TRAFFIC, ENVIRONMENTAL & FORENSIC ENGINEERS
TEF CONSULTING

PO Box 215 Bondi NSW 2026
Phone (02) 9332 2024 / (02) 9523 9212
Fax (02) 9332 2022
Mobile 0414 978 067 / 0414 554 523
e-mail o.s@tefconsult.com.au / s.s@tefconsult.com.au
www http://tefconsult.com.au

A TRANSPORT AND ACESSIBILITY

REPORT

NORWEST PRIVATE HOSPITAL

PROPOSED NEW WING

7-11 NORBRIK DRIVE, BELLA VISTA

Prepared for

Healthscope Ltd

By

O.I. Sannikov

TEF Consulting

Report Document Control

Title	A transport and accessibility report – proposed new wing – 7-11 Norbrik Drive, Bella Vista - 7-11 NORBRIK DRIVE, BELLA VISTA
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Author(s)	O.I. Sannikov
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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).

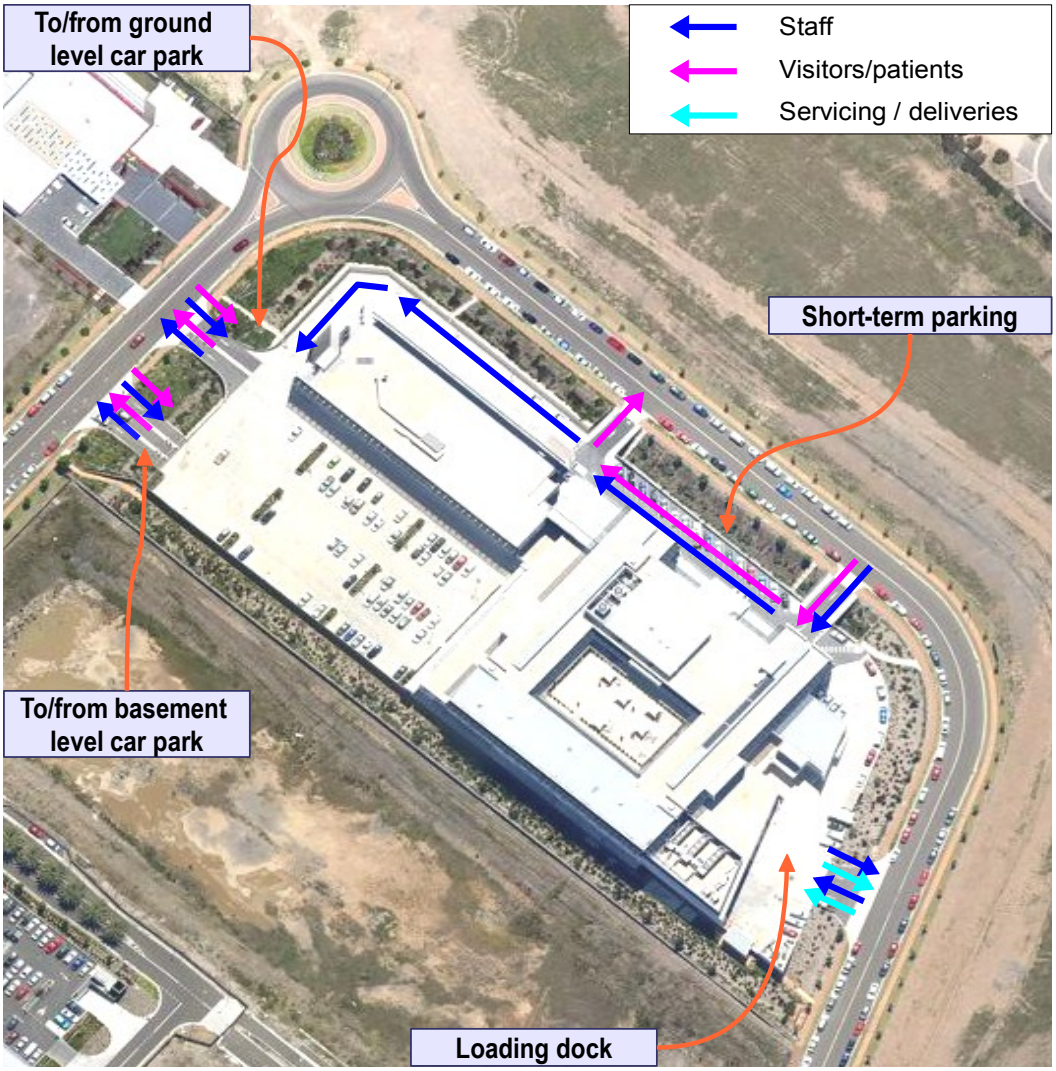

Figure 3. Existing access arrangements.

