sunday and Public Holiday

Route	Operates between (Services to...)		Stop	Bus Headway AM Peak (7-9)		Bus Headway Daytime (9-4)		Bus Headway PM Peak (4-6)	
	Inbound	Outbound		IB	OB	IB	OB	IB	OB
575	Hornsby	Macquarie University	Hornsby Hospital (207766)	No Service	120	60	60	120	120
594H	City	Hornsby	Edgeworth David Ave Near Waitara PS	No services					

Average Number of Busses per Hour**Monday-Friday**

Route	Operates between (Services to...)		Stop	Busses per hour AM Peak (7-9)		Busses per hour Daytime (9-4)		Busses Per hour PM Peak (4-6)	
	Inbound	Outbound		IB	OB	IB	OB	IB	OB
575	Hornsby	Macquarie University	Hornsby Hospital (207766)	2.5	2.5	2	2	2	2
594H	City	Hornsby	Edgeworth David Ave Near Waitara PS	1	0	0.14	0	1.5	0

Saturday

Route	Operates between (Services to...)		Stop	Busses per hour AM Peak (7-9)		Busses per hour Daytime (9-4)		Busses Per hour PM Peak (4-6)	
	Inbound	Outbound		IB	OB	IB	OB	IB	OB
575	Hornsby	Macquarie University	Hornsby Hospital (207766)	0	0.5	1	1	1	1
594H	City	Hornsby	Edgeworth David Ave Near Waitara PS	0	0	0	0	0	0

Sunday and Public Holiday

Route	Operates between (Services to...)		Stop	Busses per hour AM Peak (7-9)		Busses per hour Daytime (9-4)		Busses Per hour PM Peak (4-6)	
	Inbound	Outbound		IB	OB	IB	OB	IB	OB
575	Hornsby	Macquarie University	Hornsby Hospital (207766)	0	0.5	1	1	0.5	0.5
594H	City	Hornsby	Edgeworth David Ave Near Waitara PS	0	0	0	0	0	0

5.0 TRANSPORT MANAGEMENT STRATEGY

As stated earlier (Section 1.2) a number of planning documents provide guidelines and strategies for future development of the region in order to achieve their targets. Some of their related key objectives include:

- *Providing upgrade and expanded health services (NSW State Plan 2021)*
- *Increasing the patronage of the transport services (NSW State Plan 2021)*
- *Providing higher level of public transport services(North Subregion Draft Subregional Strategy)*
- *Increase the mode share of bicycle trips made in the Greater Sydney region, at a local and district level, to 5% by 2016 (NSW State Plan)*
- *Increased targets for public transport mode share for all journeys to work trips across the metropolitan area. (NSW State Plan)*
- *Achieving environmental and health benefits (Sydney Metropolitan Strategy, Transport Plan).*

The above mentioned documents (i.e. NSW State Plan and North Subregion Draft Subregional Strategy) also state related factors such as “land use changes should be planned to take advantage of new and existing public transport infrastructure, not to reduce car use, but to increase the viability of the public transport services” and “it is also important to enhance the public transport experience by providing awnings and shelters at bus stops, appropriate lighting levels to ensure safety, a high standard of information delivery, and access for all levels of mobility.”

Accordingly, in line with such objectives a number of strategies are included as part of the project and/or recommended in order to achieve such goals to improve the liveability, quality of life and sustainable transport for the region and its community.

For example, the higher use of public and active transport will not only create a healthier environment but will also improve the road safety and character of the built environment.

Further, decreased use of the car, particularly by the Hospital's staff, will reduce the need for construction of carparks and their associated costs. This means freeing funds for other activities and needs.

It should however be noted that some major initiatives have already been taken by the Area Health Services. For example, the document *Health Promotion – June 2010*; NSCCAHS and *Hornsby Ku-ring-gai Operational Plan 2011* outlines actions such as Urban Planning for Health and Go Active 2 Work. These measures emphasise on better accessibility to a health facility while encouraging active and public transport.

Further, as part of the proposed redevelopment plan for the Hospital, bicycle racks are to be placed at appropriate locations within the Campus. The current and proposed pedestrian footpaths/walkways and facilities for cyclist together with *Health Promotions* will provide better amenity and information for the users of the Hospital and hence reduce car dependency.

It is vital to take into account the future level of population increase within the region and to provide solutions that are complementary to State, regional and local transport plans.

Therefore, following measures are put forward for consideration and implementation in order to achieve the desired goals and targets as outlined above and detailed in relevant planning documents:

- Preparation of Go 2 Work Travel Plan for the Hospital – see an example for *Northern Beaches Hospital* in **Appendix P4**.
- Preparation of Transport Access Guide for the Hospital – see an example for *Manly Hospital* in **Appendix P4**.
- Provision of incentive schemes among staff e.g. subsidised bus tickets.
- Negotiation with bus agencies for provision of frequent bus services with faster and more direct destinations e.g. shuttle bus between city centre/shopping areas and the Hospital.
- Provision of shuttle bus between train station and the Hospital.
- Establishment of a waiting list for parking space for new Hospital staff. This means that any new staff will not have a parking space until one becomes available.
- Introduction of parking fees for new Hospital staff, possibly combined with provision of subsidised public transport tickets.
- Provision of better, safer (in terms of route alignment as well as security) bicycle and pedestrian routes. This measure should be devised in consultation with Council and other authorities.
- Promotion of the merits of walking and bicycle riding in order to encourage staff living near the Hospital to leave their cars at home.
- Provision of bicycle parking within the campus.
- Provision of safer and higher quality bus shelters or waiting areas.

6.0 MAJOR ISSUES AND FINDINGS

The Hornsby Ku-ring-gai Hospital is located approximately one kilometre to the east of the Hornsby CBD and occupies an area of about 6.4 hectares. A survey plan of the existing facility is attached.

The Hornsby Ku-ring-gai Hospital has been providing health care to the region stretching from the Hawkesbury River to Lindfield, east to St Ives and west to Pennant Hills, Cherrybrook and Epping since 1933. The hospital is a teaching hospital of the University of Sydney and offers a range of services over its numerous hospitals, health centres and education centres.

Specifically, Hornsby Ku-ring-gai Health Service offers the following specialised services:

- Coronary and intensive care,
- Child and adolescent unit
- Emergency department
- Rehabilitation and aged care service
- Maternity and obstetric care, and women's health
- Allied health services (physiotherapy, occupational therapy and social work)
- Medical and Surgical Services
- Counselling and Mental Health Services

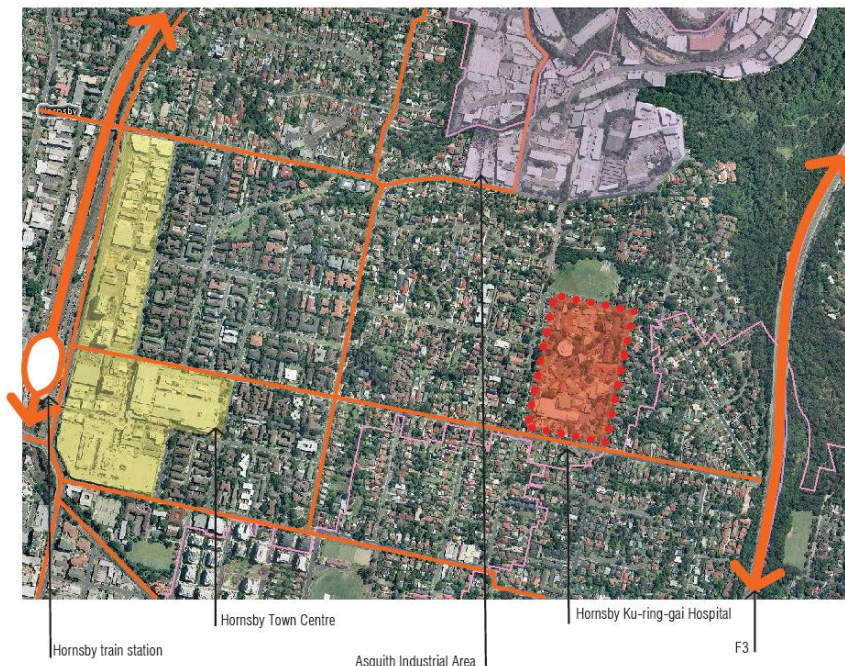


Figure 6.1 Surrounding locality

It is apparent that the importance of this proposal is critical to the ongoing provision of health services to the broader northern Sydney and central coast area. The hospital itself is also recognised in State, subregional and local planning documents as detailed below.

Strategic Planning Importance

The “City of Cities – a Plan for Sydney’s Future” is the key planning document guiding the long term growth of the City, and seeks to concentrate growth in centres, to ensure equitable access to Sydney’s infrastructure and services. In order to meet the target of ensuring Sydney’s residents do not have to travel more than one hour a day for jobs, services, higher order medical and legal services, major cultural and entertainment venues, or regional open space or recreational opportunities, growth is centred around existing nodes of transport and facilities.

The site falls within the North Subregion of the Metropolitan Strategy, which identifies the Hornsby Ku-ring-gai Hospital as a major hospital, and a key component of the Major Centre and a key industry for the region in terms of employment.

The subregional strategy notes that employment within the North Subregion is focused in health, community services and education, and that *“Hornsby Ku-ring-gai Health Service is a major employer of over 1,500 employees who care for over 250,000 people residing in the area”*.

Specific objectives and outcomes for the economy and employment in the region identify several existing clusters of business activity dealing with *“knowledge infrastructure”* and the skill base of its resident workforce, specifically including medical infrastructure at the Hornsby Ku-ring-gai Health Service. The strategy recognises opportunities for these industries to be leveraged for continued success.

As evidenced by the site location above, the Hospital is well located between major road and rail infrastructure, and proximate a major centre as identified in the Metropolitan Strategy. The subregional strategy goes on to emphasise the opportunity to leverage off the strategic government land assets, identifying the upgrades to the Hornsby Ku-ring-gai Health Service as a significant capital management project demonstrating *“the use of Government land and other assets to achieve the Strategy objectives”*.

It is clear from the above that the upgrades to the Hornsby Ku-ring-gai Hospital are of regional significance and warrant its application.

Proposed Development

The future parking demand for the campus including Stage 1 Redevelopment is **770** spaces. The proposed redevelopment plan for the site provides this level of car parking as part of its on and off street parking strategy. i.e a parking supply of 790 spaces (see Table 3.6). The car parking provision for already approved Mental Health Facility with capacity of 25 spaces will be relocated from south-east corner of Hospital Campus to the parking area near Building 5. These 25 spaces will be dedicated for mental health use where will be in much closer proximity to the new Mental Health Facility.

The existing road system and access arrangements operate at good level of service and will continue to operate at similar level of service once the Stage 1 - redevelopment of the Hospital is completed. The improved driveway off Derby Street will provide an improved accessibility (particularly for service vehicles) to the Hospital Campus with minimal impact on operation of the road system. The access off Burdett Street will remain per existing situation.

Pedestrian desire lines have been identified and are included as part of the proposed plan for the campus which will form the basis for pedestrian links and facilities.

A Transport Management Strategy for the Hospital could be developed to promote active and public transport particularly among staff which would result in reduction of car use and car parking provision.

A construction traffic management plan will be prepared prior to the commencement of works at the Hospital.

