

Wahroonga Estate

Civil Engineering Utilities Report



Date: 28 August 2008

Report No: 5001-AA001545

Hyder Consulting Pty Ltd

ABN 76 104 485 289

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Wahroonga Estate

Civil Engineering Utilities Report

Author: Michael Guinane

Checker: Greg Ives

Approver: Stephen Taylor

Report no: 5001-AA001545

Revision 3

Date: 28 August 2008

This report has been prepared for Johnson Property Group on behalf of the Department of Planning in accordance with the terms and conditions of appointment for Civil Engineering Utilities Report. Hyder Consulting Pty Ltd (ABN 76 104 485 289) cannot accept any responsibility for any use of or reliance on the contents of this report by any third party.

This report is based upon a desktop review and relies upon information supplied by utility providers and Council. To the extent that the report incorporates such material, Hyder takes no responsibility for any loss or damage caused by any error or omission arising from reliance on it.

Please note that utility providers reserve the right to change their decision in relation to network deployment within the development without prior notice. Additionally it is our experience that utility providers will not reserve capacity. For this reason, they operate on a first come first serve basis.

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1 Introduction

Hyder Consulting Pty Ltd has been engaged by Johnson Property Group to undertake a service investigation report for the Wahroonga Estate located off Fox Valley Road, hereafter referred to as the site.

This report details the following civil infrastructure items:

General Services:

- Locations of existing services and the likely connection points to supply the site
- Potential service upgrades required to ensure adequate capacity for the site
- Timing of service upgrades
- Land requirements - location of major service infrastructure requiring dedication of land
- Letters/correspondence confirming availability of supply

1.1 Locality

The site is located in the Ku-ring-gai and Hornsby Council local government area north of the intersection at Comenarra Parkway Fox Valley Road. Refer attached SKC001 in Appendix A. The site has a combined area of approximately 65 ha, not including roads and is proposed to be redeveloped to incorporate a number of mixed uses including residential, retirement community, church and hospital.

The precincts east of Coups Creek have access off Fox Valley Road whilst the precincts west of Coups Creek have access off Mt Pleasant Avenue.

2 General Services

The following asset owners are located within the vicinity of the site and/or surrounding road reserves:

- Sewer - Sydney Water
- Water - Sydney Water
- Gas - Agility
- Electrical - Energy Australia
- Telecommunications - Telstra

Responses supplied by Utility providers to date have been based on a previous layout and area schedule which has subsequently been revised, as shown in Appendix E. Typically any change to the proposed development, e.g. the development description or the plan/site layout, may alter the requirements when a new application is submitted. However, as the advice provided is generic, based on the overall development scheme and would be subject to confirmation following detailed design, the advice is still applicable for the concept stage.

2.1 Sewer

The site is located in the East West Lane Cove waste water system and is currently serviced from a number of sewer mains as indicated below:

- The Hospital is currently serviced by the 400mm diameter carrier main which drains south along Coups Creek.
- The precincts west of Coups Creek are currently serviced by a number of 150mm diameter lines that connect into a 225mm diameter main which drains south along Lane Cover River and connects into the 400mm diameter Carrier at the junction of Coups Creek and Lane Cover River.
- The precincts east of Fox Valley Road are currently serviced by a number of 150mm diameter lines which drain east toward Browns Field then south towards Lane Cove River.

Developer Servicing Plan (DSP) charges are applicable and will be levied by Sydney Water based on Pure Net Hectare (which approximately equates to developable area). The DSP charges for the site are additional to the cost of the external reticulation works. The site is located within the East West Lane Cove wastewater system. *Sydney Water will only provide advice on DSP charges upon lodgement of more detailed subdivision and development plans showing lot areas for residential developments and proposed flows for commercial, industrial and special uses developments within the subject site.*

Sydney Water DSP charges available online

<http://www.sydneywater.com.au/BuildingDevelopingandPlumbing/Developi>



[ngYourLand/DeveloperServicingPlans.cfm](#) and are based on the 2005/06 financial year. The final charges will be subject to an annual adjustment in line with movements in the consumer price index and require confirmation from Sydney Water. Refer Appendix D for extract of applicable charges.

DSP charges provided online for this area have been revised to \$0.00 per Pure Net Hectare for residential, commercial and industrial. Sydney Water planners have advised that the charges were revised to \$0.00 as the area has been heavily developed and there is substantial existing infrastructure in the area. Hence, major infrastructure costs attributed to DSP's in this catchment area have already been recovered. It should be noted that the impact of the development on down stream assets are not as yet included in the current modelling or DSP charges and additional charges may be applicable.

Sydney Water have formalised a response to the feasibility application indicating that the wastewater system does not have sufficient capacity to cater for the proposed development. Hence, there is a requirement to upgrade/duplicate existing sewers to ensure that there is sufficient capacity in the local sewers.

