

A TRANSPORT AND ACCESSIBILITY

REPORT

NORWEST PRIVATE HOSPITAL

PROPOSED NEW WING

7-11 NORBRIK DRIVE, BELLA VISTA

Prepared for
Healthscope Ltd

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Report Document Control

<i>Title</i>	A transport and accessibility report – proposed new wing – 7-11 Norbrik Drive, Bella Vista - 7-11 NORBRIK DRIVE, BELLA VISTA
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Appendix A. Reduced copies of architectural drawings.

Appendix B. Results of surveys of medical suites.

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1 INTRODUCTION

Report title	A transport and accessibility report – Norwest Private Hospital - proposed new wing – 7-11 Norbrik Drive, Bella Vista
Report purpose	Assessment of traffic and parking impacts of the proposed additional facilities at the Norwest Private Hospital (NPH).
Client	Johnstaff
Background information used for preparation of the present report	- A traffic and parking impact assessment report for the development of the Norwest Private Hospital and Medical Centre, prepared by TEF Consulting in May 2007 (NPHMC report) - Results of person and parking accumulation and interview surveys carried out by TEF Consulting at NPH in May and September 2013 - The Hills Development Control Plan 2011 (HDCP) Part C Section 1 Parking
Consultation	- The Hills Shire Council - Norwest Private Hospital - Healthscope Ltd - Norwest Association - Johnstaff Projects - NSW Roads and maritime Services - Health Projects International (HPI) Assistance of these organisations is greatly appreciated.

2 EXISTING DEVELOPMENT

Site location

A property known as No. 7-11 Norbrik Drive, Bella Vista, NSW. Refer to **Figure 1**.



Figure 1. Site location.

Built form

Two connected buildings

- a medical centre located in a three-storey building, and
- a 216-bed hospital located in a four-storey building

Refer to **Figure 2**.

Access

Refer to **Figure 3**.

Existing off-street parking

- A total of 690 car parking spaces, including
 - Ground level - 199 spaces
 - Basement level – 491 spaces



Figure 2. Aerial view of the Norwest Private Hospital, looking south (photo © AW Edwards).

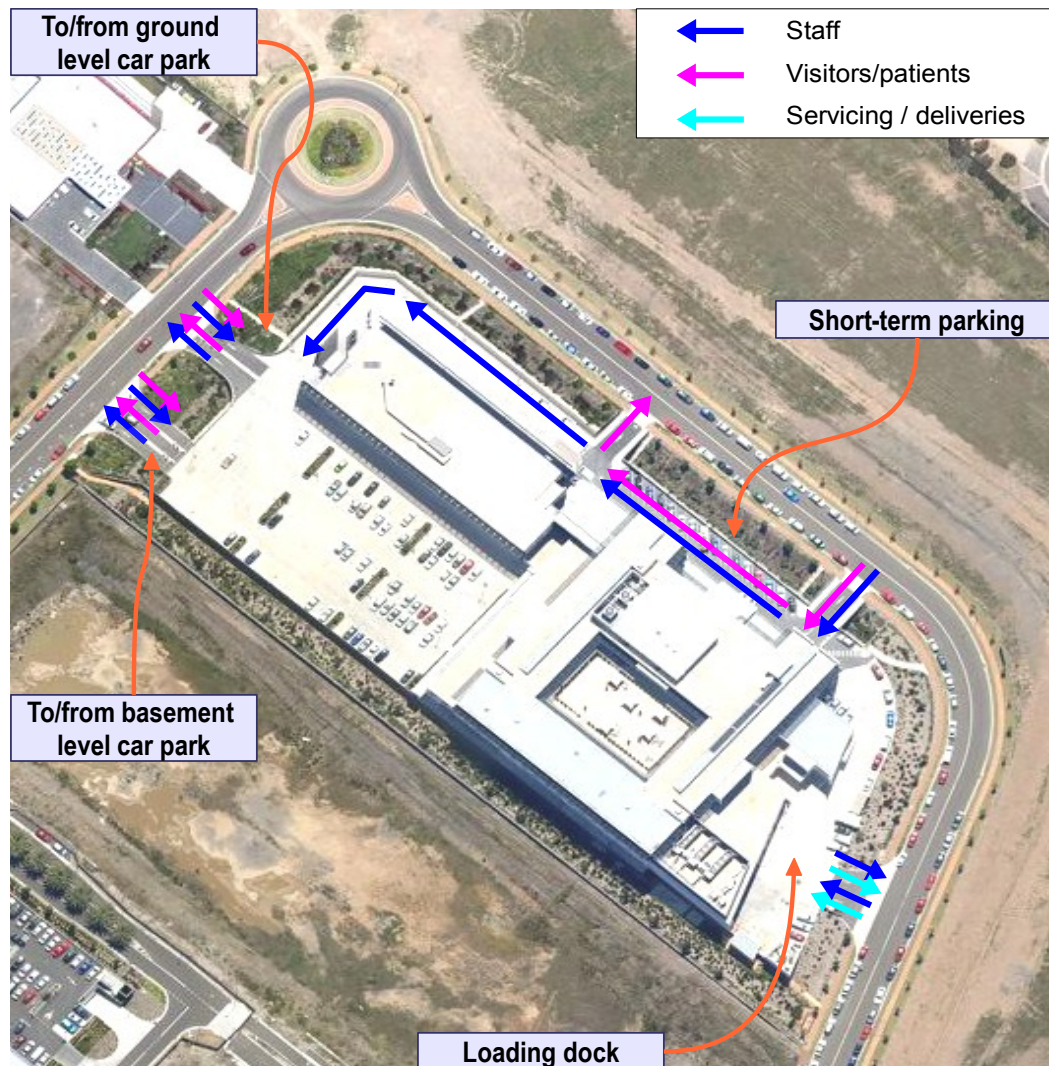


Figure 3. Existing access arrangements.

Existing facilities

Hospital

- 216 beds / 11 operating suites
- Key services:
 - Accident and Emergency Service
 - Oncology
 - Full hospital administrative support
 - VMO support through CMO's, doctors and senior nurses on site 24/7
 - Intensive Care Unit and Intensivists support
 - Integrated IT system
 - Medical and Nuclear Medicine
 - Mother/Baby Clinic (including post natal classes and child health clinic)
 - Pathology
 - Pharmacy - retail and inpatient
 - Physiotherapy

Existing facilities (continued)*Medical centre*

- Approximately 4,754 m² of consulting and special services medical suites available for purchase and lease on three levels. Observations conducted by TEF Consulting over a number of years indicated that typically not all suites are occupied at any one time due to changes of ownership and leasing arrangements.

3 PROPOSED REDEVELOPMENT

Built form	A new building extension (new wing) above the existing ground level car parking area • Three floor levels above the existing ground level car park ▪ Amendments to the layouts of basement and ground level car parking areas to accommodate new lifts and stair wells • Loss of 33 car parking spaces (10 on the basement level and 23 on the ground level) • Addition of 39 spaces on the basement level ▪ Net increase of car parking 6 spaces ▪ Design drawings have been prepared by Health Projects International ▪ Reduced copies of the drawings are included in Appendix A.
New and refurbished facilities	• New traffic generating facilities ▪ Hospital component ▪ A new 52 bed ward (51 additional beds, taking into account one bed lost elsewhere) ▪ 5 new operating theatres • with new peri-operative and recovery lounges ▪ Expanded and new office and support facilities (CSSD, general store, medical records, accounts, ▪ Medical consulting suites ▪ 900 m² • Sizes of individual suites to be confirmed during pre-sale ◦ Assumed to be similar to the average existing (149 m² per suite – 6 suites) ▪ New and expanded facilities not likely to generate additional traffic ▪ Plant room ▪ Washing and packing expansions ▪ Cath lab sterile store ▪ Cooling store expansion ▪ Disposal room ▪ Staff room ▪ Food and food trolley storage
Additional staff	▪ Hospital component (as planned by NPH and Healthscope Ltd) ▪ 88 staff during the morning (busiest) shift in all new facilities ▪ 35 VMOs (visiting medical officers) ▪ Medical consulting suites ▪ 15 support staff • Based on an average ratio of 2.46 person per suite as per the survey results • Maximum possible number if all medical suites were leased out (typically some are vacant)

4 IMPACTS OF THE PROPOSED REDEVELOPMENT

4.1 Parking demand and provision

Planning Control	The Hills Development Control Plan 2012 (HDGP) Part C Section 1 Parking
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DCP car parking provision rates	Land use	Required minimum provision
	Hospital	1 space per 2 beds for visitors plus 1 space per 1.5 employees plus 1 space per 2.5 visiting medical officers
	Medical Centres, Health consulting rooms	3 spaces per consulting room plus 1 space per support employee

Base data for DCP calculations

Existing facilities

- *Hospital*
 - 313 staff during the morning (busiest) shift
 - 216 beds
 - 120 active (i.e. admitting) VMOs (reverse calculated from the actual parking demand of 48 cars at peak times, using DCP rate; the actual number is less)
- *Medical Centre*
 - 32 medical suites
 - Maximum possible number if all medical suites were leased out (currently some are vacant)
 - determined based on a typical lettable floor area per doctor/specialist of 149 m² based on the survey of actual use
 - average medical suite size is required for calculations due to flexible floor areas of medical suites because of varying leasing arrangements for any given time period and varying requirements of particular medical specialists
 - 79 support staff
 - Based on an average ratio of 2.46 person per suite as per the survey results
 - Maximum possible number if all medical suites were leased out (currently some are vacant)

Proposed additional

- *Hospital*
 - 88 staff during the morning (busiest) shift
 - 51 beds
 - 35 VMOs
- *Medical Centre*
 - 6 medical suites

Base data for DCP calculations (continued)

- Maximum possible number if all medical suites were leased out (typically some are vacant)
- determined based on a typical lettable floor area per doctor/specialist of 149 m² based on the survey of actual use
 - Refer to **Appendix B** for survey description and results
- 15 support staff
 - Based on an average ratio of 2.46 person per suite as per the survey results
- Maximum possible number if all medical suites were leased out (typically some are vacant)

Calculated HDCP car parking requirements

- The results of calculations of existing car parking requirements are contained in **Table 3.1**
- **Table 3.2** contains the information about the proposed changes to the on-site car parking provision.
- The results of calculations of additional car parking requirements are contained in **Table 3.3**
- The results of calculations of total car parking requirements after the proposed redevelopment are contained in **Table 3.4**

Table 3.1. Existing parking requirements based on surveys of staff and actual use of floor space.