APPENDIX P1

Traffic Data and Intersections Analyses

Count Number 7238 Ref : URAP Lat/Long : S33 42 05.0 / E151 06 41.7 UBD 133 M-16
 Street PALMERSTON ROAD, HORNSBY : Between EDGEWORTH DAVID AVENUE & LOWE ROAD (bidirectional) :
 Location Just north of Northcote Road, House No. 61, ELP MC9135 Carriageway

Start Date 06-JUN-11
 Start Time 1200
 Duration 7 DAYS
 Interval 1 HOUR

Weekly 50th Percentile Speed 34
 Weekly 85th Percentile Speed 44
 Five Day AADT 1953
 Seven Day AADT 1735

TOTAL COUNT MATRIX

	MON 13TH / 6TH	TUE 7TH	WED 8TH	THU 9TH	FRI 10TH	SAT 11TH	SUN 12TH	5 Day Total Average		7 Day Total Average	
Midnight - 1am	2	3	3	2	3	5	13	13	3	31	4
1am - 2am	2	4	0	4	2	8	6	12	2	26	4
2am - 3am	5	2	1	3	3	6	8	14	3	28	4
3am - 4am	7	4	3	3	5	5	2	22	4	29	4
4am - 5am	3	5	2	5	6	8	0	21	4	29	4
5am - 6am	26	13	44	16	38	7	8	137	27	152	22
6am - 7am	31	82	69	66	73	35	39	321	64	395	56
7am - 8am	48	151	169	169	150	38	28	687	137	753	108
8am - 9am	22	181	188	163	141	61	31	695	139	787	112
9am - 10am	43	171	130	126	110	90	45	580	116	715	102
10am - 11am	73	142	128	145	123	94	51	611	122	756	108
11am - Midday	127	139	146	137	107	109	80	656	131	845	121
Midday - 1pm	169	143	141	129	147	115	75	729	146	919	131
1pm - 2pm	179	149	166	161	151	145	105	806	161	1056	151
2pm - 3pm	135	135	137	129	132	149	85	668	134	902	129
3pm - 4pm	144	148	148	148	136	129	92	724	145	945	135
4pm - 5pm	175	163	191	203	162	102	94	894	179	1090	156
5pm - 6pm	138	123	124	157	127	70	58	669	134	797	114
6pm - 7pm	76	97	119	99	101	72	61	492	98	625	89
7pm - 8pm	65	76	64	95	54	42	33	354	71	429	61
8pm - 9pm	31	56	57	59	44	36	28	247	49	311	44
9pm - 10pm	53	38	43	52	46	29	22	232	46	283	40
10pm - 11pm	22	15	28	25	28	19	25	118	24	162	23
11pm - Midnight	7	6	15	12	23	11	4	63	13	78	11
Total	1583	2046	2116	2108	1912	1385	993	9765	1953	12143	1734

Count Number 7238

Lat/Long : S33 42 05.0 / E151 06 41.7

UBD 133 M-16

Street PALMERSTON ROAD, HORNSBY : Between EDGEWORTH DAVID AVENUE & LOWE ROAD (bidirectional)

Location Just north of Northcote Road, House No. 61, ELP MC9135

Start Date 06-JUN-11

Start Time 1200

Duration 7 DAYS

Interval 1 HOUR

Speed Limit 50

NORTH

SOUTH

COMBINED

Weekly 50th Percentile Speed

35

34

34

Weekly 85th Percentile Speed

45

41

44

Five Day AADT

1163

790

1953

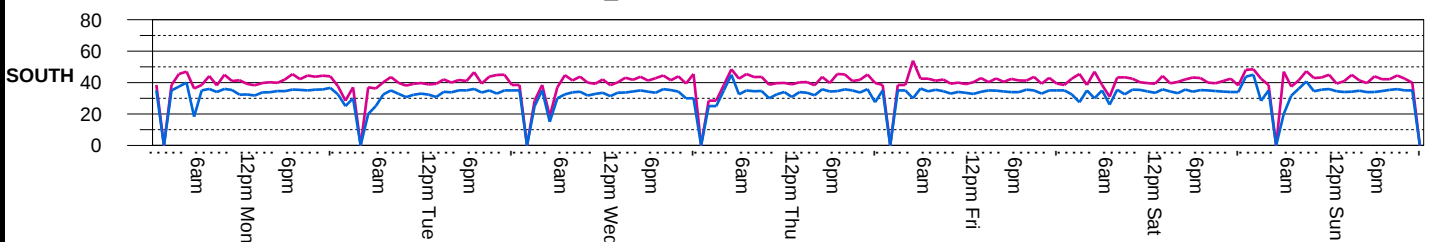
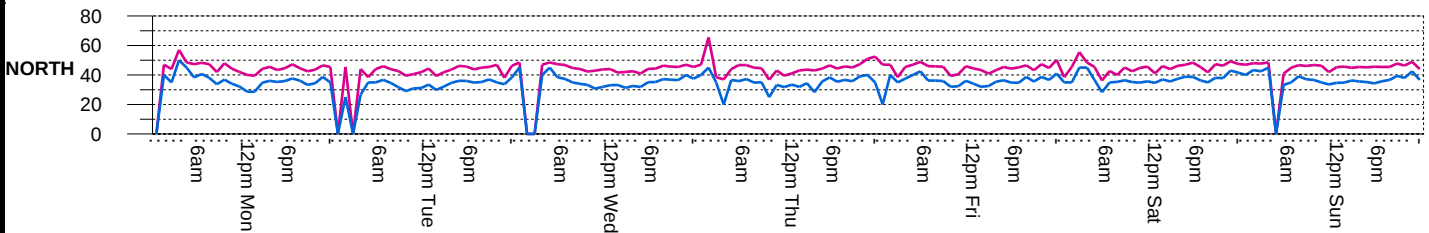
Seven Day AADT

1029

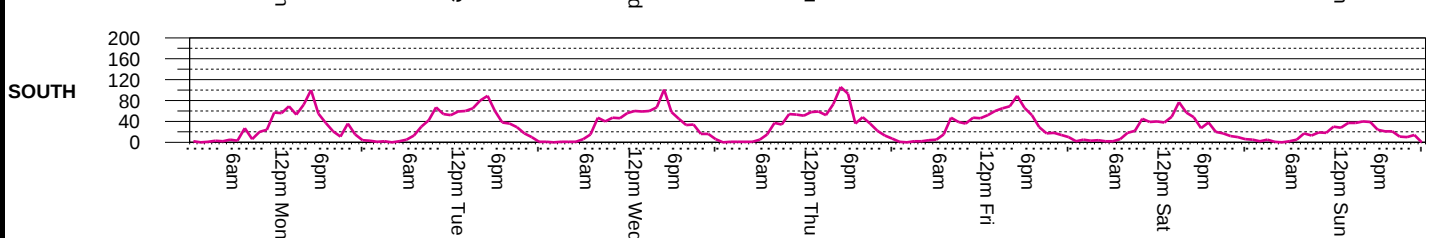
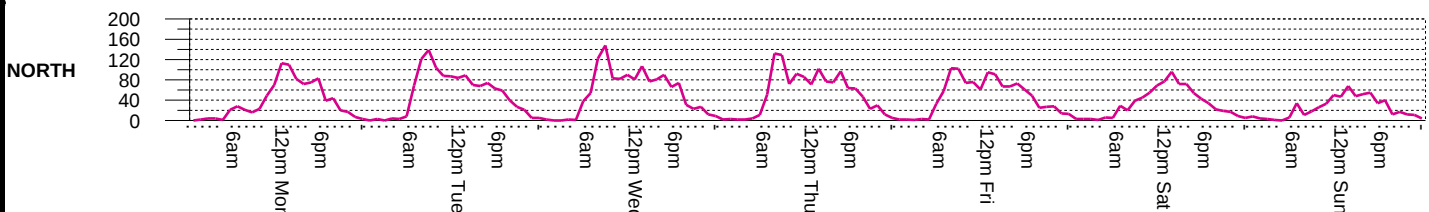
705

1735

	MON 06-JUN-11			TUE 07-JUN-11			WED 08-JUN-11			THU 09-JUN-11			FRI 10-JUN-11			SAT 11-JUN-11			SUN 12-JUN-11			SEVENDAY AVERAGE		
	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir
85%ile	44.4	41.0	43.3	43.6	40.3	42.6	44.2	41.8	43.4	44.2	41.3	43.3	45.0	41.1	43.8	45.4	41.0	44.1	45.7	43.2	44.9	44.7	41.4	43.6
50%ile	34.3	34.2	34.2	33.4	33.5	33.4	34.1	33.7	33.9	34.2	33.8	34.0	35.1	34.4	34.7	36.3	34.6	35.5	35.7	35.0	35.4	34.7	34.2	34.5
> 60 k	0	3	3	1	0	1	1	1	2	3	1	4	2	4	6	0	0	0	1	0	1	1.143	1.286	2.429
%age	0	4	2	1	0	0	1	1	1	2	1	2	2	5	3	0	0	0	2	0	1	1	2	1
> 70 k	0	2	2	1	0	1	0	1	1	2	1	3	0	1	1	0	0	0	0	0	0	4.286	7.143	1.143
%age	0	3	1	1	0	0	0	1	0	2	1	1	0	1	1	0	0	0	0	0	0	0	1	1



Short %	93.0	92.5	92.8	93.6	92.5	93.2	93.4	90.9	92.4	91.7	92.3	91.9	93.8	92.5	93.3	97.0	96.9	97.0	97.0	97.5	97.2	93.8	93.1	93.6
Med %	5.2	6.2	5.6	4.7	6.6	5.5	4.7	7.6	5.8	5.9	6.4	6.1	4.4	6.5	5.3	2.4	2.6	2.5	1.9	2.3	2.0	4.4	5.8	5.0
Long %	1.8	1.3	1.6	1.7	.9	1.4	1.9	1.5	1.7	2.4	1.3	1.9	1.8	1.0	1.5	.6	.5	.6	1.2	.3	.8	1.7	1.0	1.4
AM Pk Vo	70	57	127	139	67	181	148	56	188	132	54	169	103	47	150	69	45	109	50	30	80	102	51	143
PM Pk Vo	113	100	179	89	89	163	107	101	191	102	106	203	95	89	162	96	77	149	68	40	105	96	86	165
7-7pm 24Hr Tot	753	576	1329	1046	696	1742	1101	686	1787	1060	706	1766	919	668	1587	676	498	1174	482	323	805	862	593	1456
	904	679	1583	1231	815	2046	1300	816	2116	1252	856	2108	1127	785	1912	798	587	1385	594	399	993	1029	705	1735
Class 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 1	838	628	1466	1149	751	1900	1209	741	1950	1148	788	1936	1050	724	1774	770	567	1337	575	389	964	963	655	1618
Class 2	3	0	3	3	3	6	5	1	6	0	2	2	7	2	9	4	2	6	1	0	1	3	1	5
Class 3	38	33	71	48	46	94	53	60	113	53	46	99	42	47	89	17	10	27	11	8	19	37	36	73
Class 4	6	5	11	8	7	15	8	2	10	13	8	21	6	2	8	2	4	6	1	1	1	6	4	10
Class 5	3	4	7	2	1	3	0	0	0	8	1	2	2	2	4	0	1	1	0	0	0	2	1	3
Class 6	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
Class 7	0	2	2	2	1	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	1	2	2	2
Class 8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 9	0	1	1	1	1	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Class 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
Class 12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 13	16	6	22	18	5	23	21	12	33	23	10	33	17	8	25	4	3	7	5	1	6	15	6	21



Count Number 7237 Ref : URAP Lat/Long : S33 42 04.1 / E151 06 47.7 UBD 133 N-16
 Street LOWE ROAD, HORNSBY : Between PALMERSTON ROAD & KING ROAD (bidirectional) :
 Location Between Palmerston Road and Derby Road, ELP MC9166 Carriageway

Start Date 29-MAR-11
 Start Time 1400
 Duration 7 DAYS
 Interval 1 HOUR

Weekly 50th Percentile Speed 36
 Weekly 85th Percentile Speed 48
 Five Day AADT 1317
 Seven Day AADT 1154

TOTAL COUNT MATRIX

	MON 4TH	TUE 29TH / 5TH	WED 30TH	THU 31ST	FRI 1ST	SAT 2ND	SUN 3RD	5 Day Total Average		7 Day Total Average	
Midnight - 1am	2	3	2	3	2	4	7	12	2	23	3
1am - 2am	1	2	2	1	0	3	6	6	1	15	2
2am - 3am	1	1	1	1	4	9	0	8	2	17	2
3am - 4am	0	0	3	1	5	1	0	9	2	10	1
4am - 5am	5	2	5	3	3	4	0	18	4	22	3
5am - 6am	2	1	18	12	20	3	3	53	11	59	8
6am - 7am	24	15	46	46	52	14	5	183	37	202	29
7am - 8am	52	45	99	106	95	29	18	397	79	444	63
8am - 9am	109	114	113	100	104	48	18	540	108	606	87
9am - 10am	124	94	100	82	61	64	25	461	92	550	79
10am - 11am	82	89	90	101	75	62	28	437	87	527	75
11am - Midday	93	78	109	87	76	70	45	443	89	558	80
Midday - 1pm	89	106	77	76	63	68	61	411	82	540	77
1pm - 2pm	103	107	106	126	61	46	59	503	101	608	87
2pm - 3pm	90	98	106	96	72	80	54	462	92	596	85
3pm - 4pm	97	117	122	109	74	65	68	519	104	652	93
4pm - 5pm	104	122	124	120	132	44	62	602	120	708	101
5pm - 6pm	117	79	72	82	77	47	64	427	85	538	77
6pm - 7pm	94	76	67	66	67	33	67	370	74	470	67
7pm - 8pm	60	54	54	51	56	23	36	275	55	334	48
8pm - 9pm	37	42	38	34	29	28	31	180	36	239	34
9pm - 10pm	30	31	28	23	30	22	20	142	28	184	26
10pm - 11pm	23	18	12	14	11	10	17	78	16	105	15
11pm - Midnight	15	9	5	5	13	10	12	47	9	69	10
Total	1354	1303	1399	1345	1182	787	706	6583	1316	8076	1153

Count Number 7237

Lat/Long : S33 42 04.1 / E151 06 47.7

UBD 133 N-16

Street LOWE ROAD, HORNSBY : Between PALMERSTON ROAD & KING ROAD (bidirectional)