Sewer sizes and connections from the various precincts are shown in Appendix C.

2.2 Water

The site is located within the Wahroonga water supply system. Water Infrastructure in the area consists of:

- 1200mm diameter Steel Cement Lined (SCL) main traversing the site in an east west direction. Refer attached SKC003 in Appendix A.
- 200 diameter Cast Iron Cement Lined (CICL) main running along the eastern side of Fox Valley Road tapering to a 150mm diameter CICL main. Refer attached SKC003 in Appendix A;
- 150mm diameter CICL main running along the centre of Fox Valley Road. Refer attached SKC003 in Appendix A; and
- 150mm diameter CICL main running along the northern side of Mount Pleasant Road. Refer attached SKC003 in Appendix A;

Developer Servicing Plan (DSP) charges are applicable and will be levied by Sydney Water based on Pure Net Hectare (which approximately equates to developable area). The DSP charges for the site are additional to the cost of the external reticulation works. The site is located within the Wahroonga water system. *Sydney Water will only provide advice on DSP charges upon lodgement of more detailed subdivision and development plans showing lot areas for residential developments and proposed flows for commercial, industrial and special uses developments within the subject site.*



Sydney Water DSP charges available online

<http://www.sydneywater.com.au/BuildingDevelopingandPlumbing/DevelopingYourLand/DeveloperServicingPlans.cfm> and are based on the 2005/06 financial year. The final charges will be subject to an annual adjustment in line with movements in the consumer price index and require confirmation from Sydney Water. Refer Appendix D for extract of applicable charges.

DSP charges are applicable and will be levied by Sydney Water based on Pure Net Hectare (which approximately equates to developable area). The DSP charges for the site are additional to the cost of the external reticulation works. The site is located within the Wahroonga water system, Developer Servicing Plan (DSP) charges for this area have been revised to \$311 per Pure Net Hectare for low density residential, \$5,998 per Pure Net Hectare for commercial and \$8,817 per Pure Net Hectare for industrial.

Sydney Water have formalised a response to the feasibility application indicating that the water system does not have sufficient capacity to cater for the proposed development. Hence, there is a requirement to upgrade existing mains to ensure that there is sufficient capacity.

Water main sizes and connections are shown in Appendix C.

2.3 Gas

Gas infrastructure in the area consists of:

- 100mm diameter high pressure secondary main (1050 kPa) at the corner of Fox Valley Road and Comenarra Parkway. Refer attached sketch SKC004 in Appendix A.
- 75mm diameter medium pressure nylon main (210 kPa) running along the eastern side of Fox Valley Road. Refer attached sketch SKC004 in Appendix A.
- 32mm diameter medium pressure nylon main (210 kPa) running along the southern side of Mt Pleasant Avenue. Refer attached sketch SKC004 in Appendix A.

Neil Hilton from Alinta Assets Management has indicated via email on 23 May 2008 that, the eastern precincts (including the hospital) have the ability to be serviced either by the medium pressure main in Fox Valley Road or the high pressure main in Comenarra Parkway. The high pressure network may be utilised for steam boilers or cogeneration. The north-western precincts have the ability to be serviced by the medium pressure main in Mt Pleasant. At this stage there are no major supply constraints in the area, however, Alinta do not reserve capacity.

Associated costs can be provided once actual loads and consumers are identified.

2.4 Electricity

John Dawson from Energy Australia area planning has confirmed via email on 10 June 2008 that, the area is principally serviced by the Turramurra zone substation (Turramurra Ave) which is near full capacity. However, Energy Australia currently have projects in development to increase capacity at Turramurra zone substation, Pymble zone substation and St Ives zone substation with tentative completion schedules ranging from 2010 to 2012.

John Dawson further advised that to service the completed development there would be a requirement for at least one new 11kV feeder which may need to connect to one of the above zone substations. The timing of the construction of this feeder will be dependent on the staging and rate of development. It is our experience that for essential services such as Hospitals cross feeder ties to substations are often required for network security and switching flexibility.

The developer will be required to fund connection from the site to the existing zone substation. The connection to the site will be via underground feeder. Refer attached SKC005 in Appendix A.

The developer will be required to supply the 11kV feeder, distribution kiosk/substation, low voltage distribution cables and street lighting. The cost and method of supply for the development will depend on the final electrical load requirement. An application for Load Connection should be submitted to Energy Australia prior to making any financial commitments.

2.5 Telecommunications

Telecommunications Infrastructure in the area consists of:

- Optical fibre currently running along Fox Valley Road and Mt Pleasant Avenue servicing the hospital and surrounding residents. Refer attached SKC006 in Appendix A;
- Local cable currently running along Fox Valley Road and Mt Pleasant Avenue servicing the hospital and surrounding residents. Refer attached SKC006 in Appendix A;

Kenneth Liu from Telstra area planning has indicated via email on 19 May 2008 that, the existing network is currently not sufficient to meet the likely demand of the proposed development. However, he further advised that service to the site will be supplied when required.