Existing	The Hills DCP 2012			
	Rate		Number	Parking required
Hospital	1 per	1.5 staff	313	209
	1 per	2 bed	216	108
	1 per	2 1/2 VMO	120	48
	SubTotal			365
Medical suites (per suite)	1 per	1 support staff	79	79
	3 per	1 Room (149 sqm)	32	96
	SubTotal			175
	Total requirement			539

Approved car parking provision	690
Includes Short-term drop-off spaces	16
Long-term parking	674
Existing surplus parking	135

Table 3.2. Changes to car parking provision due to proposed construction.

Level	Type	Existing	Deleted	Added	Total
B1	long term	491	-10	39	520
GL	long term	183	-23	0	160
GL	drop-off	16			16
Total		690	-33	39	696
Spaces added or lost					6

Table 3.3. Proposed Northern extension.

Additional as a result of redevelopment	The Hills DCP 2012			
	Rate		Number	Parking required
Hospital	1 per	1.5 staff	15	10
	1 per	2 bed	51	26
	1 per	2 1/2 VMO	35	14
	SubTotal			50
Operating theatre (hospital)	1 per	1.5 staff	36	24
	1 per	2 bed		-
	SubTotal			24
Medical suites (per suite)	1 per	1 support staff	15	15
	3 per	1 Room (149 sqm)	6	18
	SubTotal			33
Other staff (hospital)	1 per	1.5 staff	37	24
	1 per	2 bed		-
	SubTotal			24
		Total requirement		132

Existing surplus parking	135
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Number of additional spaces required	(3)
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Additional spaces provided	6
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Surplus parking provision	9
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Notes:

Staff numbers are based on HPI and NPH advice; the day surgery is the existing facility relocated and does not generate additional parking.

The existing day surgery areas to be vacated will be occupied by the new operating theatres (included in Table 3.3)

Based on 5 operating theatres.

Table 3.4. Total parking requirements after redevelopment.

After redevelopment	The Hills DCP 2012			
	Rate		Number	Parking required
Hospital	1	per 1.5 staff	401	267
	1	per 2 bed	267	134
	1	per 2 1/2 VMO	155	62
	SubTotal			463
Medical suites (per suite)	1	per 1 support staff	94	94
	3	per 1 Room (sqm)	38	114
	SubTotal			208
	Total requirement			671

Plus existing Short-term drop-off spaces	16
Total parking required after redevelopment	687

Existing parking provision	690
Additional spaces provided	6
Total proposed parking provision	696

Surplus parking provision	9
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4.2 Actual existing parking demand

- To ensure the appropriateness of Council's DCP parking calculations & to further reinforce the adequacy of parking by Norwest Private Hospital, TEF Consulting undertook an audit of the existing car park usage. Results are as follows.

- On site**

- Based on the results of parking accumulation counts in all car parking areas
 - Conducted on Monday 27 May 2013
 - Checked against historical boomgate records obtained from the parking operator and found to be consistent
- Refer to **Table 3.5** for survey results
- Actual total demand on site is 415 to 425 cars at peak times (say 420 cars)

- On street**

- Conducted on Monday 27 May 2013
- Refer to **Figure 4** for survey locations and to **Table 3.6** for results
- Existing demand
 - Areas 1, 2 and 3 (NPH boundaries) – approximately 100 cars
 - Areas 1 to 3 plus areas 5a & 5b – approximately 130 cars
 - All above plus areas 7a & 7b – approximately 160 cars
 - The above survey results were compared with similar surveys carried

out by TEF Consulting in 2010 and 2011 and were found very consistent.

- **Total**

- Assuming NPH staff and some visitors park in all areas 1 to 3 and in 50% of areas 5 and 7
 - $420 \text{ (on site)} + 130 \text{ (on street)} = 550 \text{ cars}$
- Consistent with the DCP requirement calculated in **Table 3.1**
- Council's DCP rates provide a very good basis for the actual parking demand calculations



Figure 4. Parking accumulation survey areas.

Table 3.5. Results of parking accumulation surveys on NPH site.

Time	Number of parked cars				
	Parking Location				
	Basement level		Ground Level		
	Staff/ visitors	Disabled	Staff/ visitors	Disabled	Total
7:00	97	4	34	2	137
8:00	156	7	53	3	219
9:00	245	12	86	6	349
10:00	262	15	91	6	374
11:00	281	17	120	6	424
12:00	282	17	112	6	417
13:00	280	21	109	5	415
14:00	260	20	107	6	393
15:00	241	19	97	6	363
16:00	200	18	84	4	306
17:00	159	20	68	2	249
18:00	115	17	54	1	187
	Basement level		Ground Level		
	Staff/ visitors	Disabled	Staff/ visitors	Disabled	Total
	Number of parking spaces				
	451	40	173	10	674
	Number of vacant spaces				
7:00	354	36	139	8	537
8:00	295	33	120	7	455
9:00	206	28	87	4	325
10:00	189	25	82	4	300
11:00	170	23	53	4	250
12:00	169	23	61	4	257
13:00	171	19	64	5	259
14:00	191	20	66	4	281
15:00	210	21	76	4	311
16:00	251	22	89	6	368
17:00	292	20	105	8	425
18:00	336	23	119	9	487

Table 3.6. Results of parking accumulation surveys on streets near NPH site.

Time	Number of parked cars													
	Parking Location													
	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B	7A	7B
7:00	24	20	16	21	7	10	29	1	5	21	7	14	8	3
8:00	24	20	16	21	7	11	27	3	5	26	17	18	15	6
9:00	25	19	16	21	8	11	49	3	5	25	15	22	16	10
10:00	26	21	16	22	7	11	64	3	5	19	18	23	14	11
11:00	25	21	16	22	7	11	58	3	5	24	20	24	17	11
12:00	25	20	16	21	7	12	60	3	5	26	16	24	18	11
13:00	24	20	16	22	7	11	59	3	5	24	17	22	20	13
14:00	22	21	16	21	7	11	50	3	4	22	18	23	16	10
15:00	24	18	16	19	6	10	61	1	1	18	16	15	16	9
16:00	23	17	16	20	8	11	54	1	0	14	16	15	12	5
17:00	18	16	16	21	7	8	48	2	0	17	17	10	11	3
18:00	21	19	16	21	5	7	57	2	0	17	14	9	9	4

Estimated NPH demand		
Areas		
1 to 3	1-3&5	1-3&5&7
98	124	135
99	130	151
100	130	156
103	127	152
102	131	159
101	132	161
100	129	162
98	124	150
93	112	137
95	109	126
86	103	117
89	106	119

Refer to Figure 1 for parking survey areas.

Parking surplus	- If all staff and visitors parked on site (550 cars) then there would have been still some 124 car parking spaces available - The proposed Northern extension will add 6 car parking spaces, thus bringing the total surplus to approximately 130 (during the peak demand period)
	- The Northern extension will require 131 cars to be provided. - The existing car parking surplus is sufficient for the additional parking demand even if all cars parked on site.
Reason for existing parking surplus	The hospital will continue to be self-sufficient in terms of car parking provision and will continue to comply with Council's DCP requirements.
	The existing quantum of parking provision was approved by The Hills Shire Council based on the estimated staff numbers and floor areas.
	- The assessment of parking demand carried out by TEF Consulting for the DA was based on a number of approaches - RTA rates (lowest estimate at 424 spaces) - TEF surveys at similar developments (medium estimate at 615-650 spaces) - Council's DCP (highest estimate at 650-709 spaces)
	The Development Approval was based on the average of the two highest estimates.
	- The actual existing number of staff and, in particular, the number of medical suites are currently less than those predicted at the time of the DA, resulting in a much lower parking demand compared with the parking demand which was adopted as basis for the approval by Council. - Note that the actual parking demand is approximately average of that estimated based on the RTA rates and TEF surveys.
Results of the assessment	There will be no adverse impacts on the existing parking situation in vicinity of the NPH as a result of the proposed redevelopment.