Location Between Palmerston Road and Derby Road, ELP MC9166

Start Date 29-MAR-11

Start Time 1400

Duration 7 DAYS

Interval 1 HOUR

Speed Limit 50

EAST

WEST

COMBINED

Weekly 50th Percentile Speed

37

35

36

Weekly 85th Percentile Speed

48

46

48

Five Day AADT

800

517

1317

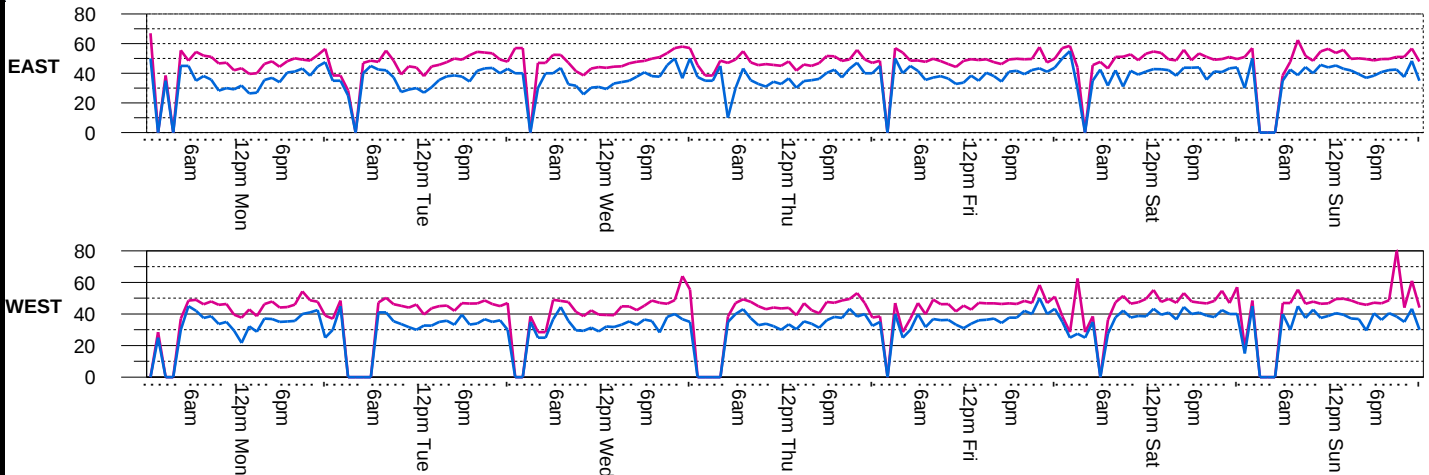
Seven Day AADT

698

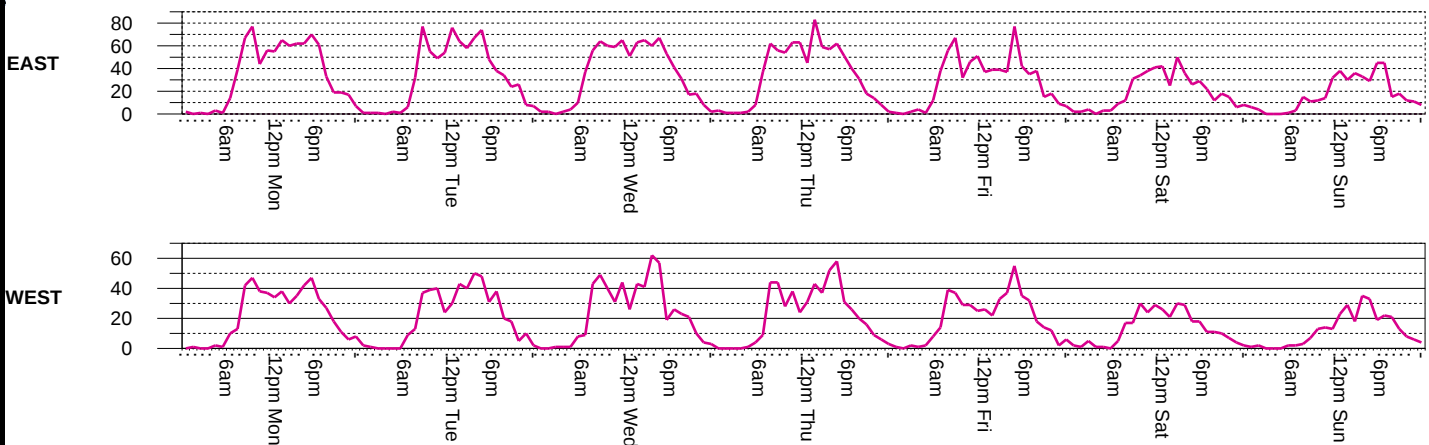
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1154

	MON 04-APR-11			TUE 29-MAR-11			WED 30-MAR-11			THU 31-MAR-11			FRI 01-APR-11			SAT 02-APR-11			SUN 03-APR-11			SEVENDAY AVERAGE		
	EAST	WEST	BiDir	EAST	WEST	BiDir	EAST	WEST	BiDir	EAST	WEST	BiDir	EAST	WEST	BiDir	EAST	WEST	BiDir	EAST	WEST	BiDir	EAST	WEST	BiDir
85%ile	47.3	45.6	46.7	47.7	45.5	46.9	47.2	44.5	46.2	47.5	45.6	46.8	48.5	46.9	47.9	51.3	48.8	49.8	52.4	47.9	49.7	48.9	46.4	47.7
50%ile	34.2	34.6	34.4	35.3	34.5	34.9	34.5	33.2	33.9	35.8	34.2	35.1	37.7	36.3	37.1	41.3	39.3	40.5	41.7	38.1	40.4	37.2	35.8	36.6
> 60 k	7	2	9	6	3	9	6	7	13	5	3	8	6	3	9	5	4	9	11	3	14	6.571	3.571	10.14
%age	.8	.4	.7	.7	.6	.7	.7	1.2	.9	.6	.6	.6	.9	.6	.8	1.1	1.3	1.1	2.6	1.0	2.0	1.1	.8	1.0
> 70 k	2	0	2	0	1	1	2	2	4	1	1	2	2	3	5	1	0	1	1	2	3	1.286	1.286	2.571
%age	.2	.0	.1	.0	.2	.1	.2	.4	.3	.1	.2	.1	.3	.6	.4	.2	.0	.1	.2	.7	.4	.2	.3	.2



Short %	91.4	92.3	91.7	92.9	92.2	92.6	90.1	89.1	89.7	92.8	92.7	92.8	92.5	93.7	93.0	91.7	92.5	92.0	96.9	95.5	96.3	92.3	92.3	92.3
Med %	4.6	4.0	4.4	4.0	3.4	3.8	5.1	7.5	6.1	3.5	3.6	3.6	4.3	4.2	4.2	3.2	2.5	2.9	1.4	1.4	1.4	4.0	4.1	4.0
Long %	4.1	3.7	3.9	3.1	4.4	3.6	4.8	3.4	4.2	3.7	3.6	3.6	3.3	2.1	2.8	5.1	5.0	5.1	1.7	3.1	2.3	3.7	3.6	3.7
AM Pk Vo	77	47	123	77	40	114	65	49	113	63	44	105	67	39	104	41	30	70	32	14	45	60	38	96
PM Pk Vo	70	47	117	76	50	122	67	62	124	83	58	126	77	55	132	50	30	80	45	35	68	67	48	110
7-7pm 24Hr Tot	718	436	1154	692	433	1125	704	481	1185	695	456	1151	558	399	957	386	270	656	340	229	569	585	386	971
	834	520	1354	803	500	1303	837	562	1399	821	524	1345	703	479	1182	468	319	787	418	288	706	698	456	1154
Class 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 1	761	478	1239	745	460	1205	753	500	1253	757	485	1242	647	448	1095	426	294	720	405	275	680	642	420	1062
Class 2	1	2	3	1	1	2	1	1	2	5	1	6	3	1	4	3	1	4	0	0	0	2	1	3
Class 3	33	13	46	24	14	38	34	27	61	19	14	33	24	15	39	12	4	16	6	2	8	22	13	34
Class 4	5	5	10	7	2	9	9	10	19	7	4	11	5	2	7	3	6	6	0	2	5	5	4	9
Class 5	0	3	3	1	1	2	0	5	3	1	4	1	1	3	4	0	1	1	0	0	0	1	2	3
Class 6	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
Class 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 8	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 13	33	19	52	25	21	46	38	19	57	29	19	48	22	9	31	24	16	40	7	9	16	25	16	41



Joray Enterprises Pty Ltd

ABN 80 061 513 933

Telephone and Fax (02) 9624 5472

1 Ajax Place Blacktown, NSW 2148

Count Number	JE12 -142	Client	U.R.& P	Count Date	Tuesday 26 June 2012
Location	EDGEWORTH DAVID AVE / PALMERSTON RD			Suburb	WAITARA
Weather	Showers			Job Number	

Comments

Vehicle Movements

Lights

	NORTH		EAST		WEST		
	Palmerston Rd		Edgeworth David		Edgeworth David		
Time Period	L	R	T	R	L	T	Total
15:00 - 15:15	50	0	209	39	12	213	523
15:15 - 15:30	42	0	250	57	5	165	519
15:30 - 15:45	44	0	259	57	7	188	555
15:45 - 16:00	34	0	233	48	7	189	511
16:00 - 16:15	55	0	251	64	9	259	638
16:15 - 16:30	55	0	274	51	8	199	587
16:30 - 16:45	47	0	250	55	7	236	595
16:45 - 17:00	55	0	237	71	7	221	591
17:00 - 17:15	54	0	248	67	8	215	592
17:15 - 17:30	37	0	203	60	3	206	509
17:30 - 17:45	39	0	211	77	6	203	536
17:45 - 18:00	37	0	235	60	8	186	526
Period Ending	549	0	2860	706	87	2480	6682

	NORTH		EAST		WEST		
	Palmerston Rd		Edgeworth David		Edgeworth David		
Time Period	L	R	T	R	L	T	Total
15:00 - 16:00	170	0	951	201	31	755	2108
15:15 - 16:15	175	0	993	226	28	801	2223
15:30 - 16:30	188	0	1017	220	31	835	2291
15:45 - 16:45	191	0	1008	218	31	883	2331
16:00 - 17:00	212	0	1012	241	31	915	2411
16:15 - 17:15	211	0	1009	244	30	871	2365
16:30 - 17:30	193	0	938	253	25	878	2287
16:45 - 17:45	185	0	899	275	24	845	2228
17:00 - 18:00	167	0	897	264	25	810	2163

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1 Ajax Place Blacktown, NSW 2148

Count Number JE12 -142

Client U.R.& P

Count Date Tuesday 26 June 2012

Location EDGEWORTH DAVID AVE / PALMERSTON RD

Suburb WAITARA

Weather Showers

Job Number

Comments

Heavy

	NORTH		EAST		WEST		
	Palmerston Rd		Edgeworth David		Edgeworth David		
Time Period	L	R	T	R	L	T	Total
15:00 - 15:15	1	0	4	1	0	5	11
15:15 - 15:30	1	0	3	0	1	5	10
15:30 - 15:45	1	0	7	1	1	2	12
15:45 - 16:00	0	0	11	0	0	2	13
16:00 - 16:15	0	0	9	0	0	2	11
16:15 - 16:30	1	0	0	0	0	1	2
16:30 - 16:45	1	0	2	0	0	2	5
16:45 - 17:00	0	0	3	0	0	0	3
17:00 - 17:15	0	0	1	0	0	1	2
17:15 - 17:30	0	0	2	0	0	3	5
17:30 - 17:45	0	0	2	0	0	0	2
17:45 - 18:00	0	0	5	0	0	1	6
Period Ending	5	0	49	2	2	24	82

	NORTH		EAST		WEST		
	Palmerston Rd		Edgeworth David		Edgeworth David		
Time Period	L	R	T	R	L	T	Total
15:00 - 16:00	3	0	25	2	2	14	46
15:15 - 16:15	2	0	30	1	2	11	46
15:30 - 16:30	2	0	27	1	1	7	38
15:45 - 16:45	2	0	22	0	0	7	31
16:00 - 17:00	2	0	14	0	0	5	21
16:15 - 17:15	2	0	6	0	0	4	12
16:30 - 17:30	1	0	8	0	0	6	15
16:45 - 17:45	0	0	8	0	0	4	12
17:00 - 18:00	0	0	10	0	0	5	15

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1 Ajax Place Blacktown, NSW 2148

Count Number	JE12 -142	Client	U.R.& P	Count Date	Tuesday 26 June 2012
Location	EDGEWORTH DAVID AVE / PALMERSTON RD			Suburb	WAITARA
Weather	Showers			Job Number	