To accommodate the proposed redevelopment, the telecommunications network would require upgrade. To achieve this, Telstra may require:

- Upgrading the conduit network along Fox Valley Road and Comenarra Parkway;
- Hauling new copper cable and optical fibre cable to the site from the north along Fox Valley Road.



The technology and services provided would be determined closer to the time of development commencement, depending on Telstra deployment policy and any negotiations based on a commercial agreement.

Further discussions regarding details for network expansion are strongly encouraged once detailed planning for the development is in progress. Telstra has been informed of this development through the Telstra Smart Community website: <http://www.telstrasmartcommunity.com>.



Appendix A

Drawings

- SKC001 - Locality Plan
- SKC002 - Sewer Plan
- SKC003 - Water Plan
- SKC004 - Gas Plan
- SKC005 - Electricity Plan
- SKC006 - Telstra Plan
- SKC011 - Typical Sections



Appendix B

Photographs



Photograph B.001 -- Above ground electrical cables in Fox Valley Road



Photograph B.002 - Electrical cables in Fox Valley Road verge-



Photograph B.003 - Telecommunications in Fox Valley Road verge-



Photograph B.004 - Water main in Fox Valley Roadway-



Photograph B.005 - Gas main in Fox Valley Road verge-



Photograph B.006 - Mt Pleasant Roadway-



Appendix C

Correspondence

Sydney Water Correspondence [5 page(s)]

Alinta Correspondence [1 page(s)]

Energy Australia Correspondence [5 page(s)]

Telstra Correspondence [2 page(s)]



Sydney Water

Case number 112031 - attached



Case Number: **112031**

11 July 2008

Hyder Consulting Pty Ltd

c/- Michael Bell & Partners Pty Ltd

FEASIBILITY LETTER

Developer: Hyder Consulting Pty Ltd

Your reference: 08099

Development: Sydney Adventist Hospital, Fox Valley Road, Wahroonga

Development Description: Re-development of the Sydney Adventist Hospital Site

Your application date: 2nd June 2008

Dear Applicant

This Feasibility Letter (Letter) is a guide only. It provides general information about what Sydney Water's requirements could be if you applied to us for a Section 73 Certificate (Certificate) for your proposed development. **The information is accurate at today's date only.**

If you obtain development consent for that development from your consent authority (this is usually your local Council) they will require you to apply to us for a Section 73 Certificate. You will need to submit a new application (and pay another application fee) to us for that Certificate by using your current or another Water Servicing Coordinator (Coordinator).

Sydney Water will then send you either a:

- Notice of Requirements (Notice) and Works Agreement (Agreement); or
- Certificate.

These documents will be the definitive statement of Sydney Water's requirements.

There may be changes in Sydney Water's requirements between the issue dates of this Letter and the Notice or Certificate. The changes may be:



1. Developer Charges

- (a) Adjustment of charges due to the Consumer Price Index (CPI);
- (b) Adjustment of charges because of a scheduled review by the Independent Pricing and Review Tribunal (IPART). After that review and registration of the new charges, Sydney Water has to apply those charges; or
- (c) If there is rezoning of any land within the development proposal then new charges will apply.

2. Reticulation Recovery Charges

These charges recover part of the cost of works that have been paid for by Sydney Water or other developers and that benefit your development. This charge has been made before your points of connection have been determined. If your completed designs show that your development will be connected to other main/s, the charge may be changed and/or you may need to construct other works.