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 m^2 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 m^2
	• Sizes of individual suites to be confirmed during pre-sale
	◦ Assumed to be similar to the average existing (149 m^2 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 (HDCP) Part C Section 1 Parking

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 m^2 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 m^2 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.

	The Hills DCP 2012				
Existing	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**
				Number of additional spaces required		**(3)**
				Additional spaces provided		**6**
				Surplus parking provision		**9**

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**

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 (on site) + 130 (on street) = 550 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

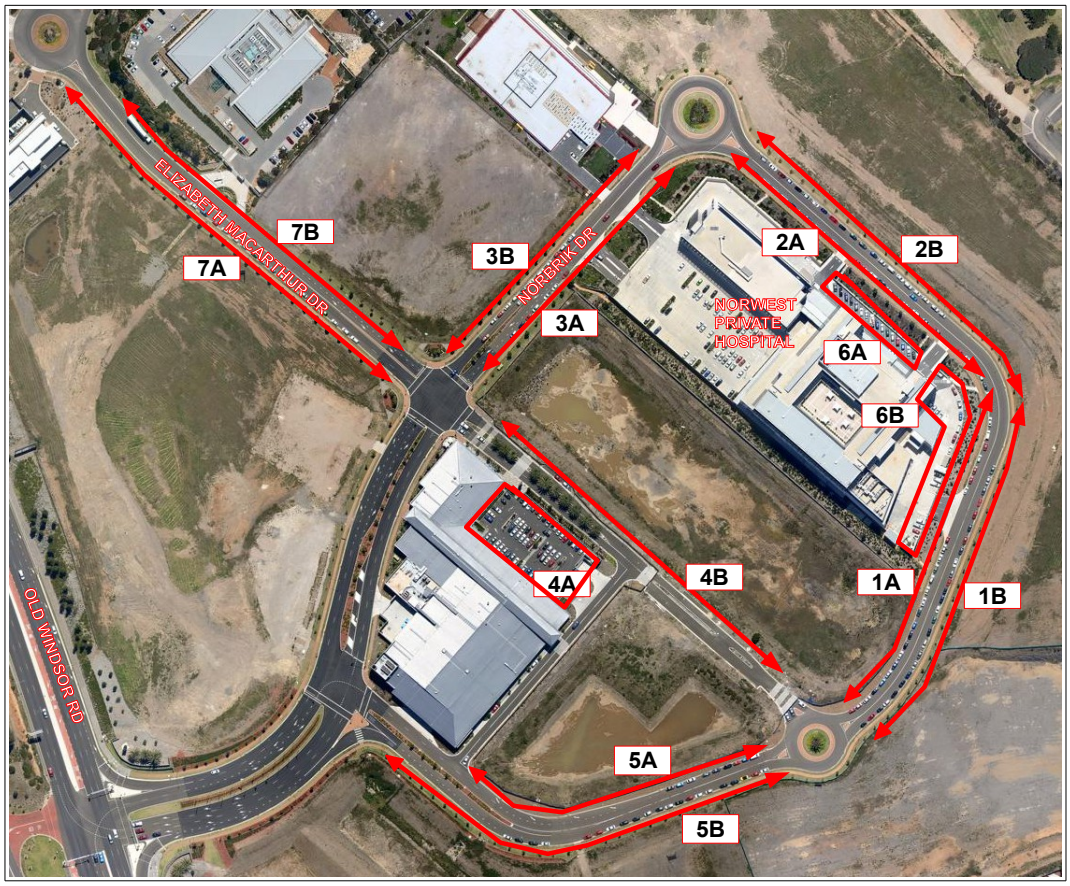

Figure 4. Parking accumulation survey areas.

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

	Number of parked cars				
	Parking Location				
	Basement level		Ground Level		
Time	**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.

	Number of parked cars													
	Parking Location													
Time	**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 brining 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. ◦ The hospital will continue to be self-sufficient in terms of car parking provision and will continue to comply with Council's DCP requirements.
Reason for existing parking surplus	◦ 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 vivinity 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. ◦ NPB 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 that 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 (Norbrick 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.