Comments

Combined

	NORTH		EAST		WEST		
	Palmerston Rd		Edgeworth David		Edgeworth David		
Time Period	L	R	T	R	L	T	Total
15:00 - 15:15	51	0	213	40	12	218	534
15:15 - 15:30	43	0	253	57	6	170	529
15:30 - 15:45	45	0	266	58	8	190	567
15:45 - 16:00	34	0	244	48	7	191	524
16:00 - 16:15	55	0	260	64	9	261	649
16:15 - 16:30	56	0	274	51	8	200	589
16:30 - 16:45	48	0	252	55	7	238	600
16:45 - 17:00	55	0	240	71	7	221	594
17:00 - 17:15	54	0	249	67	8	216	594
17:15 - 17:30	37	0	205	60	3	209	514
17:30 - 17:45	39	0	213	77	6	203	538
17:45 - 18:00	37	0	240	60	8	187	532
Period Ending	554	0	2909	708	89	2504	6764

	NORTH		EAST		WEST		
	Palmerston Rd		Edgeworth David		Edgeworth David		
Time Period	L	R	T	R	L	T	Total
15:00 - 16:00	173	0	976	203	33	769	2154
15:15 - 16:15	177	0	1023	227	30	812	2269
15:30 - 16:30	190	0	1044	221	32	842	2329
15:45 - 16:45	193	0	1030	218	31	890	2362
16:00 - 17:00	214	0	1026	241	31	920	2432
16:15 - 17:15	213	0	1015	244	30	875	2377
16:30 - 17:30	194	0	946	253	25	884	2302
16:45 - 17:45	185	0	907	275	24	849	2240
17:00 - 18:00	167	0	907	264	25	815	2178

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Count Number	JE12 -142	Client	U.R.& P	Count Date	Tuesday 26 June 2012
Location	EDGEWORTH DAVID AVE / PALMERSTON RD			Suburb	WAITARA
Weather	Showers			Job Number	

Comments

Pedestrian Movements

All Pedestrians

	NORTH	EAST	WEST	
Time Period	Palmerston Rd	Edgeworth David	Edgeworth David	Total
15:00 - 15:15	45	0	0	45
15:15 - 15:30	120	0	0	120
15:30 - 15:45	9	0	0	9
15:45 - 16:00	2	0	0	2
16:00 - 16:15	4	0	0	4
16:15 - 16:30	2	0	0	2
16:30 - 16:45	7	0	0	7
16:45 - 17:00	0	0	0	0
17:00 - 17:15	6	0	0	6
17:15 - 17:30	2	0	0	2
17:30 - 17:45	4	0	0	4
17:45 - 18:00	5	0	0	5
Period Ending	206	0	0	206

	NORTH	EAST	WEST	
Time Period	Palmerston Rd	Edgeworth David	Edgeworth David	Total
15:00 - 16:00	176	0	0	176
15:15 - 16:15	135	0	0	135
15:30 - 16:30	17	0	0	17
15:45 - 16:45	15	0	0	15
16:00 - 17:00	13	0	0	13
16:15 - 17:15	15	0	0	15
16:30 - 17:30	15	0	0	15
16:45 - 17:45	12	0	0	12
17:00 - 18:00	17	0	0	17

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1 Ajax Place Blacktown, NSW 2148

Count Number	JE12 -142	Client	U.R.& P	Count Date	Tuesday 26 June 2012
Location	EDGEWORTH DAVID AVE / PALMERSTON RD			Suburb	WAITARA
Weather	Showers			Job Number	

Comments

Combined

	NORTH	EAST	WEST	
Time Period	Palmerston Rd	Edgeworth David	Edgeworth David	Total
15:00 - 15:15	45	0	0	45
15:15 - 15:30	120	0	0	120
15:30 - 15:45	9	0	0	9
15:45 - 16:00	2	0	0	2
16:00 - 16:15	4	0	0	4
16:15 - 16:30	2	0	0	2
16:30 - 16:45	7	0	0	7
16:45 - 17:00	0	0	0	0
17:00 - 17:15	6	0	0	6
17:15 - 17:30	2	0	0	2
17:30 - 17:45	4	0	0	4
17:45 - 18:00	5	0	0	5
Period Ending	206	0	0	206

	NORTH	EAST	WEST	
Time Period	Palmerston Rd	Edgeworth David	Edgeworth David	Total
15:00 - 16:00	176	0	0	176
15:15 - 16:15	135	0	0	135
15:30 - 16:30	17	0	0	17
15:45 - 16:45	15	0	0	15
16:00 - 17:00	13	0	0	13
16:15 - 17:15	15	0	0	15
16:30 - 17:30	15	0	0	15
16:45 - 17:45	12	0	0	12
17:00 - 18:00	17	0	0	17

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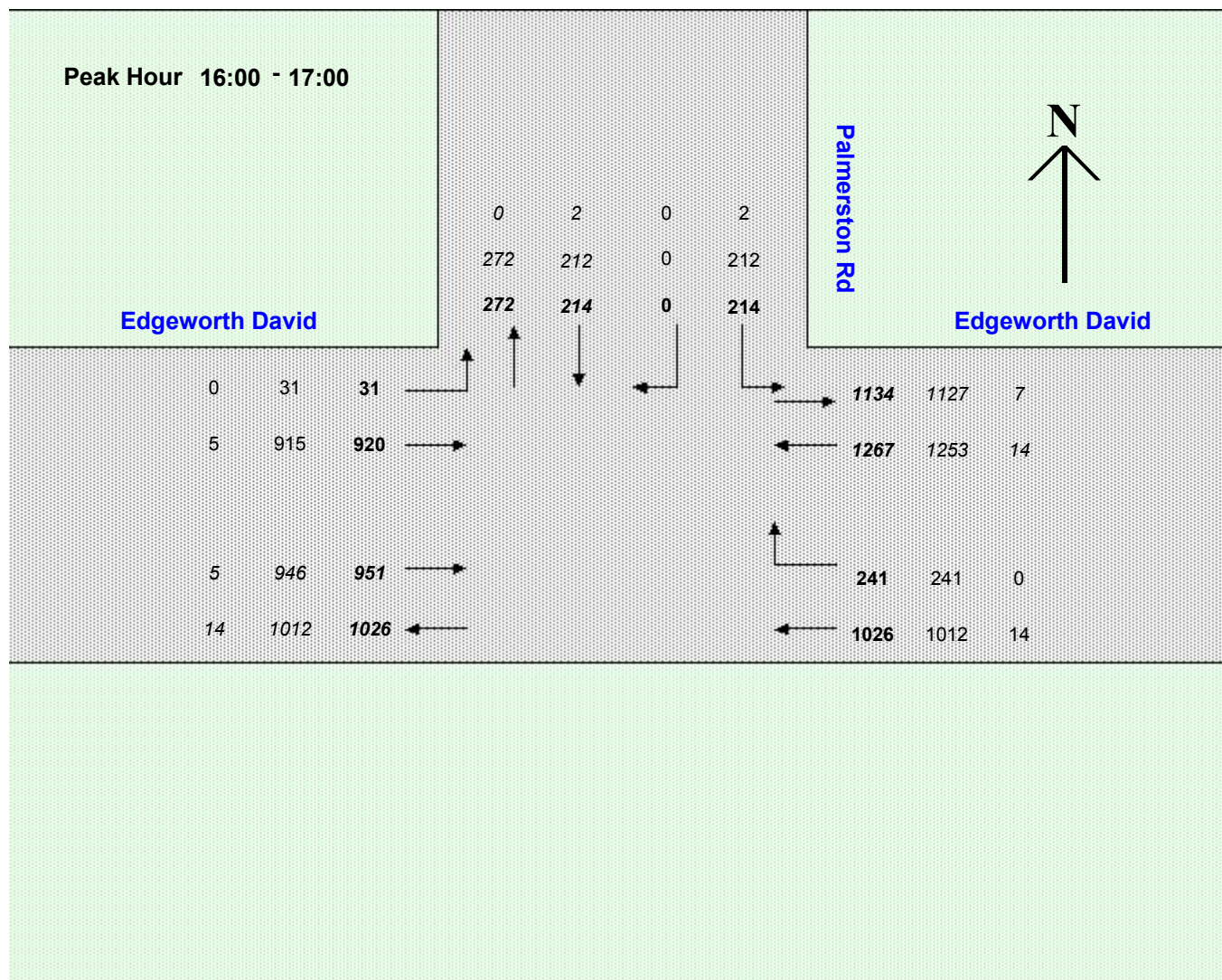
1 Ajax Place Blacktown, NSW 2148

Count Number JE12 -142	Client U.R.& P	Count Date Tuesday 26 June 2012
Location EDGEWORTH DAVID AVE / PALMERSTON RD	Suburb WAITARA	
Weather Showers	Job Number	

Comments

	Palmerston Rd		Edgeworth David		Edgeworth David		
VEHICLES	L	R	T	R	L	T	Total
Lights	212	0	1012	241	31	915	2411
Heavy	2	0	14	0	0	5	21
Total	214	0	1026	241	31	920	2432

PEDESTRIAN	Palmerston Rd	Edgeworth David	Edgeworth David	Total
All Pedestrians	13	0	0	13
Total	13	0	0	13



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Count Number	JE12 -142	Client	U.R.& P	Count Date	Tuesday 26 June 2012
Location	EDGEWORTH DAVID AVE / PALMERSTON RD			Suburb	WAITARA
Weather	Showers			Job Number	

Comments

Vehicle Movements

Lights

	NORTH		EAST		WEST		
	Palmerston Rd		Edgeworth David		Edgeworth David		
Time Period	L	R	T	R	L	T	Total
7:00 - 7:15	39	0	94	28	1	220	382
7:15 - 7:30	49	0	120	44	5	206	424
7:30 - 7:45	48	0	146	63	5	173	435
7:45 - 8:00	41	0	186	90	15	176	508
8:00 - 8:15	45	0	159	56	7	201	468
8:15 - 8:30	40	0	202	61	7	177	487
8:30 - 8:45	56	0	203	56	8	188	511
8:45 - 9:00	35	0	257	66	9	183	550
Period Ending	353	0	1367	464	57	1524	3765

	NORTH		EAST		WEST		
	Palmerston Rd		Edgeworth David		Edgeworth David		
Time Period	L	R	T	R	L	T	Total
7:00 - 8:00	177	0	546	225	26	775	1749
7:15 - 8:15	183	0	611	253	32	756	1835
7:30 - 8:30	174	0	693	270	34	727	1898
7:45 - 8:45	182	0	750	263	37	742	1974
8:00 - 9:00	176	0	821	239	31	749	2016

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1 Ajax Place Blacktown, NSW 2148

Count Number	JE12 -142	Client	U.R.& P	Count Date	Tuesday 26 June 2012
Location	EDGEWORTH DAVID AVE / PALMERSTON RD			Suburb	WAITARA
Weather	Showers			Job Number	

Comments

Heavy

	NORTH		EAST		WEST		
	Palmerston Rd		Edgeworth David		Edgeworth David		
Time Period	L	R	T	R	L	T	Total
7:00 - 7:15	2	0	1	0	1	11	15
7:15 - 7:30	2	0	3	2	0	6	13
7:30 - 7:45	1	0	0	1	0	4	6
7:45 - 8:00	0	0	6	1	2	3	12
8:00 - 8:15	0	0	1	0	2	2	5
8:15 - 8:30	2	0	8	0	0	3	13
8:30 - 8:45	0	0	4	0	0	7	11
8:45 - 9:00	0	0	4	0	0	3	7
Period Ending	7	0	27	4	5	39	82

	NORTH		EAST		WEST		
	Palmerston Rd		Edgeworth David		Edgeworth David		
Time Period	L	R	T	R	L	T	Total
7:00 - 8:00	5	0	10	4	3	24	46
7:15 - 8:15	3	0	10	4	4	15	36
7:30 - 8:30	3	0	15	2	4	12	36
7:45 - 8:45	2	0	19	1	4	15	41
8:00 - 9:00	2	0	17	0	2	15	36

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1 Ajax Place Blacktown, NSW 2148

Count Number	JE12 -142	Client	U.R.& P	Count Date	Tuesday 26 June 2012
Location	EDGEWORTH DAVID AVE / PALMERSTON RD			Suburb	WAITARA
Weather	Showers			Job Number	

Comments

Combined

	NORTH		EAST		WEST		
	Palmerston Rd		Edgeworth David		Edgeworth David		
Time Period	L	R	T	R	L	T	Total
7:00 - 7:15	41	0	95	28	2	231	397
7:15 - 7:30	51	0	123	46	5	212	437
7:30 - 7:45	49	0	146	64	5	177	441
7:45 - 8:00	41	0	192	91	17	179	520
8:00 - 8:15	45	0	160	56	9	203	473
8:15 - 8:30	42	0	210	61	7	180	500
8:30 - 8:45	56	0	207	56	8	195	522
8:45 - 9:00	35	0	261	66	9	186	557
Period Ending	360	0	1394	468	62	1563	3847