Changing the Proposed Development

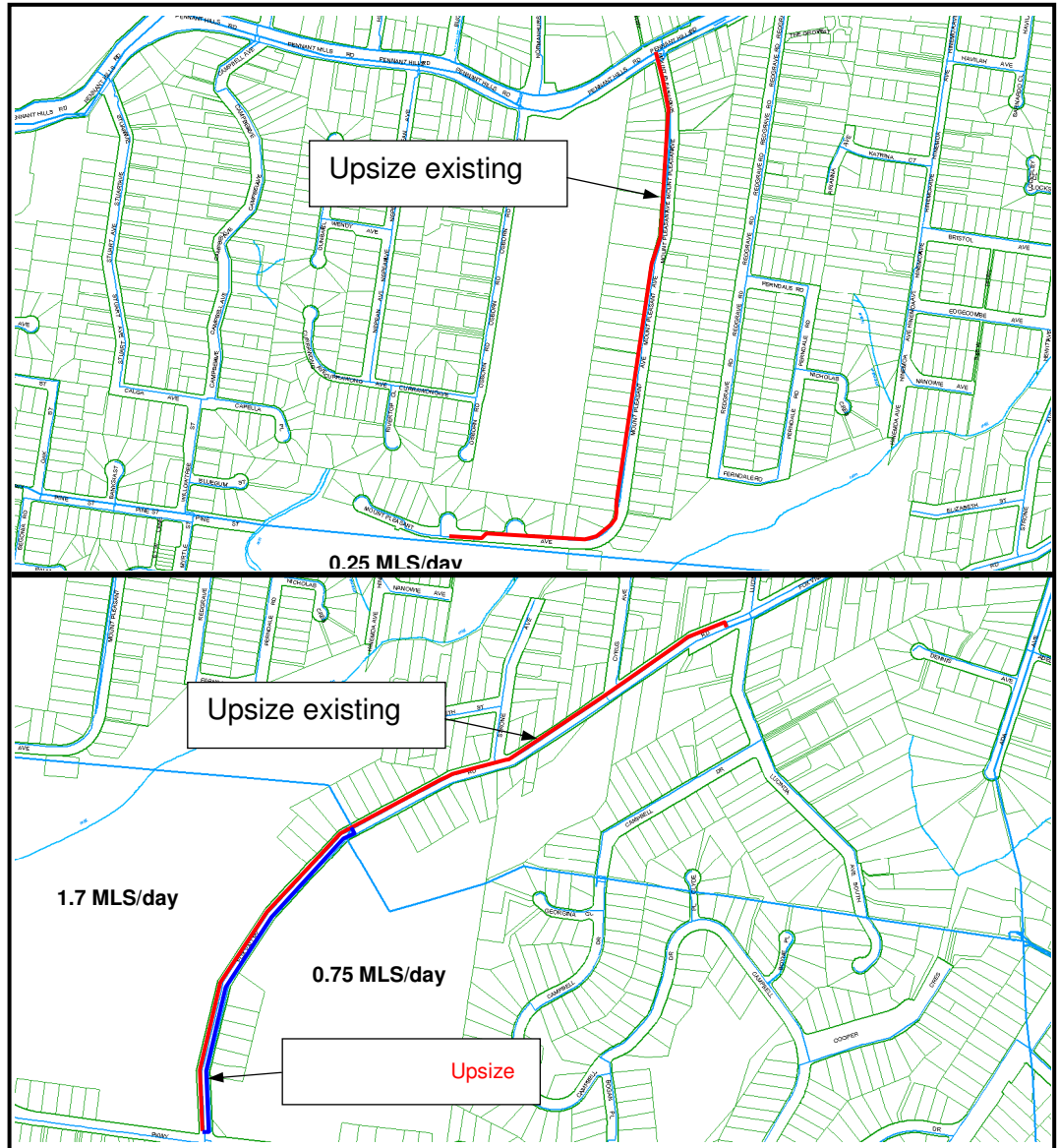
If you change your proposed development, e.g. the development description or the plan/site layout, after today, the requirements in this Letter could change when you submit your new application.

Also, if you decide to do your development in stages then you must submit a new application (and pay another application fee) for each stage.

You have made an application for specific information. Sydney Water's possible requirements are:

Water Information:

The local water system has insufficient capacity for the proposed development. The water main to be used for connection are as shown on the attached sketches on Page 3.