4.3 Cumulative traffic impacts

Existing and future traffic conditions	- NPH is located within the Norwest Business Park (NBP) - At the time of the NBP Master Plan design and approval process NBP was also known as Norbrik Precinct 6 (NP6).
	Refer to Figure 5 for NBP boundaries.
	NBP is not yet fully developed, with a number of land lots remaining vacant.
	The existing traffic volumes entering and leaving NBP via key access intersections are thus not yet at the levels predicted for the full NBP development.
	Therefore, analysis of the intersection operation under a combination of existing traffic flows and additional traffic as a result of the proposed redevelopment will not adequately address the cumulative impacts of NPH and other developments on the road network.
	In this regard it is prudent to compare the actual existing traffic generation from NPH and the likely future NPH traffic generation with the planned and approved levels of traffic of NPH in the context of the whole of the

NBP.
Assessment of traffic generation to and from NBP when it would be fully developed and its impacts on the operation of the road network was undertaken by Gennaoui Consulting Pty Ltd for a number of land use scenarios.
- The most recent scenario of NBP development included trip generation from NPH based on the original NPH DA approval.
Modelling of intersection and road network operation for the above assessments was undertaken by TEF Consulting on behalf of Gennaoui Consulting Pty Ltd.
Based on the assessment by Gennaoui Consulting Pty Ltd, development of NBP was approved by all relevant authorities.
Approved intersection layouts and phasing for traffic signals were designed to accommodate total traffic from NBP when all lots would be fully developed.
- This applies to the two key access intersections specifically listed in DPI requirements - Norwest Boulevard/Lexington Drive/Elizabeth Macarthur Drive - Old Windsor Road/Norbrik Drive
As in the case with parking demand projections, at the DA stage traffic generation from NPH was estimated based on staff and patient forecasts which turned out to be excessive.
The actual existing traffic generation to/from NPH is less than that predicted at the DA stage (and used for NBP Master Plan approval)
- Actual traffic generation to/from the NPH car parks was obtained from the ticket booth statistics for all entry points to the hospital car parking areas - NPH traffic generation to/from on-street parking areas was estimated based on the off-street car parking ratios of trips in relation to parking demand.
Additional traffic generation to/from NPH as a result of the proposed redevelopment was estimated to be proportional to the increase in the total number of staff - Note that hospital staff are the majority of users generating traffic movements and parking demand at health care establishments - Note also that the number of patients and visitors is directly related to the number of staff and specialists at NPH
Total traffic generation after the proposed redevelopment was compared with that used for the analysis of the impacts of the proposed NPH separately for the original DA and as part of the NBP for NBP Master Plan approval. - Refer to Table 4.1 for the results of the comparison.
- The estimated traffic generation as a result of the proposed development will remain within the levels - previously approved for the NPH development as per the original DA - previously approved for the Master Plan for Norwest Business Park (Norbrik Precinct 6)
Given that the future estimated trip numbers are the same or lower than those used in the previous approvals there is no need to model the operation of key intersections.

- Considered separately, additional traffic generation as a result of the proposed redevelopment is regarded as low.

- When distributed on the road network, additional turning traffic volumes at key intersections will be very low indeed, within hourly fluctuations of the existing traffic.

- Refer to **Figures 6 and 7** for the estimated distribution of additional traffic at the key intersections.

- Traffic distribution by direction of travel was based on the results of a questionnaire survey of staff and visitors at NPH (conducted in May 2013)

- Respondents were asked to indicate on a map their routes of travel to and from the NPH.

Results of the assessment

- The cumulative impacts of the proposed development will remain within the levels

- previously approved for the NPH development
- previously approved for the Master Plan for Norwest Business Park (Norbrick Precinct 6)

- The proposed redevelopment will have no adverse impact on the road network operation, neither at present nor in the future.

Table 4.1. Traffic generation from the Norwest Private Hospital.

		Existing			Additional for redevelopment	Total after redevelopment	Approved Original DA	Approved Norwest Business Park
		On site	On street	Total				
AM peak	Inbound	114	11	125	33	158	154	154
	Outbound	30	3	33	9	42	61	59
	Total	144	14	158	42	200	215	213
PM peak	Inbound	31	8	39	10	49	77	101
	Outbound	95	23	118	31	149	159	185
	Total	126	31	157	41	198	236	286

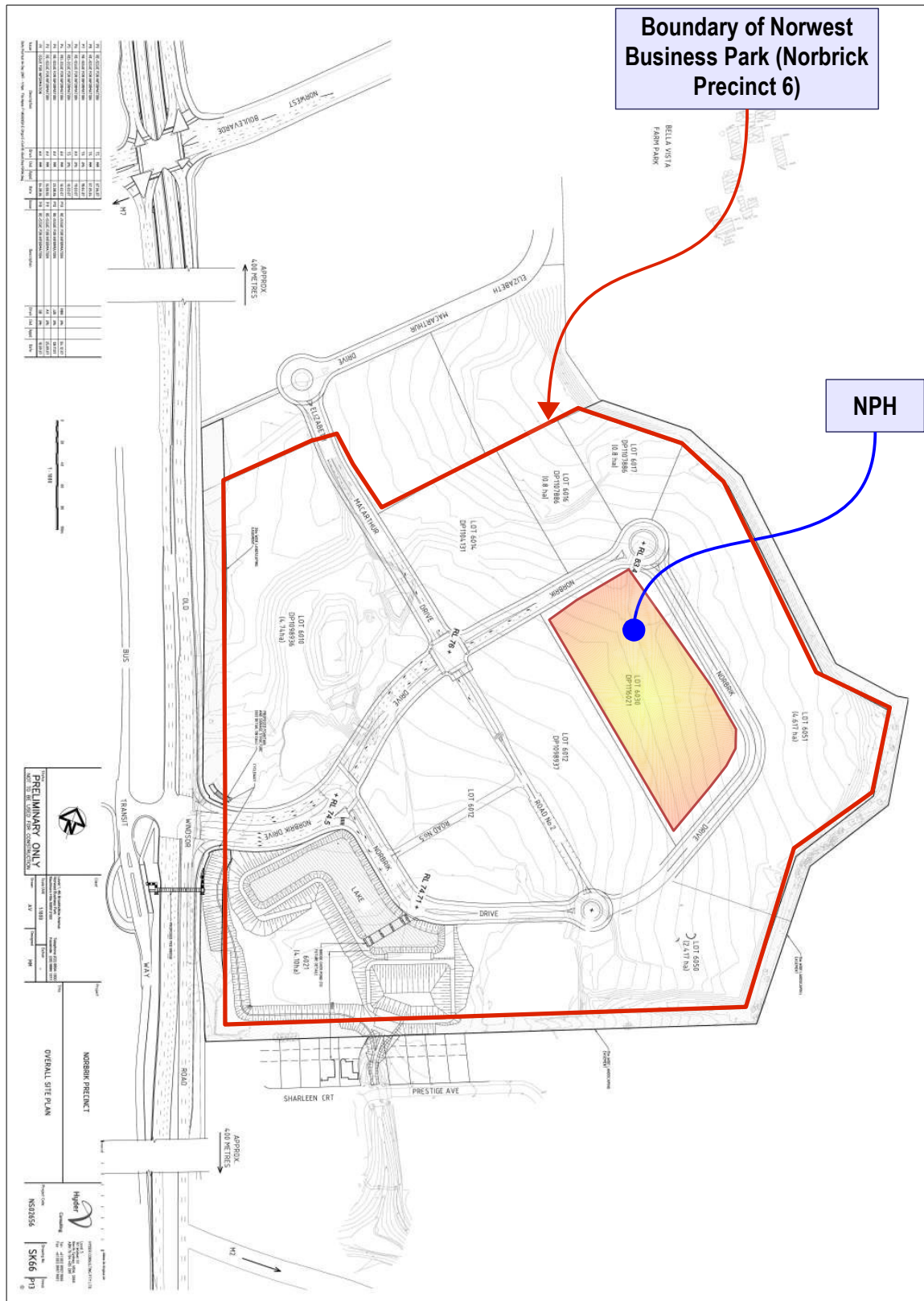


Figure 5. Boundary of the Norwest Business Park (Norbrick Precinct 6) (base drawing by Hyder Consulting).