	NORTH		EAST		WEST		
	Palmerston Rd		Edgeworth David		Edgeworth David		
Time Period	L	R	T	R	L	T	Total
7:00 - 8:00	182	0	556	229	29	799	1795
7:15 - 8:15	186	0	621	257	36	771	1871
7:30 - 8:30	177	0	708	272	38	739	1934
7:45 - 8:45	184	0	769	264	41	757	2015
8:00 - 9:00	178	0	838	239	33	764	2052

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1 Ajax Place Blacktown, NSW 2148

Count Number	JE12 -142	Client	U.R.& P	Count Date	Tuesday 26 June 2012
Location	EDGEWORTH DAVID AVE / PALMERSTON RD			Suburb	WAITARA
Weather	Showers			Job Number	

Comments

Pedestrian Movements

All Pedestrians

	NORTH	EAST	WEST	
Time Period	Palmerston Rd	Edgeworth David	Edgeworth David	Total
7:00 - 7:15	1	0	0	1
7:15 - 7:30	2	0	0	2
7:30 - 7:45	0	0	0	0
7:45 - 8:00	5	0	0	5
8:00 - 8:15	2	0	0	2
8:15 - 8:30	4	0	0	4
8:30 - 8:45	4	0	0	4
8:45 - 9:00	20	0	0	20
Period Ending	38	0	0	38

	NORTH	EAST	WEST	
Time Period	Palmerston Rd	Edgeworth David	Edgeworth David	Total
7:00 - 8:00	8	0	0	8
7:15 - 8:15	9	0	0	9
7:30 - 8:30	11	0	0	11
7:45 - 8:45	15	0	0	15
8:00 - 9:00	30	0	0	30

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1 Ajax Place Blacktown, NSW 2148

Count Number	JE12 -142	Client	U.R.& P	Count Date	Tuesday 26 June 2012
Location	EDGEWORTH DAVID AVE / PALMERSTON RD			Suburb	WAITARA
Weather	Showers			Job Number	

Comments

Combined

	NORTH	EAST	WEST	
Time Period	Palmerston Rd	Edgeworth David	Edgeworth David	Total
7:00 - 7:15	1	0	0	1
7:15 - 7:30	2	0	0	2
7:30 - 7:45	0	0	0	0
7:45 - 8:00	5	0	0	5
8:00 - 8:15	2	0	0	2
8:15 - 8:30	4	0	0	4
8:30 - 8:45	4	0	0	4
8:45 - 9:00	20	0	0	20
Period Ending	38	0	0	38

	NORTH	EAST	WEST	
Time Period	Palmerston Rd	Edgeworth David	Edgeworth David	Total
7:00 - 8:00	8	0	0	8
7:15 - 8:15	9	0	0	9
7:30 - 8:30	11	0	0	11
7:45 - 8:45	15	0	0	15
8:00 - 9:00	30	0	0	30

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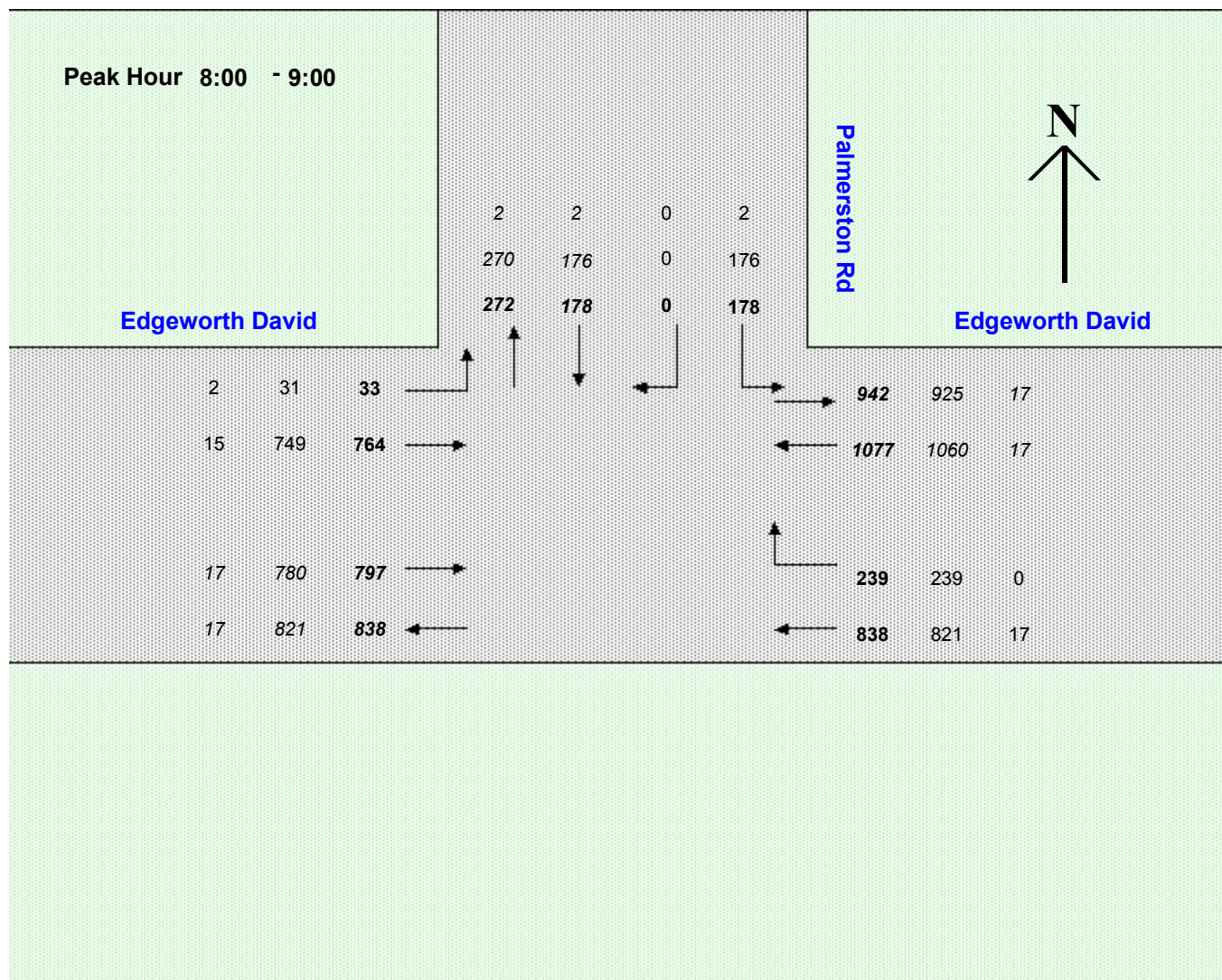
1 Ajax Place Blacktown, NSW 2148

Count Number JE12 -142	Client U.R. & P	Count Date Tuesday 26 June 2012
Location EDGEWORTH DAVID AVE / PALMERSTON RD	Suburb WAITARA	
Weather Showers	Job Number	

Comments

	Palmerston Rd		Edgeworth David		Edgeworth David		
VEHICLES	L	R	T	R	L	T	Total
Lights	176	0	821	239	31	749	2016
Heavy	2	0	17	0	2	15	36
Total	178	0	838	239	33	764	2052

PEDESTRIAN	Palmerston Rd	Edgeworth David	Edgeworth David	Total
All Pedestrians	30	0	0	30
Total	30	0	0	30



Joray Enterprises Pty Ltd

ABN 80 061 513 933

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1 Ajax Place Blacktown, NSW 2148

Count Number J11-115

Client U.R.A.P.

Count Date Wednesday 31 August 2011

Location DERBY RD / BURDETT ST / JUBILEE ST

Suburb HORNSBY

Weather Fine

Job Number

Comments

Vehicle Movements

All Vehicles

	NORTH			EAST			SOUTH			WEST			
	Derby Rd			Burdett St			Jubilee St			Burdett St			
Time Period	L	T	R	L	T	R	L	T	R	L	T	R	Total
7:00 - 7:15	1	3	3	11	8	0	13	3	2	6	4	35	89
7:15 - 7:30	1	6	5	9	8	0	8	8	0	7	1	56	109
7:30 - 7:45	1	4	1	11	9	1	11	7	2	4	5	49	105
7:45 - 8:00	3	6	7	8	12	0	9	15	2	11	1	37	111
8:00 - 8:15	3	11	9	5	6	0	26	15	0	9	3	54	141
8:15 - 8:30	2	10	9	13	8	0	28	12	3	5	6	53	149
8:30 - 8:45	0	4	8	10	9	0	24	9	2	9	11	31	117
8:45 - 9:00	1	8	3	7	17	0	31	12	3	4	5	44	135
Period Ending	12	52	45	74	77	1	150	81	14	55	36	359	956

	NORTH			EAST			SOUTH			WEST			
	Derby Rd			Burdett St			Jubilee St			Burdett St			
Time Period	L	T	R	L	T	R	L	T	R	L	T	R	Total
7:00 - 8:00	6	19	16	39	37	1	41	33	6	28	11	177	414
7:15 - 8:15	8	27	22	33	35	1	54	45	4	31	10	196	466
7:30 - 8:30	9	31	26	37	35	1	74	49	7	29	15	193	506
7:45 - 8:45	8	31	33	36	35	0	87	51	7	34	21	175	518
8:00 - 9:00	6	33	29	35	40	0	109	48	8	27	25	182	542

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1 Ajax Place Blacktown, NSW 2148

Count Number	J11-115	Client	U.R.A.P.	Count Date	Wednesday 31 August 2011
Location	DERBY RD / BURDETT ST / JUBILEE ST			Suburb	HORNSBY
Weather	Fine			Job Number	

Comments

Combined

Combined

	NORTH			EAST			SOUTH			WEST			
	Derby Rd			Burdett St			Jubilee St			Burdett St			
Time Period	L	T	R	L	T	R	L	T	R	L	T	R	Total
7:00 - 7:15	1	3	3	11	8	0	13	3	2	6	4	35	89
7:15 - 7:30	1	6	5	9	8	0	8	8	0	7	1	56	109
7:30 - 7:45	1	4	1	11	9	1	11	7	2	4	5	49	105
7:45 - 8:00	3	6	7	8	12	0	9	15	2	11	1	37	111
8:00 - 8:15	3	11	9	5	6	0	26	15	0	9	3	54	141
8:15 - 8:30	2	10	9	13	8	0	28	12	3	5	6	53	149
8:30 - 8:45	0	4	8	10	9	0	24	9	2	9	11	31	117
8:45 - 9:00	1	8	3	7	17	0	31	12	3	4	5	44	135
Period Ending	12	52	45	74	77	1	150	81	14	55	36	359	956

	NORTH			EAST			SOUTH			WEST			
	Derby Rd			Burdett St			Jubilee St			Burdett St			
Time Period	L	T	R	L	T	R	L	T	R	L	T	R	Total
7:00 - 8:00	6	19	16	39	37	1	41	33	6	28	11	177	414
7:15 - 8:15	8	27	22	33	35	1	54	45	4	31	10	196	466
7:30 - 8:30	9	31	26	37	35	1	74	49	7	29	15	193	506
7:45 - 8:45	8	31	33	36	35	0	87	51	7	34	21	175	518
8:00 - 9:00	6	33	29	35	40	0	109	48	8	27	25	182	542

Joray Enterprises Pty Ltd

ABN 80 061 513 933

Telephone and Fax : (02) 9624 5472

1 Ajax Place Blacktown, NSW 2148

Count Number J11-115	Client U.R.A.P.	Count Date Wednesday 31 August 2011
Location DERBY RD / BURDETT ST / JUBILEE ST	Suburb HORNSBY	
Weather Fine	Job Number	

Comments

Pedestrian Movements

All Pedestrians

	NORTH	EAST	SOUTH	WEST	
Time Period	Derby Rd	Burdett St	Jubilee St	Burdett St	Total
7:00 - 7:15	0	0	0	2	2
7:15 - 7:30	1	0	0	0	1
7:30 - 7:45	2	2	1	1	6
7:45 - 8:00	7	1	1	7	16
8:00 - 8:15	7	0	1	0	8
8:15 - 8:30	4	0	0	3	7
8:30 - 8:45	5	0	0	2	7
8:45 - 9:00	2	0	0	7	9
Period Ending	28	3	3	22	56

	NORTH	EAST	SOUTH	WEST	
Time Period	Derby Rd	Burdett St	Jubilee St	Burdett St	Total
7:00 - 8:00	10	3	2	10	25
7:15 - 8:15	17	3	3	8	31
7:30 - 8:30	20	3	3	11	37
7:45 - 8:45	23	1	2	12	38
8:00 - 9:00	18	0	1	12	31

Joray Enterprises Pty Ltd

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1 Ajax Place Blacktown, NSW 2148

Count Number J11-115

Client U.R.A.P.