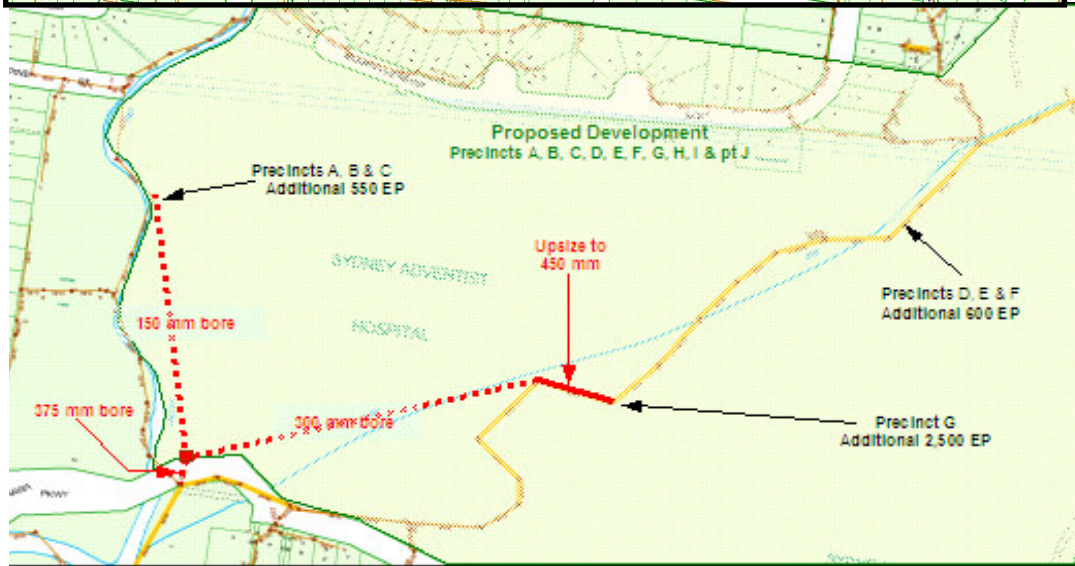
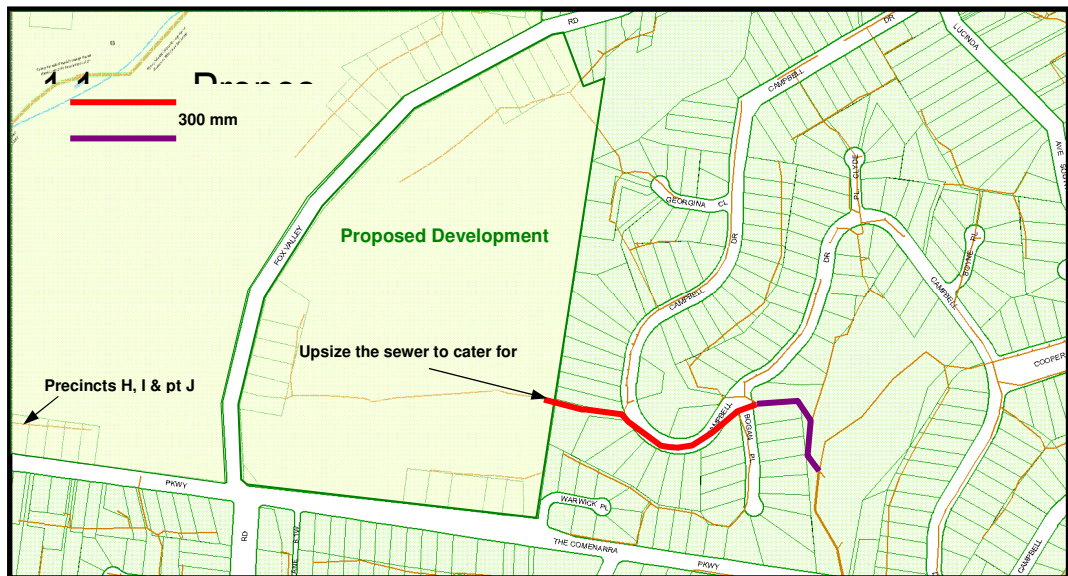


Sewer Information:

The wastewater system does not have sufficient capacity to cater for the proposed development. The applicant would need to upgrade/duplicate existing sewers to ensure that there is sufficient capacity in the local sewers.

Sewer sizes and connections from the various precincts are shown on the attached sketches on below.

The impact of these developments on down stream assets are not as yet included in the current modelling or DSP charges.





Developer Charges:

The proposed re-development site falls within the Wahroonga Water DSP Area and the East West Lane Cove Sewer DSP Area.

Sewer and Water DSP charges can only be advised upon lodgement of more detailed subdivision and development plans showing lot areas for residential developments and proposed flows for commercial, industrial and special uses developments within the subject site.

No warranties or assurances can be given about the suitability of this document or any of its provisions for any specific transaction. It does not constitute an approval from Sydney Water and to the extent that it is able, Sydney Water limits its liability to the reissue of this Letter or the return of your application fee. You should rely on your own independent



Alinta

From: Hilton, Neale [mailto:Neale.Hilton@alinta.net.au]
Sent: Friday, 23 May 2008 11:18 AM
To: Michael Guinane
Subject: Re: Wahroonga Estate - Gas Supply

I agree with your assessment.

Should your client wish to utilise natural gas and investigate costs, please make formal application through an Energy Retailer of your choice.

Neale Hilton
Alinta Asset Management
Level 15, 1 O'Connell St, SYDNEY NSW 2000 Locked Bag 5001,
ROYAL EXCHANGE NSW 1225
PH (02) 9270 4695 Fax (02) 9899 3571

From: Michael Guinane
Sent: Friday, 23 May 2008 10:17 AM
To: Neale Hilton
Subject: Wahroonga Estate - Gas Supply

Neale,

Based on our conversation on 22 May 2008 the below is my understanding of the serviceability of the site. We intend to report these findings to our client, prior to this could you please respond to this email at your earliest convenience confirming the below:

The eastern precincts (including the hospital) have the ability to be serviced either by the medium pressure main in Fox Valley road or the high pressure main in Comenarra Road. The high pressure network may be utilised for steam boilers or cogeneration. The north-western precincts have the ability to be serviced by the medium pressure main in Mt Pleasant. At this stage there are no major supply constraints in the area, however, Alinta do not reserve capacity. Alinta can provide associated costs once actual loads and consumers are identified.