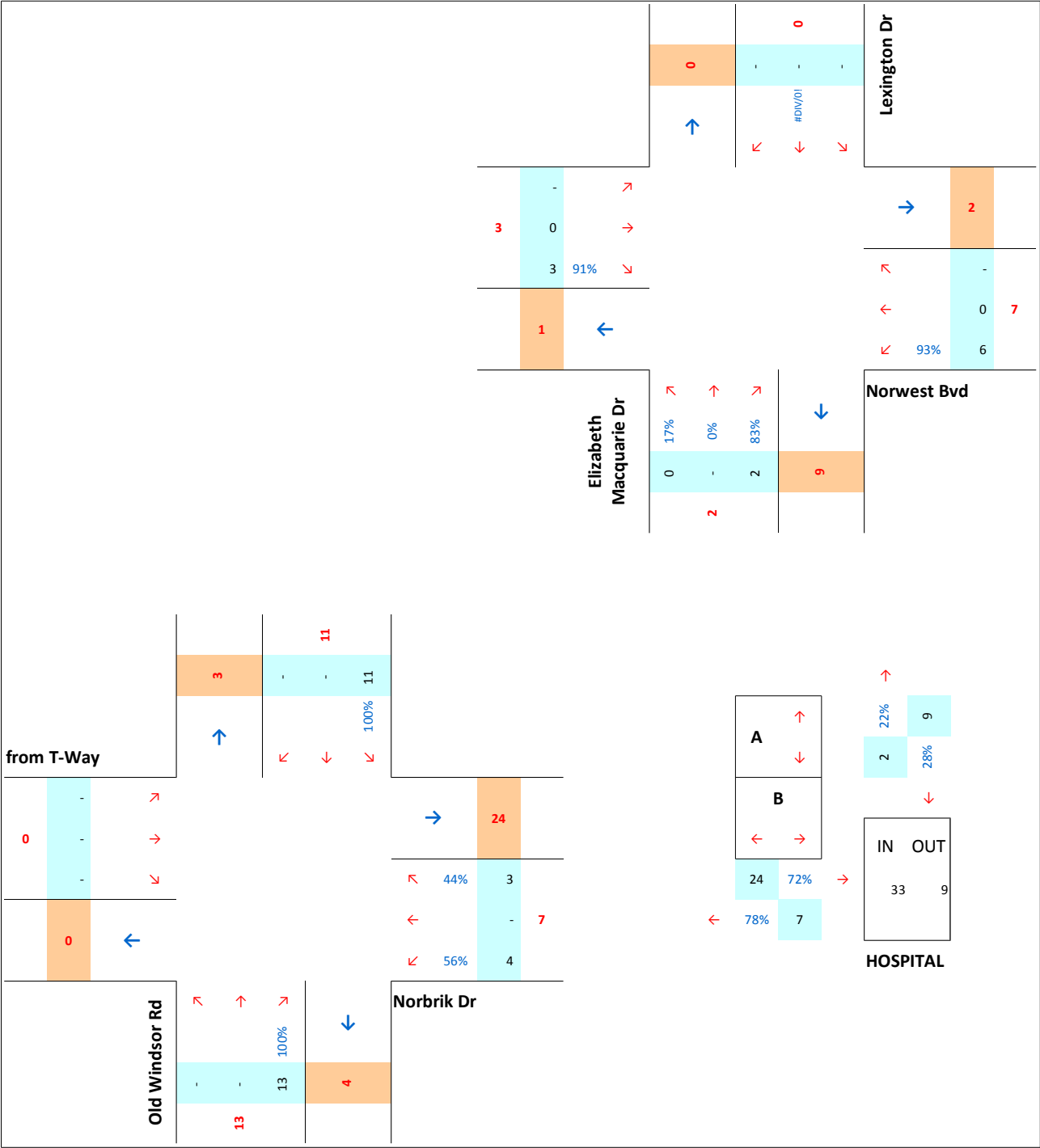


Figure 6. Estimated additional traffic generation and distribution (AM peak hour).

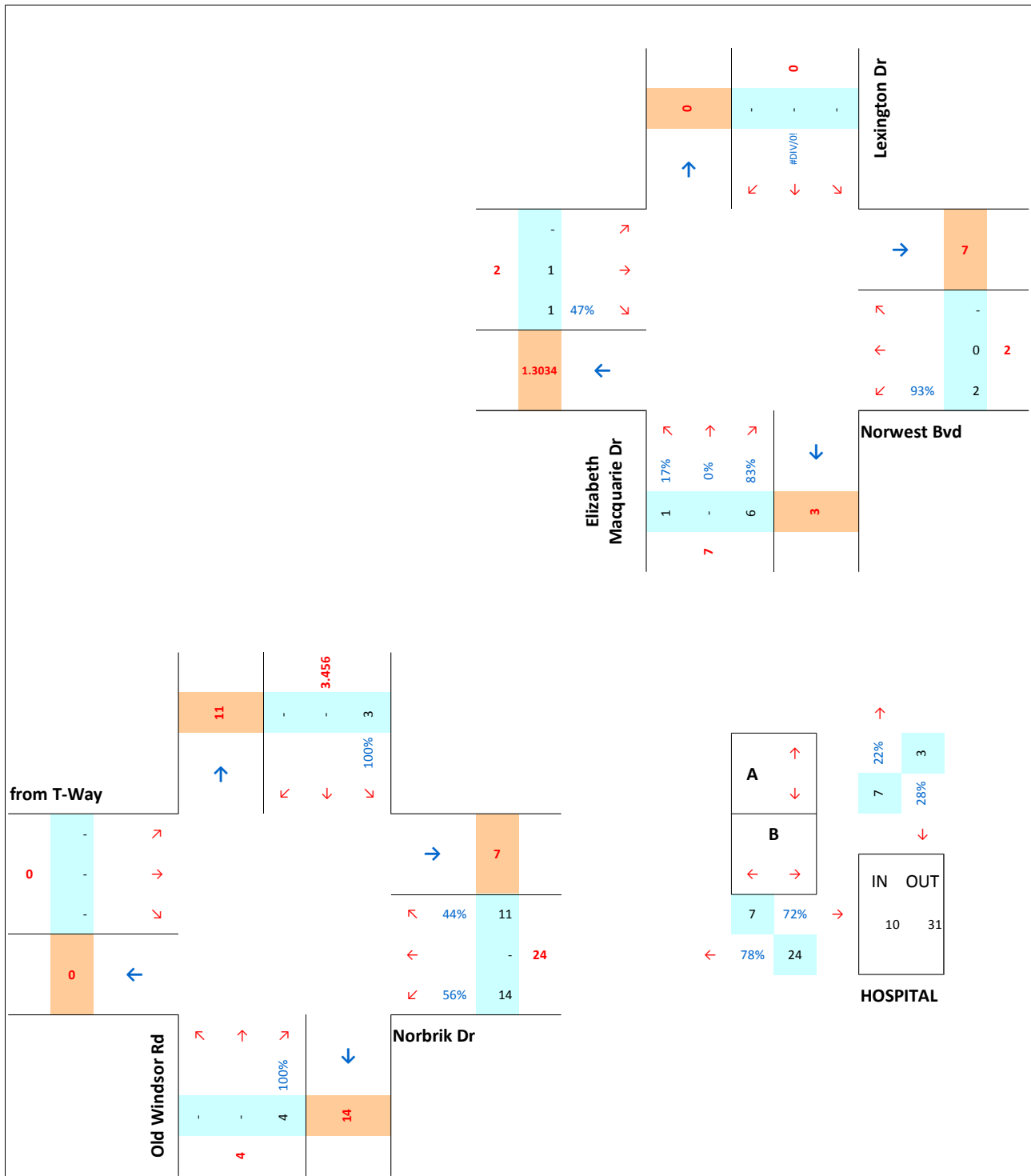


Figure 7. Estimated additional traffic generation and distribution (PM peak hour).

Known intersection operation issues

- The roundabout of Norwest Boulevard/Lexington Drive/Elizabeth Macarthur Drive currently operates at a poor Level of Service during commuter peak periods, mostly due to high traffic volumes in Norwest Boulevard.
- NSW RMS and The Hills Council have been undertaking investigations of possible improvements for this intersection for a number of future scenarios.
- This work has not yet been finalised, however NSW RMS is committed to carry out necessary (not yet confirmed) improvements to ensure satisfactory operation of this intersection in the future.

4.4 Travel modes other than private car**Sources of information**

- NSW Government Transport Info web site www.131500.com.au
- Web site of NSW Department of Planning & Infrastructure
- Results of the site inspection
- Results of the questionnaire surveys
- Results of surveys of pedestrian and bicycle movements

4.4.1 Walking and cycling**Existing path network**

- Footpaths are provided on all streets within the NBP which connect NPH with the main roads and bus stops, including the T-Way.
 - A shared cycle-pedestrian path runs along the eastern side of Old Windsor Road.
 - There are no designated cycle paths within NBP
 - Footpaths are mostly level.
 - Footpaths are not protected from adverse weather conditions.
 - There is no supportive directional signage to/from NPH and T-Way bus stops.
 - The existing capacity of the footpath network is more than sufficient for the existing demand.
 - Surveys of pedestrian and bicycle movements on the NBP street network indicated very low pedestrian volumes, generally in the order of 2-10 pedestrians per hour on each footpath.
 - In the morning peak the footpath along the northern NPPH frontage carried up to 30 pedestrians per hour
 - Refer to survey results in **Appendix C**
 - A pedestrian bridge above Old Windsor Road provides for a safe pedestrian connection between NBP and the T-Way bus stops
 - Results of questionnaire surveys indicate a very low travel mode share for both walking (1.2% for staff and 1.8% for visitors) and cycling (0.2% for staff and 0% for visitors).
- Future arrangements**
- As the land development at the NBP progresses, it is likely that the pedestrian mode share of visitors/patients will increase. It is expected that some employees of adjacent businesses would choose to use NPH GP and clinic services.
 - New cycle-pedestrian links are proposed to connect NBP to the Old Windsor Road cycleway and to other precincts north of Norwest Boulevard as part of the North West Rail Link Corridor Strategy (NWRLCS).
 - Refer to **Figure 8**.

- Additional pedestrian and bicycle trips as a result of the proposed NPH redevelopment are expected to be very minor if no measures are carried out to increase the non-car mode shares.
- The existing capacity of the footpath network will be sufficient for any foreseeable increase in pedestrian movements.
- The proposed Green Link and cycle links as part of the NWRLCS will adequately cater for the likely increase in bicycle trips.