Count Date Wednesday 31 August 2011

Location DERBY RD / BURDETT ST / JUBILEE ST

Suburb HORNSBY

Weather Fine

Job Number

Comments

Combined

	NORTH	EAST	SOUTH	WEST	
Time Period	Derby Rd	Burdett St	Jubilee St	Burdett St	Total
7:00 - 7:15	0	0	0	2	2
7:15 - 7:30	1	0	0	0	1
7:30 - 7:45	2	2	1	1	6
7:45 - 8:00	7	1	1	7	16
8:00 - 8:15	7	0	1	0	8
8:15 - 8:30	4	0	0	3	7
8:30 - 8:45	5	0	0	2	7
8:45 - 9:00	2	0	0	7	9
Period Ending	28	3	22	22	56

	NORTH	EAST	WEST	WEST	
Time Period	Derby Rd	Burdett St	Burdett St	Burdett St	Total
7:00 - 8:00	10	3	10	10	23
7:15 - 8:15	17	3	8	8	28
7:30 - 8:30	20	3	11	11	34
7:45 - 8:45	23	1	12	12	36
8:00 - 9:00	18	0	12	12	30

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Count Number J11-115

Client U.R.A.P.

Count Date Wednesday 31 August 2011

Location DERBY RD / BURDETT ST / JUBILEE ST

Suburb HORNSBY

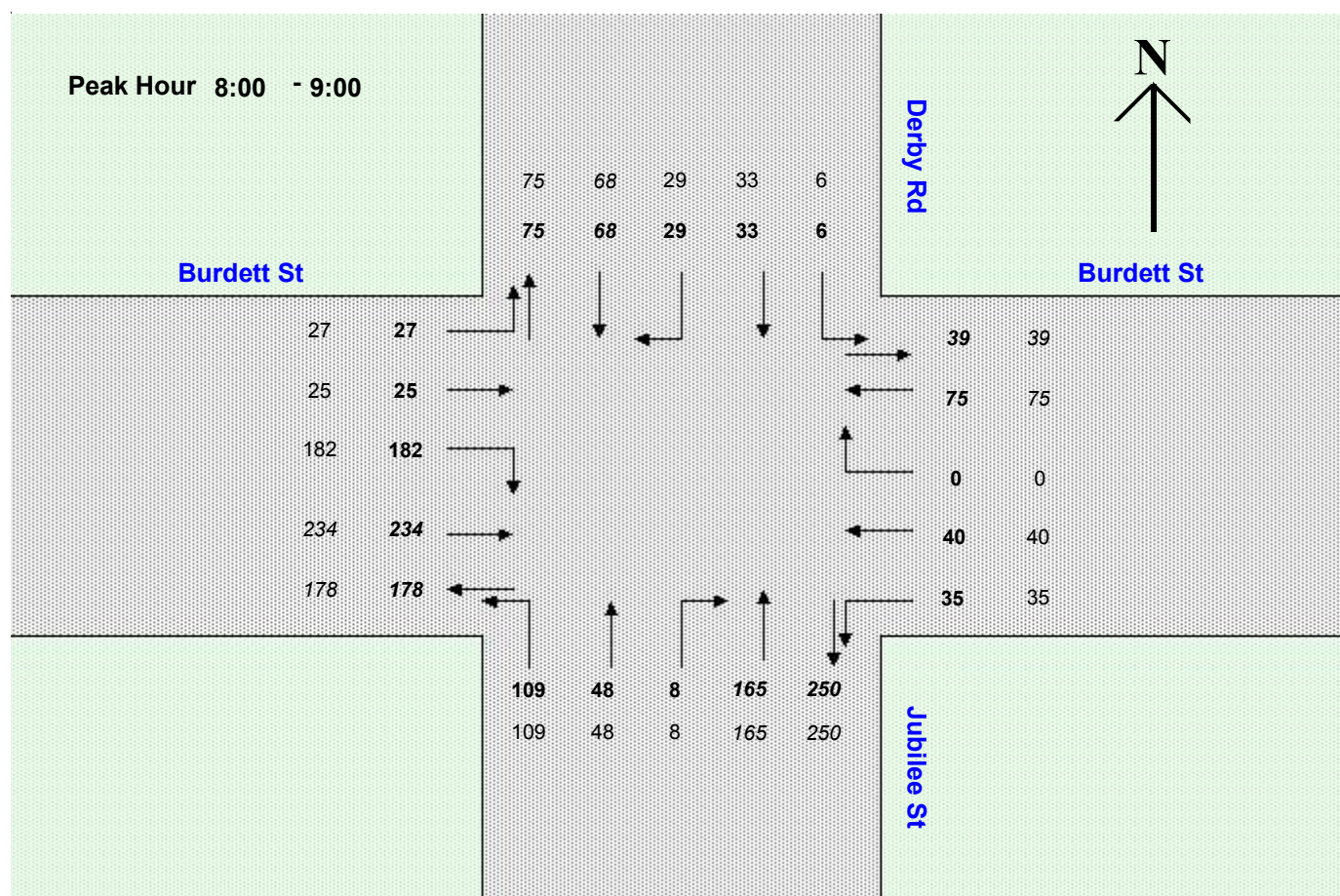
Weather Fine

Job Number

Comments

	Derby Rd			Burdett St			Jubilee St			Burdett St			
Vehicle Class	L	T	R	L	T	R	L	T	R	L	T	R	Total
All Vehicles	6	33	29	35	40	0	109	48	8	27	25	182	542
Total	6	33	29	35	40	0	109	48	8	27	25	182	542

PEDESTRIAN	Derby Rd	Burdett St	Jubilee St	Burdett St	
All Pedestrians	18	0	1	12	31
Total	18	0	1	12	31



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Count Number J11-114

Client U.R.A.P.

Count Date Wednesday 31 August 2011

Location PALMERSTON RD / BURDETT ST

Suburb HORNSBY

Weather Fine

Job Number

Comments

Vehicle Movements

All Vehicles

	NORTH			EAST			SOUTH			WEST			
	Palmerston Rd			Burdett St			Palmerston Rd			Burdett St			
	L	T	R	L	T	R	L	T	R	L	T	R	
15:00 - 15:15	0	0	0	9	33	6	21	25	9	9	32	39	183
15:15 - 15:30	0	0	0	8	46	13	29	35	8	14	33	27	213
15:30 - 15:45	0	0	0	15	33	17	18	66	14	8	31	22	224
15:45 - 16:00	0	0	0	10	27	17	22	26	7	14	32	18	173
16:00 - 16:15	0	0	0	10	30	14	21	32	10	15	47	39	218
16:15 - 16:30	0	0	0	9	35	16	12	38	6	6	31	36	189
16:30 - 16:45	0	0	0	21	55	18	16	29	5	20	47	30	241
16:45 - 17:00	0	0	0	4	38	12	14	33	5	11	35	33	185
17:00 - 17:15	0	0	0	5	23	11	26	37	4	13	66	48	233
17:15 - 17:30	0	0	0	8	22	9	20	43	2	7	28	24	163
17:30 - 17:45	0	0	0	8	21	15	24	50	5	4	34	17	178
17:45 - 18:00	0	0	0	8	32	12	19	56	5	7	33	18	190
Period Ending	0	0	0	115	395	160	242	470	80	128	449	351	2390

	NORTH			EAST			SOUTH			WEST			
	Palmerston Rd			Burdett St			Palmerston Rd			Burdett St			
	L	T	R	L	T	R	L	T	R	L	T	R	
Time Period	L	T	R	L	T	R	L	T	R	L	T	R	Total
15:00 - 16:00	0	0	0	42	139	53	90	152	38	45	128	106	793
15:15 - 16:15	0	0	0	43	136	61	90	159	39	51	143	106	828
15:30 - 16:30	0	0	0	44	125	64	73	162	37	43	141	115	804
15:45 - 16:45	0	0	0	50	147	65	71	125	28	55	157	123	821
16:00 - 17:00	0	0	0	44	158	60	63	132	26	52	160	138	833
16:15 - 17:15	0	0	0	39	151	57	68	137	20	50	179	147	848
16:30 - 17:30	0	0	0	38	138	50	76	142	16	51	176	135	822
16:45 - 17:45	0	0	0	25	104	47	84	163	16	35	163	122	759
17:00 - 18:00	0	0	0	29	98	47	89	186	16	31	161	107	764

Joray Enterprises Pty Ltd

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Count Number	J11-114	Client	U.R.A.P.	Count Date	Wednesday 31 August 2011
Location	PALMERSTON RD / BURDETT ST			Suburb	HORNSBY
Weather	Fine			Job Number	

Comments

Combined

Combined

	NORTH			EAST			SOUTH			WEST			
	Palmerston Rd			Burdett St			Palmerston Rd			Burdett St			
Time Period	L	T	R	L	T	R	L	T	R	L	T	R	Total
15:00 - 15:15	0	0	0	9	33	6	21	25	9	9	32	39	183
15:15 - 15:30	0	0	0	8	46	13	29	35	8	14	33	27	213
15:30 - 15:45	0	0	0	15	33	17	18	66	14	8	31	22	224
15:45 - 16:00	0	0	0	10	27	17	22	26	7	14	32	18	173
16:00 - 16:15	0	0	0	10	30	14	21	32	10	15	47	39	218
16:15 - 16:30	0	0	0	9	35	16	12	38	6	6	31	36	189
16:30 - 16:45	0	0	0	21	55	18	16	29	5	20	47	30	241
16:45 - 17:00	0	0	0	4	38	12	14	33	5	11	35	33	185
17:00 - 17:15	0	0	0	5	23	11	26	37	4	13	66	48	233
17:15 - 17:30	0	0	0	8	22	9	20	43	2	7	28	24	163
17:30 - 17:45	0	0	0	8	21	15	24	50	5	4	34	17	178
17:45 - 18:00	0	0	0	8	32	12	19	56	5	7	33	18	190
Period Ending	0	0	0	115	395	160	242	470	80	128	449	351	2390

	NORTH			EAST			SOUTH			WEST			
	Palmerston Rd			Burdett St			Palmerston Rd			Burdett St			
Time Period	L	T	R	L	T	R	L	T	R	L	T	R	Total
15:00 - 16:00	0	0	0	42	139	53	90	152	38	45	128	106	793
15:15 - 16:15	0	0	0	43	136	61	90	159	39	51	143	106	828
15:30 - 16:30	0	0	0	44	125	64	73	162	37	43	141	115	804
15:45 - 16:45	0	0	0	50	147	65	71	125	28	55	157	123	821
16:00 - 17:00	0	0	0	44	158	60	63	132	26	52	160	138	833
16:15 - 17:15	0	0	0	39	151	57	68	137	20	50	179	147	848
16:30 - 17:30	0	0	0	38	138	50	76	142	16	51	176	135	822
16:45 - 17:45	0	0	0	25	104	47	84	163	16	35	163	122	759
17:00 - 18:00	0	0	0	29	98	47	89	186	16	31	161	107	764

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Count Number J11-114 **Client** U.R.A.P.
Location PALMERSTON RD / BURDETT ST
Weather Fine

Count Date Wednesday 31 August 2011
Suburb HORNSBY
Job Number

Comments

Pedestrian Movements

All Pedestrians

	NORTH	EAST	SOUTH	WEST	
Time Period	Palmerston Rd	Burdett St	Palmerston Rd	Burdett St	Total
15:00 - 15:15	3	14	0	3	20
15:15 - 15:30	6	28	0	5	39
15:30 - 15:45	6	19	0	9	34
15:45 - 16:00	1	9	0	2	12
16:00 - 16:15	3	10	0	7	20
16:15 - 16:30	4	1	0	4	9
16:30 - 16:45	5	1	0	2	8
16:45 - 17:00	3	3	0	1	7
17:00 - 17:15	3	2	0	1	6
17:15 - 17:30	2	0	0	4	6
17:30 - 17:45	0	1	0	0	1
17:45 - 18:00	2	1	0	0	3
Period Ending	38	89	0	38	165

	NORTH	EAST	SOUTH	WEST	
Time Period	Palmerston Rd	Burdett St	Palmerston Rd	Burdett St	Total
15:00 - 16:00	16	70	0	19	105
15:15 - 16:15	16	66	0	23	105
15:30 - 16:30	14	39	0	22	75
15:45 - 16:45	13	21	0	15	49
16:00 - 17:00	15	15	0	14	44
16:15 - 17:15	15	7	0	8	30
16:30 - 17:30	13	6	0	8	27
16:45 - 17:45	8	6	0	6	20
17:00 - 18:00	7	4	0	5	16

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Count Number J11-114

Client U.R.A.P.