Thanks,

Michael Guinane
BE Civil
Engineer

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Energy Australia

To ross.ward@wge.com.au
 cc
 Jonathan Hopson/NetSouth/energy Australia/AU bcc
 Subject Sydney Adventist Hospital Masterplan
 28/04/2008 03:29 PM

Ross,

As discussed, I write in response to the letter received from you dated 16 April regarding the Sydney Adventist Hospital site, Wahroonga.

The ratings and loadings on the existing substations are listed in the spreadsheet attached. In order to assess the ultimate requirements more fully, I will need more specific information as to which substations will accommodate which loads. This is due to there being several existing 11kV feeders in the area. I have started filling in the spreadsheet with the information above and that provided by you and I would be grateful if you would refine it prior to our HV planners commencing their work to determine the HV requirements.



Load Estimate 28-04-08.xls

Generally, I wish to advise that:

- There are currently 4 substations on the site (note that what you refer to as substation 1, we essentially know as substations 4 & 5). See the table below:

Number	Name	Your name	Nominal Transformer Nameplate Rating (kVA)	Nominal Transformer Cyclic Rating (A)	Estimated Existing Load (A)
S7241	Adventist Hospital No.2	Substation 2	750	1000	500
S7484	Adventist Hospital No.3	Substation 3	2 x 1500	4000 (note 1)	2900
S8337	Adventist Hospital No.4	Substation 1	1000	1400	800
S8338	Adventist Hospital No.5	""	1000	1400	950
		Substation 4			
		Substation 5			
		Substation 6			
		Substation 7			
		Substation 8			

Note 1 - Substation 3 is currently configured Non-Firm (ie no transformer redundancy). As such, both supplies from this substation must be cut in the event that either transformer fails or for maintenance, which is required every 3 years. If the hospital requires the substation be made Firm Rated, the capacity will reduce to 3000A.

- The area is principally supplied via our Turrumurra Zone substation (situated in Turrumurra Ave, Turrumurra) and this substation is nearing full capacity. However, we currently have projects in development to increase capacity at this substation and others in the area (Pymble Zone substation and St Ives Zone substation), with tentative completion schedules ranging from 2010 to 2012. These completion schedules may alter following a formal application from the developer and the overall works required may vary depending on the load applied for in your formal application.

- There would be a requirement for at least one new 11,000V cable to supply the development and these may need to connect to a Zone substation such as any of those mentioned above. The installation of these cables would likely be funded by the developer, with the works performed by the developers approved contractor. I cannot provide a costing as the work would be contestable and



therefore performed by the contractor selected by the developer.

I trust this information will be of assistance and I welcome any further enquiries or comments you may have. In the meantime, I await your response with the information in the format of the attached spreadsheet.

Regards,

Jonathan Hopson

Manager - Planning & Supply Negotiations - Sydney Outer North
EnergyAustralia

Level 1, Building 1, 51-59 Bridge Rd, Hornsby NSW 2077

P. 9477 8262

F. 9477 8220

M. 0438 325 875

jhopson@energy.com.au



Sydney Adventist Hospital

Loads and Capacity Schedule 28-04-08

Key:	Existing Capacity	New Capacity
	Existing Load	New Load

Stage	Years	Description	Estimated Loss Load (A @433)	Load (A @10500)	Substations / Capacities (A)									
					S7241	S7484	S8337	S8338	No.6	No.7	No.8	No.9	No.10	
Existing					1000	4000	1400	1400	4000	4000	400	5000??	3000	3000
Stage 0	2009	Refurb Tower block and other bldgs			500	2900	800	950						
Stage 1	2010	SAN 2 hospital, Nursing, Carpark	3.13	4173	170	?	?	?	3603	400				
Stage 2	2012	Refurb bldgs assoc with sub S7484									4987			
Stage 3	2015	Tower Extension	3.74	4987										
Stage 4	2016	Refurb Tower block												
Stage 5	2018	CSB Extension	2.13	2840									2840	
Stage 6	2019	New pool adj to tower												
Stage 7	2020	New sub-acute inpatient + carpark	2.35	3133	170	?	?	?						
Stage 8	2025	Refurb Tower admin												2963

TOTAL LOADS: 840A 2,900A 800A 950A 3,603A 400A 4,987A 2,840A 2,963A



From: Jonathan Hopson [mailto:jhopson@energy.com.au]
Sent: Monday, 26 May 2008 9:23 AM
To: Michael Guinane
Cc: John Dawson; ross.ward@wge.com.au
Subject: Re: FW: Wahroonga Estate - Electrical supply

Michael,

your application is under review John Dawson (p:9477 8286) will be looking after this project.