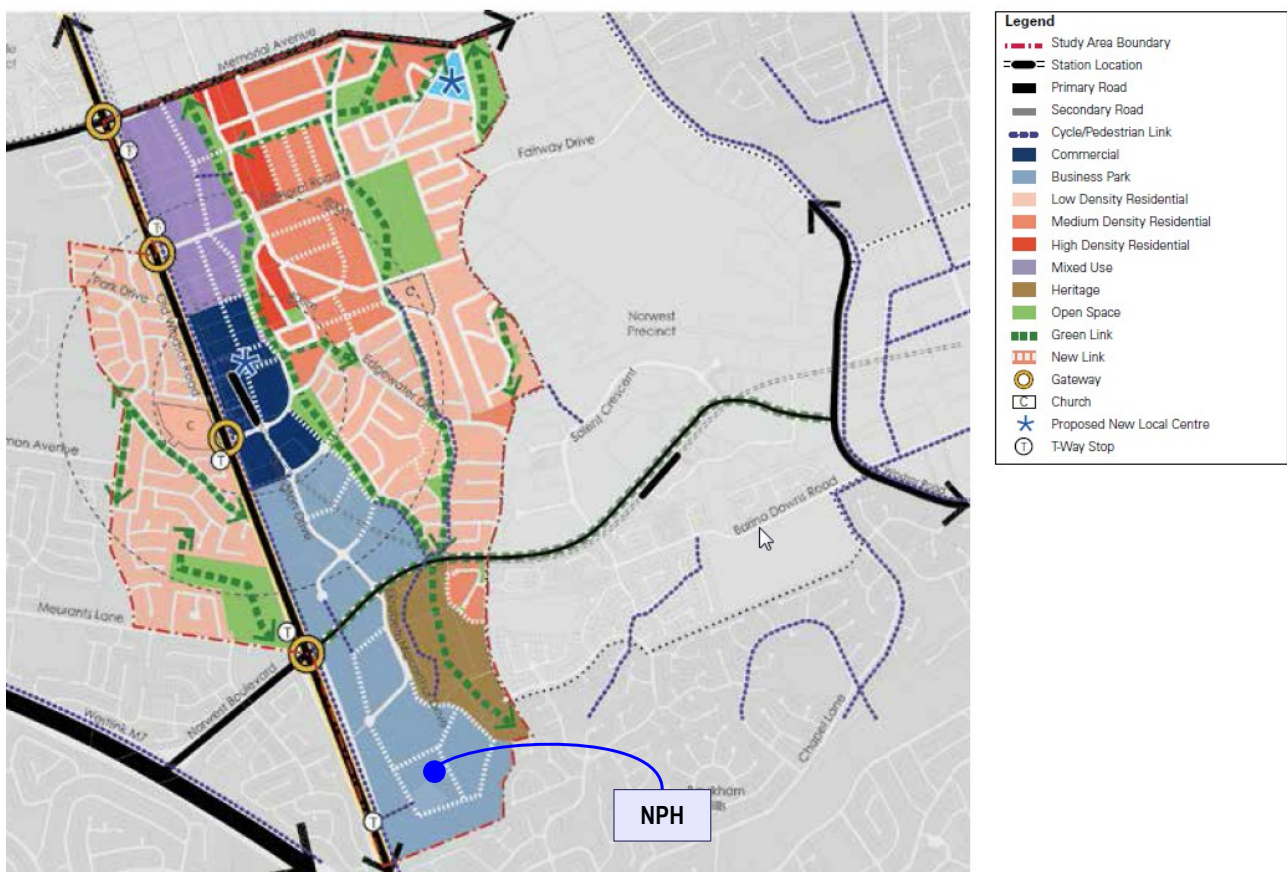


Figure 8. Proposed Structure Plan for the Bella Vista Study Area (Source: North West Rail Link Corridor Strategy).

4.4.2 Bus services

Bus

- Refer to **Figure 9** for locations bus routes and stops.
- Refer to **Appendix D** for bus route maps.
- Route T64 has bus stops near the site's main entrance.
 - Shelter is provided at only one of the two stops.
- T-Way with multiple bus services is within a convenient walking distance from NPH.
- Counts of passengers set down and picked up at the bus stops near the NPH indicated that in the order of 2-4 passengers per hour in the morning peak and about 30 per hour in the afternoon used buses for travel to and from the NPH.
- Existing bus services have sufficient capacity for the future increase estimated in

the order of 25% of the existing numbers.

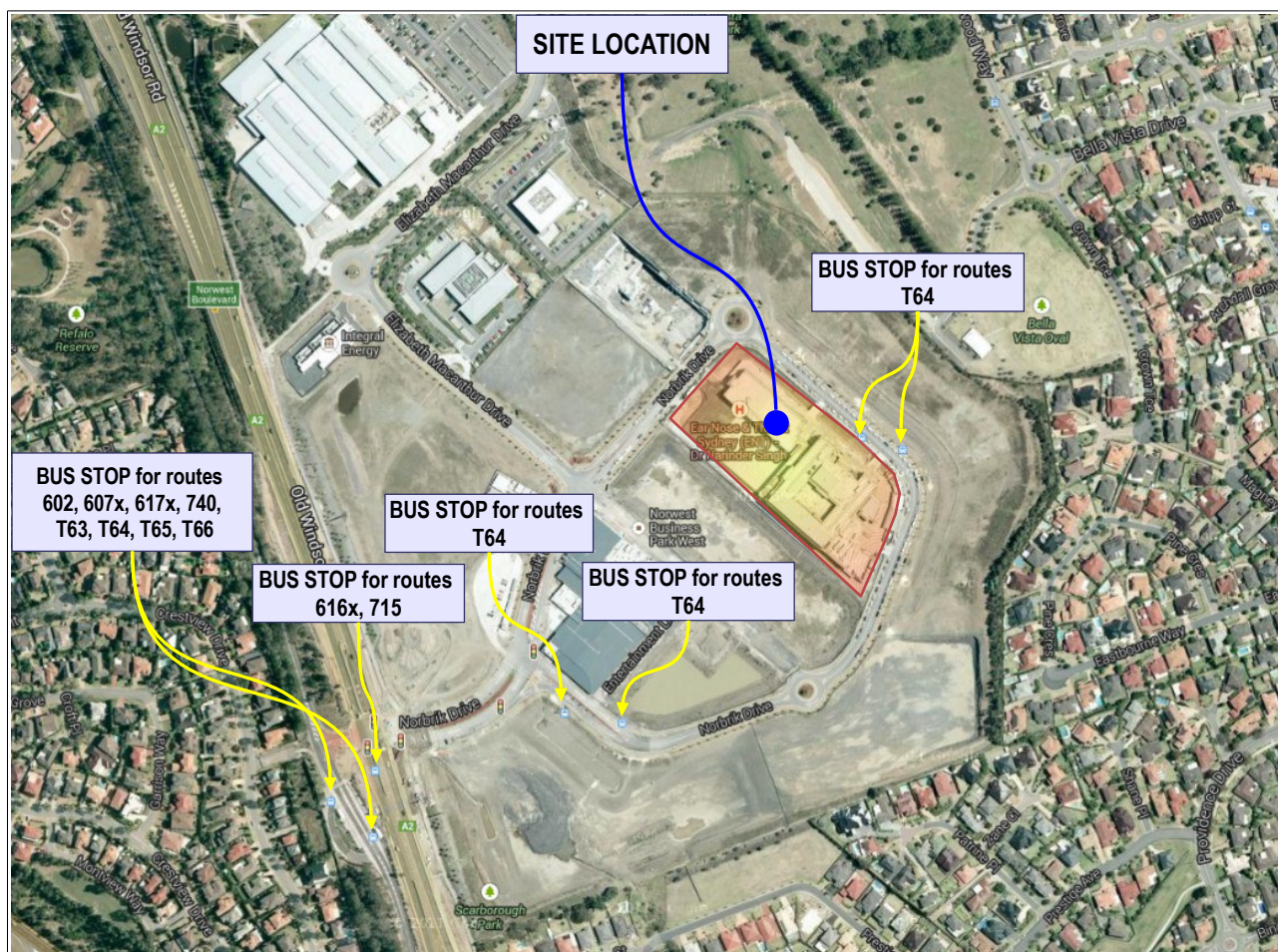


Figure 9. Existing bus stops in the vicinity of the Norwest Private Hospital.

4.4.3 Train services

- Currently there are no train stations within a walking distance from the NPH site.
- Direct bus connections (by bus T64 to the door or T63 & T66 to the T-way stop on Old Windsor Road)) exist from the West mead and Parramatta train stations only.
- Currently 0.6% of staff and nil visitors arrive to the NPH by train (those who do use buses to complete the trip).
- The proposed North West Rail Link will change this situation dramatically.
 - Two train stations will be within a close connection by a greater number of bus services and even on foot.
- Refer to **Figure 10** for the proposed North West Rail Link plan.

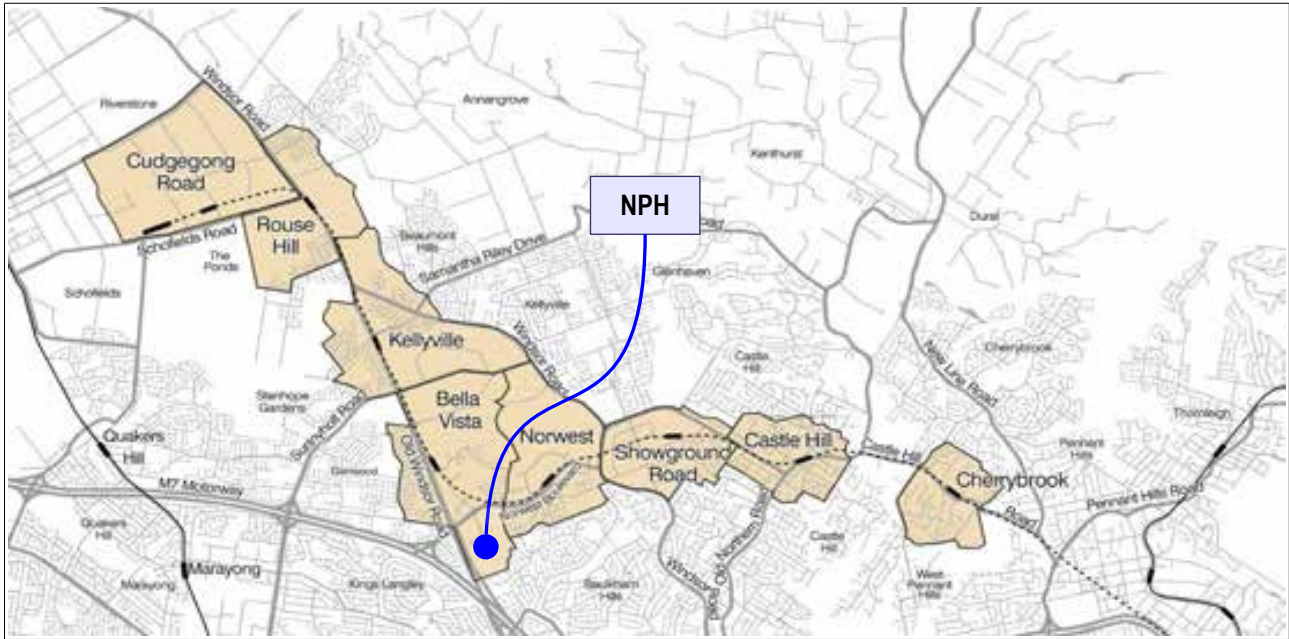


Figure 10. Proposed North West Rail Link (Source: North West Rail Link Corridor Strategy).