Count Date Wednesday 31 August 2011

Location PALMERSTON RD / BURDETT ST

Suburb HORNSBY

Weather Fine

Job Number

Comments

Combined

	NORTH	EAST	SOUTH	WEST	
Time Period	Palmerston Rd	Burdett St	Palmerston Rd	Burdett St	Total
15:00 - 15:15	3	14	0	3	20
15:15 - 15:30	6	28	0	5	39
15:30 - 15:45	6	19	0	9	34
15:45 - 16:00	1	9	0	2	12
16:00 - 16:15	3	10	0	7	20
16:15 - 16:30	4	1	0	4	9
16:30 - 16:45	5	1	0	2	8
16:45 - 17:00	3	3	0	1	7
17:00 - 17:15	3	2	0	1	6
17:15 - 17:30	2	0	0	4	6
17:30 - 17:45	0	1	0	0	1
17:45 - 18:00	2	1	0	0	3
Period Ending	38	89	38	38	165

	NORTH	EAST	WEST	WEST	
Time Period	Palmerston Rd	Burdett St	Burdett St	Burdett St	Total
15:00 - 16:00	16	70	19	19	105
15:15 - 16:15	16	66	23	23	105
15:30 - 16:30	14	39	22	22	75
15:45 - 16:45	13	21	15	15	49
16:00 - 17:00	15	15	14	14	44
16:15 - 17:15	15	7	8	8	30
16:30 - 17:30	13	6	8	8	27
16:45 - 17:45	8	6	6	6	20
17:00 - 18:00	7	4	5	5	16

Joray Enterprises Pty Ltd

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1 Ajax Place Blacktown, NSW 2148

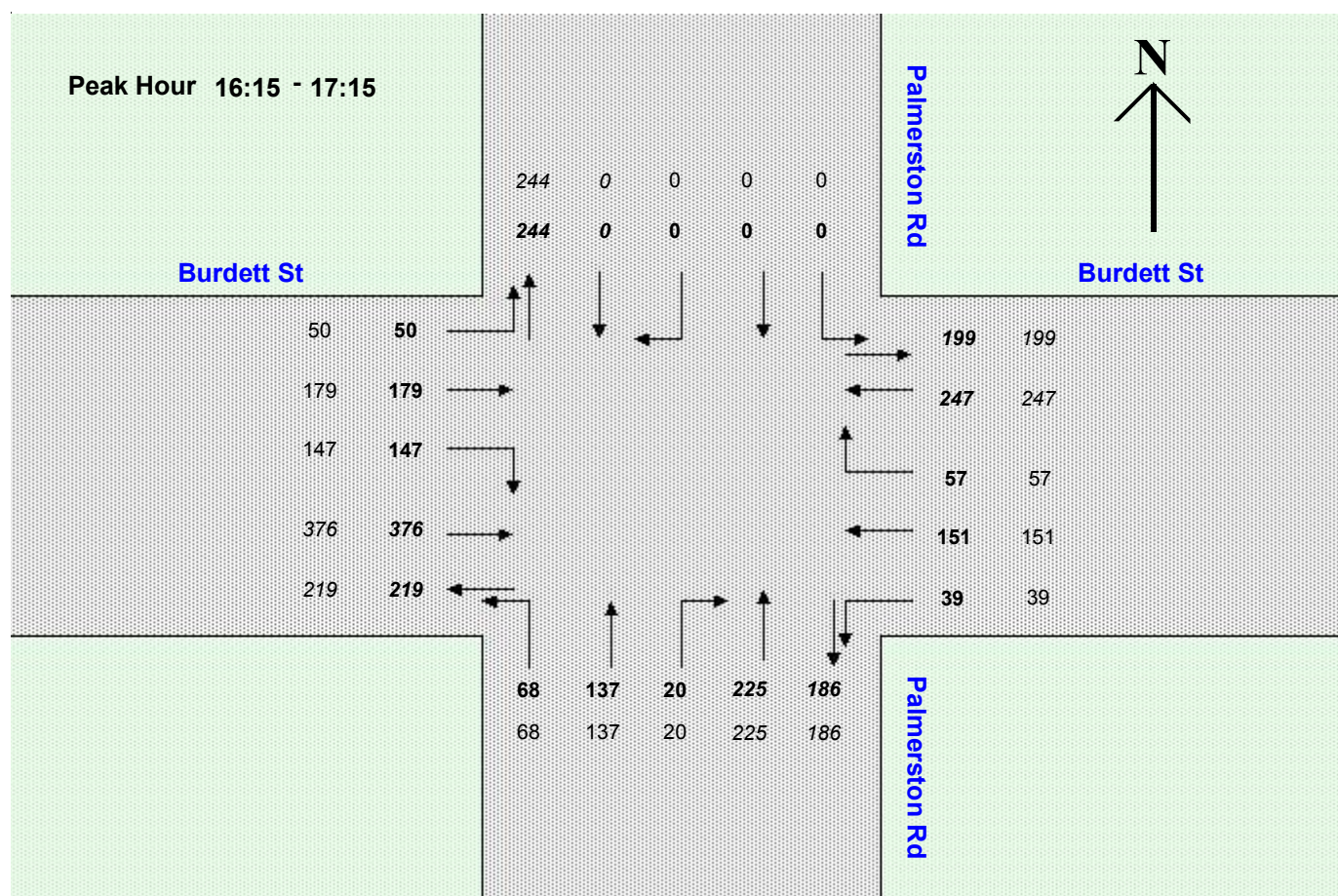
Count Number J11-114 Client U.R.A.P.
Location PALMERSTON RD / BURDETT ST
Weather Fine

Count Date Wednesday 31 August 2011
Suburb HORNSBY
Job Number

Comments

	Palmerston Rd			Burdett St			Palmerston Rd			Burdett St			
Vehicle Class	L	T	R	L	T	R	L	T	R	L	T	R	Total
All Vehicles	0	0	0	39	151	57	68	137	20	50	179	147	848
Total	0	0	0	39	151	57	68	137	20	50	179	147	848

PEDESTRIAN	Palmerston Rd	Burdett St	Palmerston Rd	Burdett St	
All Pedestrians	15	7	0	8	30
Total	15	7	0	8	30



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Count Number J11-115	Client U.R.A.P.	Count Date Wednesday 31 August 2011
Location DERBY RD / BURDETT ST / JUBILEE ST	Suburb HORNSBY	
Weather Fine	Job Number	

Comments

Vehicle Movements

All Vehicles

	NORTH			EAST			SOUTH			WEST			
	Derby Rd			Burdett St			Jubilee St			Burdett St			
Time Period	L	T	R	L	T	R	L	T	R	L	T	R	Total
15:00 - 15:15	0	15	10	6	11	0	29	2	8	5	7	34	127
15:15 - 15:30	0	8	14	0	3	0	40	8	8	6	3	22	112
15:30 - 15:45	0	9	18	4	5	0	34	7	4	5	5	26	117
15:45 - 16:00	0	5	7	7	6	0	24	6	7	6	5	27	100
16:00 - 16:15	0	6	6	3	9	0	36	3	6	3	13	37	122
16:15 - 16:30	0	4	13	4	5	0	37	6	7	2	3	18	99
16:30 - 16:45	0	12	13	2	10	0	41	0	9	4	11	36	138
16:45 - 17:00	0	14	8	1	10	1	30	8	3	0	5	38	118
17:00 - 17:15	0	19	9	4	4	2	19	4	8	2	8	38	117
17:15 - 17:30	1	10	6	3	6	0	26	6	9	6	5	19	97
17:30 - 17:45	0	3	2	3	12	0	30	4	8	4	6	30	102
17:45 - 18:00	0	4	3	1	11	0	25	7	5	3	6	23	88
Period Ending	1	109	109	38	92	3	371	61	82	46	77	348	1337

	NORTH			EAST			SOUTH			WEST			
	Derby Rd			Burdett St			Jubilee St			Burdett St			
Time Period	L	T	R	L	T	R	L	T	R	L	T	R	Total
15:00 - 16:00	0	37	49	17	25	0	127	23	27	22	20	109	456
15:15 - 16:15	0	28	45	14	23	0	134	24	25	20	26	112	451
15:30 - 16:30	0	24	44	18	25	0	131	22	24	16	26	108	438
15:45 - 16:45	0	27	39	16	30	0	138	15	29	15	32	118	459
16:00 - 17:00	0	36	40	10	34	1	144	17	25	9	32	129	477
16:15 - 17:15	0	49	43	11	29	3	127	18	27	8	27	130	472
16:30 - 17:30	1	55	36	10	30	3	116	18	29	12	29	131	470
16:45 - 17:45	1	46	25	11	32	3	105	22	28	12	24	125	434
17:00 - 18:00	1	36	20	11	33	2	100	21	30	15	25	110	404

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Count Number J11-115	Client U.R.A.P.	Count Date Wednesday 31 August 2011
Location DERBY RD / BURDETT ST / JUBILEE ST	Suburb HORNSBY	
Weather Fine	Job Number	

Comments

Combined

	NORTH			EAST			SOUTH			WEST			
	Derby Rd			Burdett St			Jubilee St			Burdett St			
Time Period	L	T	R	L	T	R	L	T	R	L	T	R	Total
15:00 - 15:15	0	15	10	6	11	0	29	2	8	5	7	34	127
15:15 - 15:30	0	8	14	0	3	0	40	8	8	6	3	22	112
15:30 - 15:45	0	9	18	4	5	0	34	7	4	5	5	26	117
15:45 - 16:00	0	5	7	7	6	0	24	6	7	6	5	27	100
16:00 - 16:15	0	6	6	3	9	0	36	3	6	3	13	37	122
16:15 - 16:30	0	4	13	4	5	0	37	6	7	2	3	18	99
16:30 - 16:45	0	12	13	2	10	0	41	0	9	4	11	36	138
16:45 - 17:00	0	14	8	1	10	1	30	8	3	0	5	38	118
17:00 - 17:15	0	19	9	4	4	2	19	4	8	2	8	38	117
17:15 - 17:30	1	10	6	3	6	0	26	6	9	6	5	19	97
17:30 - 17:45	0	3	2	3	12	0	30	4	8	4	6	30	102
17:45 - 18:00	0	4	3	1	11	0	25	7	5	3	6	23	88
Period Ending	1	109	109	38	92	3	371	61	82	46	77	348	1337

	NORTH			EAST			SOUTH			WEST			
	Derby Rd			Burdett St			Jubilee St			Burdett St			
Time Period	L	T	R	L	T	R	L	T	R	L	T	R	Total
15:00 - 16:00	0	37	49	17	25	0	127	23	27	22	20	109	456
15:15 - 16:15	0	28	45	14	23	0	134	24	25	20	26	112	451
15:30 - 16:30	0	24	44	18	25	0	131	22	24	16	26	108	438
15:45 - 16:45	0	27	39	16	30	0	138	15	29	15	32	118	459
16:00 - 17:00	0	36	40	10	34	1	144	17	25	9	32	129	477
16:15 - 17:15	0	49	43	11	29	3	127	18	27	8	27	130	472
16:30 - 17:30	1	55	36	10	30	3	116	18	29	12	29	131	470
16:45 - 17:45	1	46	25	11	32	3	105	22	28	12	24	125	434
17:00 - 18:00	1	36	20	11	33	2	100	21	30	15	25	110	404

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Count Number J11-115

Client U.R.A.P.

Count Date Wednesday 31 August 2011

Location DERBY RD / BURDETT ST / JUBILEE ST

Suburb HORNSBY

Weather Fine

Job Number

Comments

Pedestrian Movements

All Pedestrians

	NORTH	EAST	SOUTH	WEST	
Time Period	Derby Rd	Burdett St	Jubilee St	Burdett St	Total
15:00 - 15:15	5	0	1	2	8
15:15 - 15:30	3	0	0	2	5
15:30 - 15:45	1	0	0	2	3
15:45 - 16:00	0	0	0	2	2
16:00 - 16:15	2	0	0	3	5
16:15 - 16:30	3	0	0	5	8
16:30 - 16:45	0	1	1	4	6
16:45 - 17:00	6	1	0	4	11
17:00 - 17:15	5	1	1	3	10
17:15 - 17:30	3	0	0	3	6
17:30 - 17:45	1	0	0	0	1
17:45 - 18:00	0	1	0	3	4
Period Ending	29	4	3	33	69

	NORTH	EAST	SOUTH	WEST	
Time Period	Derby Rd	Burdett St	Jubilee St	Burdett St	Total
15:00 - 16:00	9	0	1	8	18
15:15 - 16:15	6	0	0	9	15
15:30 - 16:30	6	0	0	12	18
15:45 - 16:45	5	1	1	14	21
16:00 - 17:00	11	2	1	16	30
16:15 - 17:15	14	3	2	16	35
16:30 - 17:30	14	3	2	14	33
16:45 - 17:45	15	2	1	10	28
17:00 - 18:00	9	2	1	9	21

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Count Number J11-115

Client U.R.A.P.