Regards,
Jonathan Hopson

Manager - Planning & Supply Negotiations - Sydney Outer North
EnergyAustralia

Level 1, Building 1, 51-59 Bridge Rd, Hornsby NSW 2077

P. 9477 8282
F. 9477 8220
M. 0438 325 875
jhopson@energy.com.au

From: Michael Guinane
Sent: Monday, 19 May 2008 11:56 AM
To: Jonathan Hopson
Cc: Wade Morris (wade.morris@jpg.net.au); Greg Ives
Subject: Wahroonga Estate - Electrical supply

Jonathon,

Hyder has been commissioned by the Johnson Property Group to undertake a due diligence investigation to identify the serviceability of the proposed redevelopment of Sydney Adventist Hospital and surrounding estate located near the corner of Comenarra Parkway and Fox Valley Road.

Please find attached the preliminary concept plan and area breakdown noting that the existing dwellings and floor space is highlighted in the comments column.

We appreciate the standard email response, however due to the nature of the redevelopment we also would like to request to meet and discuss the following at your earliest convenience:

1. Assess the availability and requirements for supply of services to the precinct. i.e. demand from the development, capacity of existing/surrounding network to supply development (cables/zone substation), likely connection points, timing of likely upgrades if required;
2. Identify existing infrastructure components i.e. Overhead Transmission Lines, Zone



substations;

3. Nominate preferred locations of any further key infrastructure components i.e. number/size of Kiosks;

4. Nominate a preferred route layout of services to the precinct i.e. Feeders;

If you could please respond to the above queries then we can initiate any further discussions prior to a formal application.

Kind Regards,

Michael Guinane

BE Civil

Engineer

Hyder Consulting Pty Ltd

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Web: www.hyderconsulting.com

Hyder is an international advisory and design consultancy

Please consider the environment - do you really need to print this email



Telstra

From: Liu, Kenneth C [mailto:Kenneth.Liu@team.telstra.com]
Sent: Monday, 19 May 2008 3:34 PM
To: Michael Guinane
Cc: Nietoski, Les P; McMahon, Gary R
Subject: RE: Wahroonga Estate - Telecommunications supply

Re: Wahroonga Estate (Redevelopment of Sydney Adventist Hospital and surrounding estate)

Dear Michael,

Based on the provided information relating to the proposed redevelopment of the Sydney Adventist Hospital and surrounding estate in Wahroonga Exchange area, located in an area just north of the Comenarra Parkway near the corner with Fox Valley Road, and on either side of Fox Valley Road, a review was undertaken of the area and nearby telecommunications infrastructure.

Telstra maintains some existing network through parts of the land marked for redevelopment as well as through areas further south of the Comenarra Parkway. This network is currently not sufficient to meet the likely demand of this development.

To accommodate the proposed redevelopment, the telecommunications network would require upgrade. To achieve this, Telstra may require:

- Upgrading the conduit network along Fox Valley Road and Comenarra Parkway;
- Hauling new copper cable and optical fibre cable to the site from the north along Fox Valley Road.

The technology and services provided would be determined closer to the time of development commencement, depending on Telstra deployment policy and any negotiations based on a commercial agreement.

Telstra will require the protection of/relocation of its telecommunications infrastructure that may be impacted by activities on this site. To minimise risk of liability due to any damage, the Telstra 1100 Inquiry number should be contacted to obtain location of Telstra plant before commencement of construction work.

Further discussions regarding details for network expansion are strongly encouraged once detailed planning for the development is in progress. To inform Telstra of likely commencement of this development, you are requested to register this development on the Telstra Smart Community website (only if the request did not come through the TSC website):

<http://www.telstrasmartcommunity.com>

Please note that Telstra reserves the right to change its decision in relation to network deployment within the development without prior notice.

For future correspondence and enquiries regarding this matter, please contact the undersigned on (02) 9397-2175.



Yours faithfully,

Kenneth Liu

Principal Planner

Forecasting & Area Planning - NSW

Fundamental Planning

Network & Technology

Telstra Operations

Ph: (02) 9397-2175 | Fax: (02) 9397-2030

Post: Locked Bag 3101, Burwood NSW 1805 | Location: 4/52 Railway Pde, Burwood NSW 2134



Appendix D

DSP Charges

East West Lane Cove Wastewater System [1 page(s)]

Wahroonga Water System [1 page(s)]



Executive Summary – East West Lane Cove Wastewater System Developer Charge

In accordance with the Independent Pricing and Regulatory Tribunal's (IPART) Determination *No. 9*, Sydney Water has revised its existing developer charges and Development Servicing Plans.

This Development Servicing Plan has been prepared for the East West Lane Cove wastewater system and is currently on public exhibition for a period of 30 working days.

The revised developer charge for the East West Lane Cove wastewater system is \$0/ET as compared with the existing charge of \$0/ET. Table 1 details the schedule of charges for different development types.