4.5 Access arrangements

- It is not proposed to change the existing access arrangements for staff, visitors, emergency vehicles, service vehicles and patient pick-up / drop-off.
 - Refer to **Figure 3**.
- The existing arrangements are satisfactory.
- The proposed development does not require any changes to be effected.

5 MEASURES TO PROMOTE SUSTAINABLE MEANS OF TRANSPORT

5.1 Framework and policies

NSW State Plan 2010	• Targets
	◦ Increase the proportion of total journeys to work by public transport in the Sydney Metropolitan Region to 28% by 2016 (2009 value 24%)
	◦ Increase the mode share of bicycle trips made in the Greater Sydney region, at a local and district level, to 5% by 2016 (2009 value 1%)
NSW Bike Plan 2010	◦ Increase the mode share of walking trips made in the Greater Sydney region to 25% by 2016
	• 10 year vision for cycling focusing on the delivery of cycling infrastructure and the promotion of its use.
	• Includes partnerships between State agencies, local councils and non government organisations
PCAL	• Includes programmes such as bike parking, security, safety training, signage and community initiatives
	• Premier's Council for Active Living NSW (PCAL)
	◦ PCAL comprises senior representatives from NSW Government agencies, and members from the business and community sectors.
	◦ PCAL aims to encourage more people in NSW to be more active every day.
	◦ The Council works with government, business and community partners in promoting greater involvement in active living, strengthening physical and social environments that facilitate and support active lifestyles, active travel and liveability. PCAL ensures that government policies and strategies provide every opportunity for the citizens of NSW to embrace active living through all stages of their life.

5.2 Measures and actions

Workplace Travel Plan	• NPH by its size and nature of activities is a good candidate for implementation of a Workplace Travel Plan (WTP).
	◦ Until a WTP-specific study is carried out and the WTP is developed it is too early to specify all possible measures and actions which may form WTP.
	◦ However, some possible measures have been identified for further guidance; these are listed below.
Possible measures	• Public transport timetables and maps made available to staff and visitors
	• Promotion of / information about key local walking and cycling routes on the web page and in printed material
	• Possibly subsidising/salary sacrificing cost of public transport tickets for staff
	• Improvement of current website detailing transport options for both staff and patients
	• Establishment of transport information packs to new staff explaining the various ways (other than motor vehicle) of travelling to the site
	• Development of a Transport Access Guide booklet for staff and visitors

- Provision of end-of-trip facilities for bicycle users
- A dedicated staff and visitor shuttle bus
- Utilise the popular car sharing initiatives (provision of a dedicated car share space, like GoGet)
- Campaigns / events to popularise and encourage walking and cycling (e.g. Ride to Conquer Cancer)
- Measures aimed to reduce staff travel on business (like teleconferencing)
- Introduce services on site to reduce the need to travel during the day (like post box, dry cleaning, etc.)

6 CONCLUSIONS

Proposal	Redevelopment of the existing Norwest Private Hospital - Construction of a new 3-level building extension above the existing ground level car parking area, comprising - A new hospital ward (51 additional beds) 5 new operating theatres - New medical consulting suites (900 m²)
Car parking provision	Provision of 6 additional car parking spaces, thus bringing the total car parking provision to a total of 696 car parking spaces.
Car parking requirements	- By The Hills Development Control Plan 2012 (HDCP) Part C Section 1 Parking 687 spaces
Parking impacts	- The proposed additional car parking complies with and exceeds HDCP requirements. - The proposed car parking provision is thus satisfactory; there will be no negative impact on the existing parking conditions neither on site nor off-site.
Traffic impacts	Additional traffic generated as a result of the proposed development is within previously approved overall levels and thus will not have a negative effect the operation of the street network.
Conclusion	The proposal is supported on traffic and parking grounds.

7 REFERENCES

- The Hills Development Control Plan 2012 (HDCP) Part C Section 1 Parking
- TEF Consulting (15 May 2007) An assessment of the potential traffic and parking impacts of the proposed Norwest Private Hospital and Medical Centre, Bella Vista.

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Appendix A.
Reduced copies of architectural drawings.



Appendix B.
Results of surveys of medical suites.

survey	NO. OF VACANCY	AREA (SQM)	APPROVED LAND USE
G1+G2 combined	SUITE G1	271	Renal Clinic:
	SUITE G2	82	Doctors Clinic
	SUITE G3	165	Doctors Clinic
	SUITE G4	82	Doctors Clinic
	SUITE G5	301	Clinic
	SUITE G6	120	Doctors Clinic
	SUITE G10	167	Doctors Clinic
	SUITE G12	397	Doctors Clinic
	SUITE G14	134	Physiotherapy Clinic
	SUITE G21	751	Medical Imaging
	SUITE G22	193	Doctors Clinic
	SUITE G23	245	Doctors Clinic
Orthopaedic	SUITE 101	245	Doctors Clinic
	SUITE 103	275	Combined to form Eye Clinic
	SUITE 104	0	
	SUITE 105	109	ENT Clinic
	SUITE 106	121	Hospital Admin
	SUITE 107	147	Doctors Clinic
	SUITE 108	122	Doctors Clinic
	SUITE 109	197	Vacant
	SUITE 110	163	Doctors Clinic
	SUITE 111	74	Hospital Use
	SUITE 112	164	
	SUITE 211	79	Hospital Use
Cardiac Health Inst.	SUITE 212	108	Hospital Executives
	TOTAL		

GFA	Clinic ALL		Clinic w/o physio
	Audited	No. of doctors	No. of support staff
353	353		4
165	165	1	4
165	165	3	1
301	301	2	2
120	120	1	1
167	167	2	6
397	397	2	9
44.22	44.22	0.7	0.7
570.24	570.24	1.3	11.9
193	0		
245	245	2	4
275	275	1	3
0	0		
109	109	1	1
121	0		
147	147	2	1
122	122	1	3
197	0		
163	163	1	4
74	0		
164	0		
79	79	2	1
4754.46	3422.16	22.88	56.54

Renal Clinic: Operates 4 Hrs in the morning & 4 Hrs in the afternoon

0.33 % outpatients
0.66 % outpatients

No. of support staff for all GFA
No. of theoretical cons. Suites

79 GFA per 1 support staff
31.9091275 GFA per specialist
383.54 Average suite size, sqm
300.54

60.531659

149

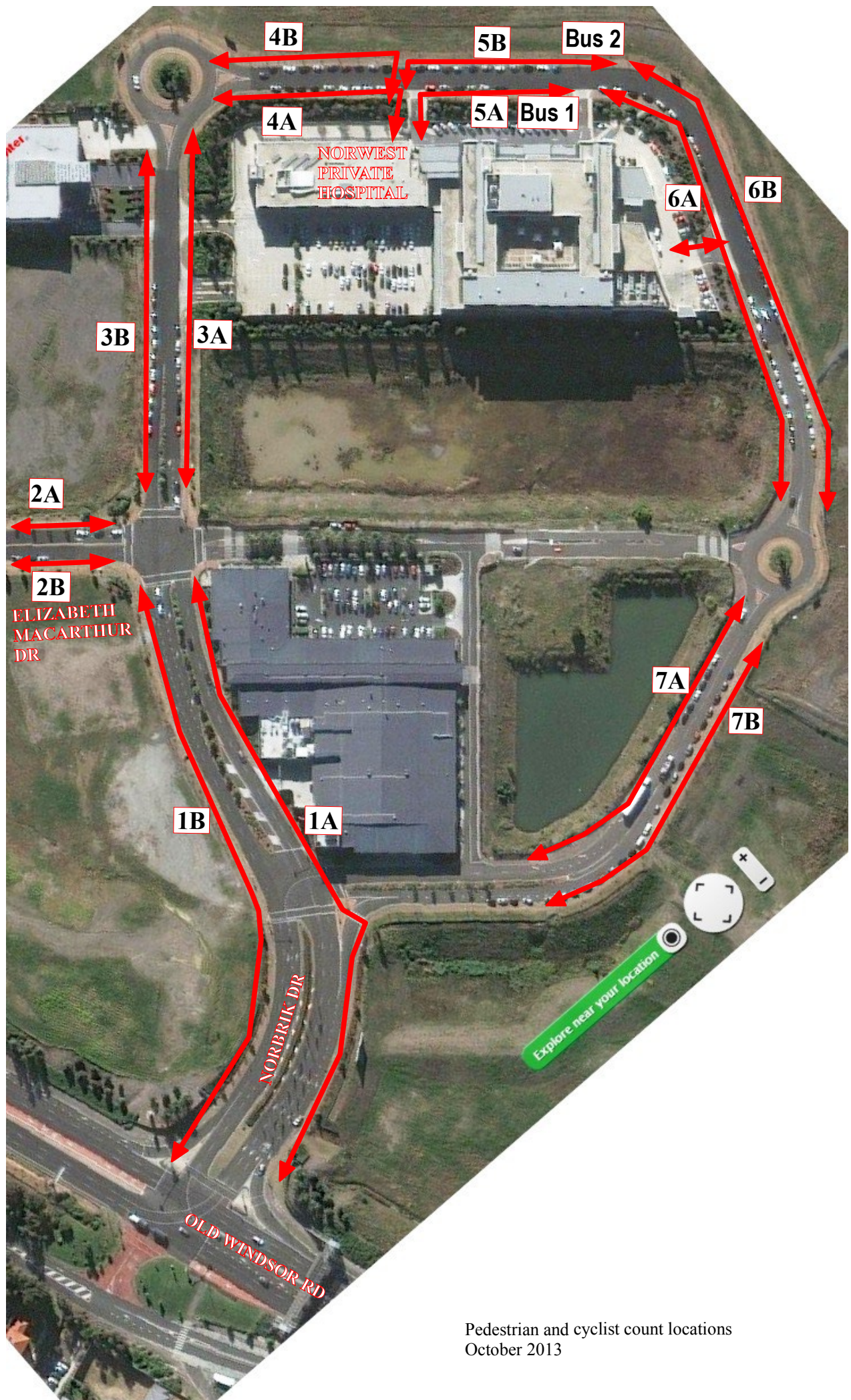
2.46152183

209.157273

The number of staff by category was counted in each medical suite at peak attendance times on two non-consecutive weekdays. These numbers were then averaged.
Yellow boxes indicate vacant suites.