Count Date Wednesday 31 August 2011

Location DERBY RD / BURDETT ST / JUBILEE ST

Suburb HORNSBY

Weather Fine

Job Number

Comments

Combined

	NORTH	EAST	SOUTH	WEST	
Time Period	Derby Rd	Burdett St	Jubilee St	Burdett St	Total
15:00 - 15:15	5	0	1	2	8
15:15 - 15:30	3	0	0	2	5
15:30 - 15:45	1	0	0	2	3
15:45 - 16:00	0	0	0	2	2
16:00 - 16:15	2	0	0	3	5
16:15 - 16:30	3	0	0	5	8
16:30 - 16:45	0	1	1	4	6
16:45 - 17:00	6	1	0	4	11
17:00 - 17:15	5	1	1	3	10
17:15 - 17:30	3	0	0	3	6
17:30 - 17:45	1	0	0	0	1
17:45 - 18:00	0	1	0	3	4
Period Ending	29	4	33	33	69

	NORTH	EAST	WEST	WEST	
Time Period	Derby Rd	Burdett St	Burdett St	Burdett St	Total
15:00 - 16:00	9	0	8	8	17
15:15 - 16:15	6	0	9	9	15
15:30 - 16:30	6	0	12	12	18
15:45 - 16:45	5	1	14	14	20
16:00 - 17:00	11	2	16	16	29
16:15 - 17:15	14	3	16	16	33
16:30 - 17:30	14	3	14	14	31
16:45 - 17:45	15	2	10	10	27
17:00 - 18:00	9	2	9	9	20

Joray Enterprises Pty Ltd

ABN 80 061 513 933

Telephone and Fax : (02) 9624 5472

1 Ajax Place Blacktown, NSW 2148

Count Number J11-115

Client U.R.A.P.

Count Date Wednesday 31 August 2011

Location DERBY RD / BURDETT ST / JUBILEE ST

Suburb HORNSBY

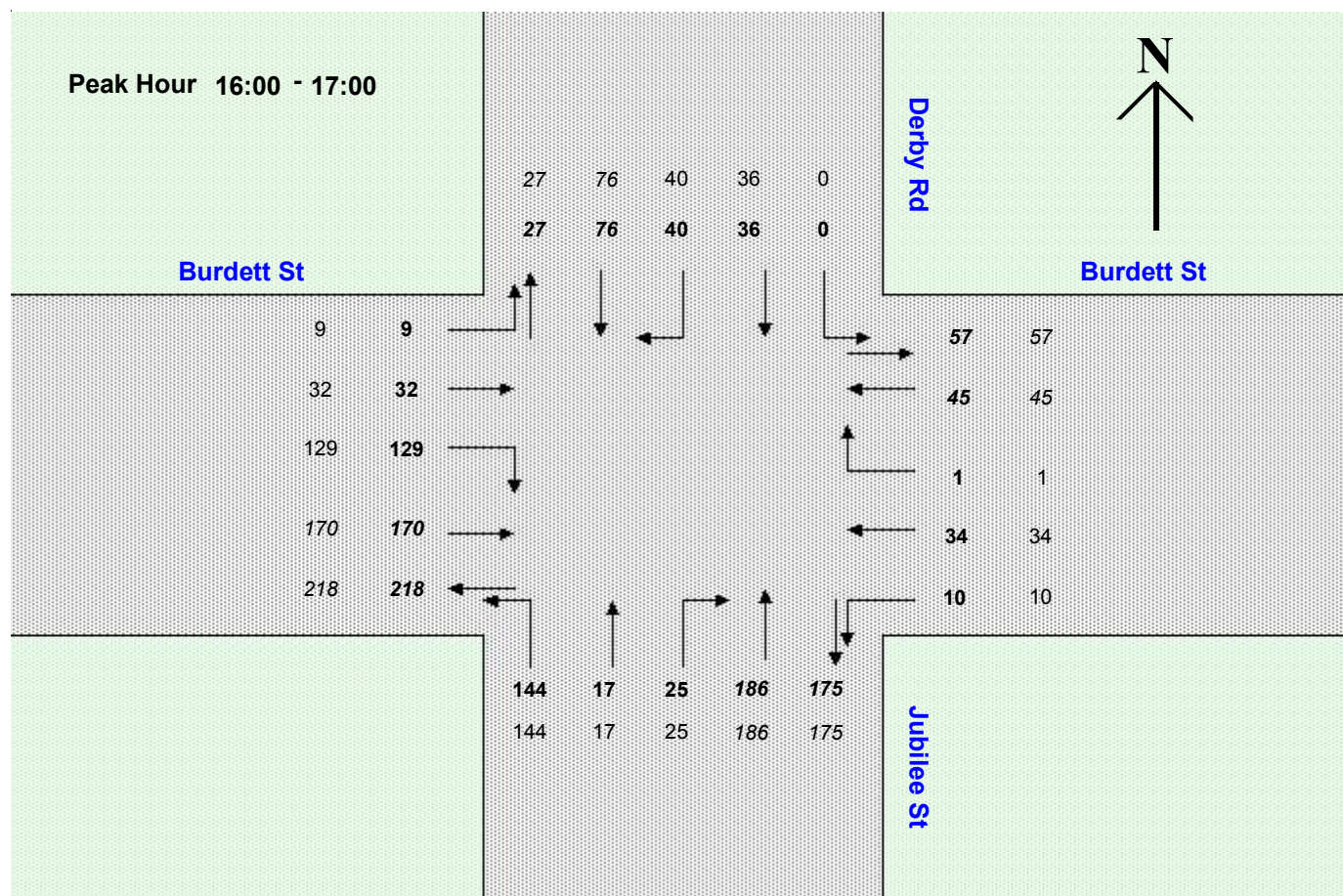
Weather Fine

Job Number

Comments

	Derby Rd			Burdett St			Jubilee St			Burdett St			
Vehicle Class	L	T	R	L	T	R	L	T	R	L	T	R	Total
All Vehicles	0	36	40	10	34	1	144	17	25	9	32	129	477
Total	0	36	40	10	34	1	144	17	25	9	32	129	477

PEDESTRIAN	Derby Rd	Burdett St	Jubilee St	Burdett St	
All Pedestrians	11	2	1	16	30
Total	11	2	1	16	30



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Suburb HORNSBY

Weather Fine

Job Number

Comments

Vehicle Movements

All Vehicles

	NORTH			EAST			SOUTH			WEST			
	Derby Rd			Burdett St			Jubilee St			Burdett St			
	L	T	R	L	T	R	L	T	R	L	T	R	
7:00 - 7:15	1	3	3	11	8	0	13	3	2	6	4	35	89
7:15 - 7:30	1	6	5	9	8	0	8	8	0	7	1	56	109
7:30 - 7:45	1	4	1	11	9	1	11	7	2	4	5	49	105
7:45 - 8:00	3	6	7	8	12	0	9	15	2	11	1	37	111
8:00 - 8:15	3	11	9	5	6	0	26	15	0	9	3	54	141
8:15 - 8:30	2	10	9	13	8	0	28	12	3	5	6	53	149
8:30 - 8:45	0	4	8	10	9	0	24	9	2	9	11	31	117
8:45 - 9:00	1	8	3	7	17	0	31	12	3	4	5	44	135
Period Ending	12	52	45	74	77	1	150	81	14	55	36	359	956

	NORTH			EAST			SOUTH			WEST			
	Derby Rd			Burdett St			Jubilee St			Burdett St			
Time Period	L	T	R	L	T	R	L	T	R	L	T	R	Total
7:00 - 8:00	6	19	16	39	37	1	41	33	6	28	11	177	414
7:15 - 8:15	8	27	22	33	35	1	54	45	4	31	10	196	466
7:30 - 8:30	9	31	26	37	35	1	74	49	7	29	15	193	506
7:45 - 8:45	8	31	33	36	35	0	87	51	7	34	21	175	518
8:00 - 9:00	6	33	29	35	40	0	109	48	8	27	25	182	542

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Count Number	J11-115	Client	U.R.A.P.	Count Date	Wednesday 31 August 2011
Location	DERBY RD / BURDETT ST / JUBILEE ST			Suburb	HORNSBY
Weather	Fine			Job Number	

Comments

Combined

Combined

	NORTH			EAST			SOUTH			WEST			
	Derby Rd			Burdett St			Jubilee St			Burdett St			
Time Period	L	T	R	L	T	R	L	T	R	L	T	R	Total
7:00 - 7:15	1	3	3	11	8	0	13	3	2	6	4	35	89
7:15 - 7:30	1	6	5	9	8	0	8	8	0	7	1	56	109
7:30 - 7:45	1	4	1	11	9	1	11	7	2	4	5	49	105
7:45 - 8:00	3	6	7	8	12	0	9	15	2	11	1	37	111
8:00 - 8:15	3	11	9	5	6	0	26	15	0	9	3	54	141
8:15 - 8:30	2	10	9	13	8	0	28	12	3	5	6	53	149
8:30 - 8:45	0	4	8	10	9	0	24	9	2	9	11	31	117
8:45 - 9:00	1	8	3	7	17	0	31	12	3	4	5	44	135
Period Ending	12	52	45	74	77	1	150	81	14	55	36	359	956

	NORTH			EAST			SOUTH			WEST			
	Derby Rd			Burdett St			Jubilee St			Burdett St			
Time Period	L	T	R	L	T	R	L	T	R	L	T	R	Total
7:00 - 8:00	6	19	16	39	37	1	41	33	6	28	11	177	414
7:15 - 8:15	8	27	22	33	35	1	54	45	4	31	10	196	466
7:30 - 8:30	9	31	26	37	35	1	74	49	7	29	15	193	506
7:45 - 8:45	8	31	33	36	35	0	87	51	7	34	21	175	518
8:00 - 9:00	6	33	29	35	40	0	109	48	8	27	25	182	542

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Count Number	J11-115	Client	U.R.A.P.	Count Date	Wednesday 31 August 2011
Location	DERBY RD / BURDETT ST / JUBILEE ST			Suburb	HORNSBY
Weather	Fine			Job Number	

Comments

Pedestrian Movements

All Pedestrians

	NORTH	EAST	SOUTH	WEST	
Time Period	Derby Rd	Burdett St	Jubilee St	Burdett St	Total
7:00 - 7:15	0	0	0	2	2
7:15 - 7:30	1	0	0	0	1
7:30 - 7:45	2	2	1	1	6
7:45 - 8:00	7	1	1	7	16
8:00 - 8:15	7	0	1	0	8
8:15 - 8:30	4	0	0	3	7
8:30 - 8:45	5	0	0	2	7
8:45 - 9:00	2	0	0	7	9
Period Ending	28	3	3	22	56

	NORTH	EAST	SOUTH	WEST	
Time Period	Derby Rd	Burdett St	Jubilee St	Burdett St	Total
7:00 - 8:00	10	3	2	10	25
7:15 - 8:15	17	3	3	8	31
7:30 - 8:30	20	3	3	11	37
7:45 - 8:45	23	1	2	12	38
8:00 - 9:00	18	0	1	12	31

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Location	DERBY RD / BURDETT ST / JUBILEE ST			Suburb	HORNSBY
Weather	Fine			Job Number	

Comments

Combined

	NORTH	EAST	SOUTH	WEST	
Time Period	Derby Rd	Burdett St	Jubilee St	Burdett St	Total
7:00 - 7:15	0	0	0	2	2
7:15 - 7:30	1	0	0	0	1
7:30 - 7:45	2	2	1	1	6
7:45 - 8:00	7	1	1	7	16
8:00 - 8:15	7	0	1	0	8
8:15 - 8:30	4	0	0	3	7
8:30 - 8:45	5	0	0	2	7
8:45 - 9:00	2	0	0	7	9
Period Ending	28	3	22	22	56

	NORTH	EAST	WEST	WEST	
Time Period	Derby Rd	Burdett St	Burdett St	Burdett St	Total
7:00 - 8:00	10	3	10	10	23
7:15 - 8:15	17	3	8	8	28
7:30 - 8:30	20	3	11	11	34
7:45 - 8:45	23	1	12	12	36
8:00 - 9:00	18	0	12	12	30

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Count Date Wednesday 31 August 2011

Location DERBY RD / BURDETT ST / JUBILEE ST

Suburb HORNSBY

Weather Fine

Job Number

Comments

	Derby Rd			Burdett St			Jubilee St			Burdett St			
Vehicle Class	L	T	R	L	T	R	L	T	R	L	T	R	Total
All Vehicles	6	33	29	35	40	0	109	48	8	27	25	182	542
Total	6	33	29	35	40	0	109	48	8	27	25	182	542

PEDESTRIAN	Derby Rd	Burdett St	Jubilee St	Burdett St	
All Pedestrians	18	0	1	12	31
Total	18	0	1	12	31