Existing Developer Charge \$2005/06				Revised Developer Charge \$2005/06			
Development	Density		Charge	Development	Density		Charge
Residential				Residential			
	0 - 20	\$/dwell	\$0		0 - 20	\$/dwell	\$0
	>20 - 40	\$/dwell	\$0		21 - 35	\$/dwell	\$0
	>40 - 60	\$/dwell	\$0		36 - 50	\$/dwell	\$0
	>60 - 80	\$/dwell	\$0		51 - 65	\$/dwell	\$0
	>80 - 100	\$/dwell	\$0		66 - 81	\$/dwell	\$0
	>100 - 130	\$/dwell	\$0		82 - 95	\$/dwell	\$0
	>130 - 180	\$/dwell	\$0		96 - 125	\$/dwell	\$0
	> 180	\$/dwell	\$0		126 - 155	\$/dwell	\$0
					> 155	\$/dwell	\$0
Commercial				Commercial			
	Light	\$/PNHa	\$0		Light	\$/PNHa	\$0
	Heavy	Assess As Required			Heavy	Assess As Required	
Industrial				Industrial			
	Light	\$/PNHa	\$0		Light	\$/PNHa	\$0
	Heavy	Assess As Required			Heavy	Assess As Required	
Other				Other			
		Assess As Required				Assess As Required	

PNHa: Pure Net Hectare, which approximately equates to developable area.
Assess as Required: The charges are determined by assessing the likely demands of each individual development.

Once Sydney Water has considered the submissions received during the public exhibition period, Sydney Water will register the final revised developer charges with IPART prior to the new charges becoming effective.



Executive Summary – Wahroonga Water System Developer Charge

In accordance with the Independent Pricing and Regulatory Tribunal's (IPART) Determination No. 9, Sydney Water has revised its existing developer charges and Development Servicing Plans.

This Development Servicing Plan has been prepared for the Wahroonga water system and is currently on public exhibition for a period of 30 working days.

The revised developer charge for the Wahroonga water system is \$311/ET as compared with the existing charge of \$621/ET. Table 1 details the schedule of charges for different development types.

Existing Developer Charge \$2005/06				Revised Developer Charge \$2005/06			
Development	Density		Charge	Development	Density		Charge
Residential				Residential			
	0 - 20	\$/dwell	\$621		0 - 20	\$/dwell	\$311
	>20 - 40	\$/dwell	\$372		21 - 35	\$/dwell	\$174
	>40 - 60	\$/dwell	\$273		36 - 50	\$/dwell	\$137
	>60 - 80	\$/dwell	\$229		51 - 65	\$/dwell	\$121
	>80 - 100	\$/dwell	\$211		66 - 81	\$/dwell	\$109
	>100 - 130	\$/dwell	\$192		82 - 95	\$/dwell	\$95
	>130 - 180	\$/dwell	\$173		96 - 125	\$/dwell	\$84
	> 180	\$/dwell	\$173		126 - 155	\$/dwell	\$78
					> 155	\$/dwell	\$76
Commercial				Commercial			
	Light	\$/PNHa	\$9,936		Light	\$/PNHa	\$5,998
	Heavy	Assess As Required			Heavy	Assess As Required	
Industrial				Industrial			
	Light	\$/PNHa	\$16,146		Light	\$/PNHa	\$8,817
	Heavy	Assess As Required			Heavy	Assess As Required	
Other				Other			
			Assess As Required				Assess As Required

PNHa: Pure Net Hectare, which approximately equates to developable area.

Assess as Required: These charges are determined by assessing the likely demands of each individual development.

Once Sydney Water has considered the submissions received during the public exhibition period, Sydney Water will register the final revised developer charges with IPART prior to the new charges becoming effective.

The final charges will be subject to an annual adjustment in line with movements in the consumer price index. The quantum of each adjustment will be determined by IPART.



Appendix E

Area Breakdown

Original Layout and area breakdown [2 page(s)]

Revised Layout and area breakdown [3 page(s)]



- Residential Transition - Precincts A, D**
Free standing house and town houses in garden settings.
- Residential Bush Edge - Precincts B, H, K**
Free standing houses, town houses and small apartment buildings located in bush settings.
- Residential General - Precincts E, I, L**
Apartments and town houses in garden setting with green fingers to provide public connections and vistas to adjacent bushland.
- Hospital and Residential Bush Edge - Precinct G**
Hospital facilities, Civic areas, Hospital based residential in garden setting with green fingers to provide public connections and vistas to adjacent bushland.
- Retirement and General Residential - Precinct C**
Retirement dwellings, aged care facilities and nursing home. Recreational areas. Residential houses and apartments.
- Church - Precinct F**
Church buildings, gardens and civic outdoor spaces.
- Mixed Use Community - Precinct M**
Community recreation and commercial buildings, Sporting facilities. Residential apartments.
- Mixed Use Village Centre - Precinct J**
Retail, Commercial and Community Facilities, and School of nursing. Residential apartments.
- Educational and Residential - Precinct N**
School K-12. Forested recreational area and sporting areas. Residential houses and apartments.

Preliminary Concept Plan