Appendix C.
Results of surveys of pedestrian, bus passenger and bicycle movements.





Pedestrian and cyclist count locations
October 2013

DAY	Thursday																			
LOCATION	Norwest Private Hospital																			
WEATHER	Fine																			
OBSERVERS																				

FROM	TO	PEDESTRIANS TO HOSPITAL																		TOTAL
		1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B	7A	7B	TOTAL	BUS 1	BUS 2	TOTAL	
6:00	- 6:15	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
6:15	- 6:30	0	1	0	1	1	1	0	0	0	0	0	0	0	0	4	0	1	1	5
6:30	- 6:45	0	1	0	0	2	0	0	0	0	0	0	0	0	0	3	0	0	0	3
6:45	- 7:00	2	0	2	0	4	4	1	0	0	0	0	0	0	0	13	1	0	1	14
7:00	- 7:15	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	1	0	1	3
7:15	- 7:30	0	0	0	1	4	0	2	1	0	0	0	0	0	0	8	2	0	2	10
7:30	- 7:45	0	0	2	0	2	1	1	0	1	0	0	0	0	0	7	0	0	0	7
7:45	- 8:00	0	1	1	1	2	1	0	1	1	0	0	0	0	0	8	0	0	0	8
8:00	- 8:15	0	0	1	1	6	1	0	0	1	0	0	0	0	0	10	1	0	1	11
8:15	- 8:30	2	0	0	0	8	5	0	0	0	0	0	0	0	0	15	1	0	1	16
8:30	- 8:45	0	1	0	2	4	1	1	0	1	0	0	0	0	0	10	0	0	0	10
8:45	- 9:00	0	0	1	2	4	2	0	0	0	0	1	0	0	0	10	1	0	1	11
9:00	- 9:15	0	0	2	2	8	0	0	0	0	0	0	0	0	0	12	0	1	1	13
9:15	- 9:30	0	0	0	0	11	1	0	0	1	0	0	0	0	0	13	0	1	1	14
9:30	- 9:45	0	0	1	0	5	1	2	0	0	0	0	0	0	0	9	1	0	1	10
9:45	- 10:00	0	0	0	0	6	0	1	0	0	0	0	0	0	0	7	0	0	0	7
TOTAL		5	4	0	11	68	18	8	2	5	0	1	0	0	0	132	8	3	11	143

FROM	TO	PEDESTRIANS FROM HOSPITAL																		TOTAL
		1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B	7A	7B	TOTAL	BUS 1	BUS 2	TOTAL	
6:00	- 6:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15	- 6:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30	- 6:45	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	2
6:45	- 7:00	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1
7:00	- 7:15	1	1	0	0	1	0	0	0	0	0	0	0	0	0	3	0	1	1	4
7:15	- 7:30	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
7:30	- 7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	- 8:00	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
8:00	- 8:15	1	0	0	1	3	0	0	0	0	0	0	0	0	0	5	0	0	0	5
8:15	- 8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	- 8:45	3	0	0	4	1	0	0	0	0	0	0	0	0	0	8	0	2	2	10
8:45	- 9:00	0	0	0	0	3	1	1	0	1	0	0	0	0	0	6	0	0	0	6
9:00	- 9:15	0	0	0	0	3	2	2	0	0	0	0	0	0	0	7	0	1	1	8
9:15	- 9:30	0	0	0	1	2	2	0	0	0	0	0	0	0	0	5	0	0	0	5
9:30	- 9:45	0	0	0	3	4	0	0	0	0	0	0	0	0	0	7	0	0	0	7
9:45	- 10:00	0	0	0	0	4	1	0	0	0	0	0	0	0	0	5	0	1	1	6
TOTAL		7	1	0	10	22	6	3	1	1	0	0	0	0	0	52	0	5	5	57

DATE	#####																
DAY	Thursday																
LOCATION	Norwest Private Hospital																
WEATHER	Fine																
OBSERVERS																	

FROM		TO	BICYCLES TO HOSPITAL														TOTAL
			1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B	7A	7B	
6:00	-	6:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15	-	6:30	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2
6:30	-	6:45	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
6:45	-	7:00	0	0	0	1	0	1	0	0	0	0	0	0	0	0	2
7:00	-	7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	-	7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	-	7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	-	8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	-	8:15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
8:15	-	8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	-	8:45	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
8:45	-	9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00	-	9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15	-	9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30	-	9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45	-	10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL			0	1	2	2	1	1	0	0	0	0	0	0	0	0	7

FROM		TO	BICYCLES FROM HOSPITAL														TOTAL
			1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B	7A	7B	
6:00	-	6:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15	-	6:30	0	1	0	0	0	0	0	1	0	1	0	1	0	0	4
6:30	-	6:45	0	0	1	1	0	1	0	0	0	0	0	0	0	0	3
6:45	-	7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00	-	7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	-	7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	-	7:45	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2
7:45	-	8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	-	8:15	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:15	-	8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	-	8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	-	9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00	-	9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15	-	9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30	-	9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45	-	10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL			0	2	1	3	0	1	0	1	0	1	0	1	0	0	10

DATE	9/10/2013																			
DAY	Wednesday																			
LOCATION	Norwest Private Hospital																			
WEATHER	Fine																			
OBSERVERS																				

FROM	TO	PEDESTRIANS TO HOSPITAL																		TOTAL
		1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B	7A	7B	TOTAL	BUS 1	BUS 2	TOTAL	
15:00	- 15:15	1	0	1	2	3	1	0	0	2	2	0	0	0	0	12	0	2	2	14
15:15	- 15:30	0	0	0	1	4	2	3	0	0	1	1	0	0	0	12	0	0	0	12
15:30	- 15:45	0	0	1	0	0	1	3	0	0	0	1	0	0	0	6	0	0	0	6
15:45	- 16:00	0	0	0	0	3	5	1	1	0	0	0	1	0	0	11	4	3	7	18
16:00	- 16:15	0	0	0	1	0	0	2	0	1	1	3	1	0	0	9	3	1	4	13
16:15	- 16:30	1	2	1	1	3	1	0	0	2	0	0	0	0	0	11	2	4	6	17
16:30	- 16:45	0	0	0	1	1	0	0	0	2	0	0	0	0	0	4	3	0	3	7
16:45	- 17:00	0	0	0	0	0	0	1	0	2	0	0	0	0	0	3	4	2	6	9
17:00	- 17:15	0	0	0	0	1	0	1	3	4	2	0	0	0	0	11	0	3	3	14
17:15	- 17:30	0	0	0	0	0	0	1	2	3	1	0	0	0	0	7	2	2	4	11
17:30	- 17:45	0	1	0	1	0	3	0	0	0	0	0	0	0	0	5	0	3	3	8
17:45	- 18:00	0	0	0	0	5	0	0	0	2	1	2	1	0	0	11	2	2	4	15
TOTAL		2	3	3	7	20	13	12	6	18	8	7	3	0	0	102	20	22	42	144

FROM	TO	PEDESTRIANS FROM HOSPITAL																		TOTAL
		1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B	7A	7B	TOTAL	BUS 1	BUS 2	TOTAL	
15:00	- 15:15	0	1	1	0	3	2	3	1	0	1	0	0	0	0	12	0	0	0	12
15:15	- 15:30	0	0	0	0	3	1	2	0	0	0	0	0	0	0	6	0	0	0	6
15:30	- 15:45	0	0	1	1	3	4	0	0	0	2	0	1	0	0	12	0	0	0	12
15:45	- 16:00	0	0	4	1	2	2	3	2	0	0	0	0	0	0	14	2	2	4	18
16:00	- 16:15	0	1	2	1	5	5	0	1	0	0	4	2	0	0	21	3	1	4	25
16:15	- 16:30	1	1	2	1	3	3	0	0	3	0	0	0	0	0	14	4	2	6	20
16:30	- 16:45	0	1	0	0	7	0	3	0	3	0	0	0	0	0	14	3	0	3	17
16:45	- 17:00	0	0	0	0	2	0	0	2	3	0	1	0	0	0	8	2	3	5	13
17:00	- 17:15	0	0	0	0	2	2	1	1	3	3	0	0	0	0	12	0	4	4	16
17:15	- 17:30	1	0	0	2	3	0	0	0	2	2	0	0	0	0	10	5	5	10	20
17:30	- 17:45	0	0	0	2	0	0	0	0	2	0	0	0	0	0	4	0	2	2	6
17:45	- 18:00	0	1	0	0	4	2	0	0	1	0	0	0	0	0	8	2	4	6	14
TOTAL		2	5	10	8	37	21	12	7	17	8	5	3	0	0	135	21	23	44	179

HOURLY COUNTS

15:00	- 16:00	0	1	6	2	11	9	8	3	0	3	0	1	0	0	44	2	2	4	48
15:15	- 16:15	0	1	7	3	13	12	5	3	0	2	4	3	0	0	53	5	3	8	61
15:30	- 16:30	1	2	9	4	13	14	3	3	3	2	4	3	0	0	61	9	5	14	75
15:45	- 16:45	1	3	8	3	17	10	6	3	6	0	4	2	0	0	63	12	5	17	80
16:00	- 17:00	1	3	4	2	17	8	3	3	9	0	5	2	0	0	57	12	6	18	75
16:15	- 17:15	1	2	2	1	14	5	4	3	12	3	1	0	0	0	48	9	9	18	66
16:30	- 17:30	1	1	0	2	14	2	4	3	11	5	1	0	0	0	44	10	12	22	66
16:45	- 17:45	1	0	0	4	7	2	1	3	10	5	1	0	0	0	34	7	14	21	55
17:00	- 18:00	1	1	0	4	9	4	1	1	8	5	0	0	0	0	34	7	15	22	56

FROM		TO	BICYCLES TO HOSPITAL														TOTAL
			1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B	7A	7B	
15:00	-	15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15:15	-	15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15:30	-	15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15:45	-	16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
16:00	-	16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
16:15	-	16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
16:30	-	16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
16:45	-	17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
17:00	-	17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
17:15	-	17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
17:30	-	17:45	1	0	0	2	0	2	0	0	0	0	0	0	0	5	
17:45	-	18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL			1	0	0	2	0	2	0	0	0	0	0	0	0	5	

[illegible]

Appendix D.
Bus route maps.



 Rail line
 Railway station
 Bus route/suburb
 Bus/Rail interchange
 Diagrammatic Map - Not to Scale

Diagrammatic Map - Not to Scale



Route
616X

Bus Route Map



Base Map: UBD DG08/01

Stopping pattern

- Stops at all stops
 - Express
 - Bus stops
- The same stopping pattern applies in both directions.

Route

Stop location

Kellyville Ridge

M2 - Oakes Rd Bus Station

City - Wynyard

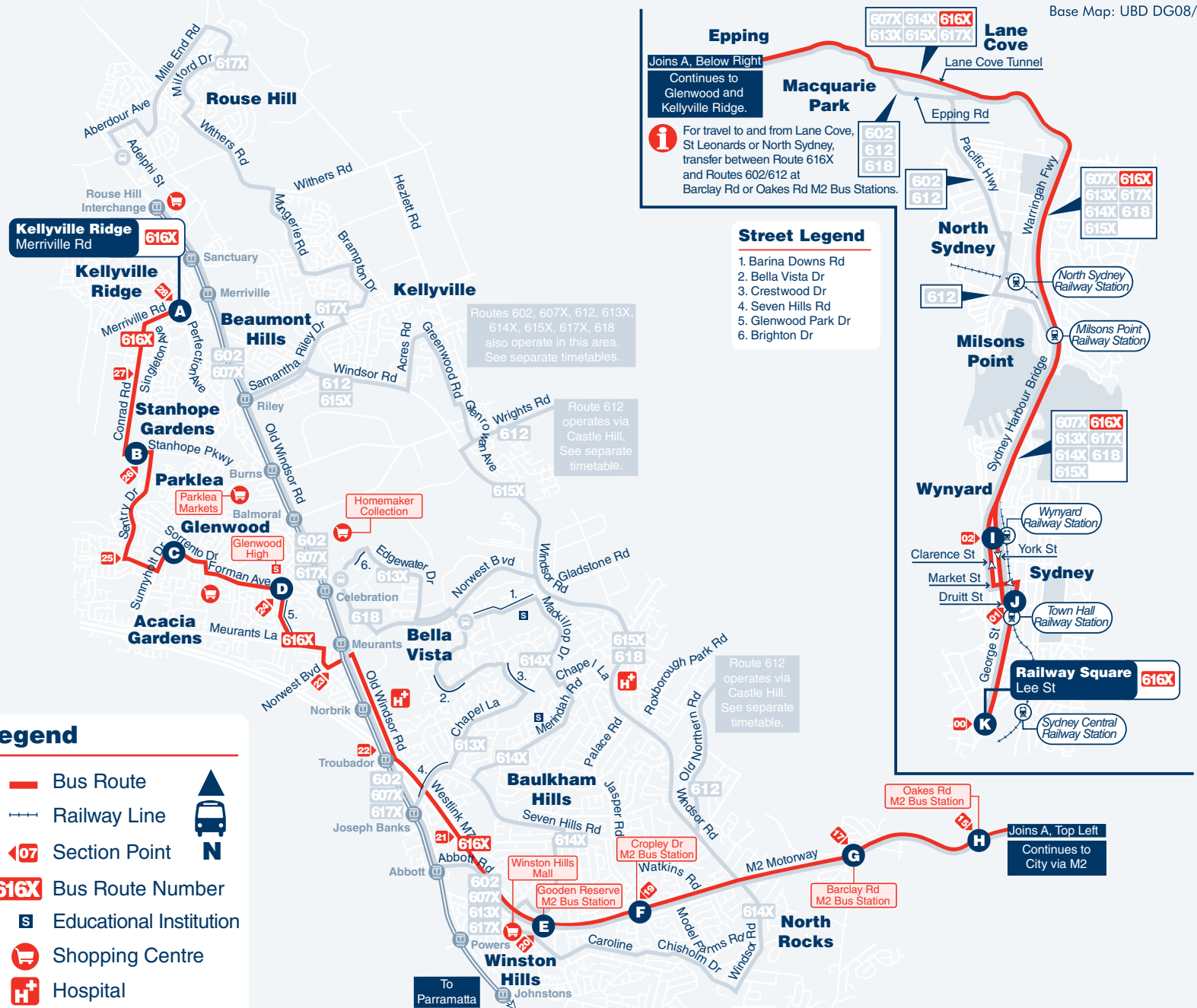
City - Railway Square

Section Point Legend

- Bus Route 616X
- 00 Railway Square
- 01 Queen Victoria Building
- 02 Wynyard
- 15 M2-Oakes Rd Bus Station
- 17 M2-Barclay Rd Bus Station
- 19 M2-Cropley Dr Bus Station
- 20 M2-Gooden Reserve Bus Station
- 21 M7 Entrance & M2 Exit
- 22 Troubador T-way
- 23 Norwest Bvd & Greenhill Dr
- 24 Glenwood Park Dr & Ridge St
- 25 Sentry Dr & Quakers Hill Pwy
- 26 Stanhope Village
- 27 Conrad Rd & Adriatic Rd
- 28 Merriville Rd & Perfection Ave

Legend

- Bus Route
- Railway Line
- Section Point
- 616X Bus Route Number
- Educational Institution
- Shopping Centre
- Hospital





Route
602

Bus Route Map

hillsbus
a member of Confindere Catchage Pty Ltd

Legend

- Bus Route
- Railway Line
- Section Point
- 602 Bus Route Number
- Educational Institution
- Shopping Centre
- Hospital



Rouse Hill
Town Centre

602

Rouse Hill

Rouse Hill Interchange

Schofields Rd

Kellyville Ridge

Merriville Rd

602

Stanhope Gardens

Parklea

Parklea Markets

Glenwood

Sunnyholt Rd

Kellyville

Windsor Rd

Norwest Bvd

Bella Vista

Baulkham Hills

Seven Hills Rd

Winston Hills

Johnstons

To
Parramatta

Lane Cove

Epping Rd

Longueville Rd

Pacific Hwy

St Leonards

Crows Nest

North Sydney

North Sydney
Railway Station

602

Sydney

Town Hall
Railway Station

Central
Railway Station

Route 602 - Stopping Locations - Stops at all stops to Oakes Road (M2), then only at Riverside Corporate Park (Epping Rd/Pittwater Rd), Lane Cove West Business Park (Epping Rd/Sam Johnson Way) Lane Cove (Epping/Longueville Road), Pacific Hwy/Hotham Parade, Pacific Hwy/Campbell St, Gore Hill (for TAFE and RNSH), St Leonards Station, Crows Nest (Pacific Hwy/Falcon St) and North Sydney.

Route 612 operates via Castle Hill. See separate timetable.

Joins A, Top Left

Continues to North Sydney via M2, Delhi Rd, Epping Rd & Pacific Hwy

Section Point Legend

- Bus Route 602
- 03 North Sydney Station
- 04 North Sydney
- 05 St Leonards
- 06 Pacific Hwy & Campbell St
- 07 Epping & Longueville Rds
- 08 Epping Rd & Johnston Cr
- 09 Lane Cove River
- 10 Epping & Delhi Rds
- 15 M2-Oakes Rd Bus Station
- 17 M2-Barclay Rd Bus Station
- 19 M2-Cropley Dr Bus Station
- 20 M2-Gooden Reserve Bus Station
- 21 Abbott T-way
- 22 Troubador T-way
- 23 Meurants T-way
- 24 Balmoral T-way
- 25 Riley T-way
- 26 Merriville T-way
- 27 Rouse Hill Town Centre

Route 745 St Marys Station to Castle Hill

Bus travels from St Marys Station (as shown on main map) and then as route shown on this map.

