



Umow Lai

Hurlstone Agricultural High School (Hawkesbury)

Infrastructure Management Plan

REPORT AUTHORISATION

**PROJECT: HURLSTONE AGRICULTURAL HIGH SCHOOL (HAWKESBURY)
INFRASTRUCTURE MANAGEMENT PLAN**

REPORT NO: HASH-00-SD-HY-RP-0001

Date	Rev	Comment	Prepared by	Checked by	Authorised by
12/09/17	A	Draft	JM/PJ/GB		
22/09/17	B	Revised Draft	JM/PJ/GB	AA	PJ
14/12/17	C	Issue for Approval	JM/PJ/GB	AA	PJ

This document contains commercial information which has been prepared for the attention of the Client on this project. It is confidential and no information contained in this document shall be released in part or whole to any third party without the approval of Umow Lai.

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EXECUTIVE SUMMARY

The NSW Department of Education are proposing to develop of the Hurlstone Agricultural High School (Hawkesbury).

This new facility will run as an integrated school-university model providing specialised agricultural educational facilities for 1,500 students.

The Hurlstone Agricultural High School (HAHS) (Hawkesbury) involves the construction of four multi-storey buildings that will provide a range of general learning, laboratory, sporting and agricultural facilities.

The HAHS (Hawkesbury) school is to be located within the Western Sydney University (WSU) Hawkesbury Campus on currently unoccupied land. The site will be leased to the Department of Education (DoE) via a deed of agreement over a 99 year lease. The site will not be a separate allotment to the WSU campus.

The purpose of this report is to make recommendations regarding available infrastructure and required upgrade works for the following services;

- Water Supply for Potable Use
- Water Supply for Fire Services
- Sewer Drainage
- Natural Gas Supply
- Electrical Supply
- Communications Services

The proposed development has been assessed against all relevant standards/guidelines, including the following:

- Sydney Water Regulations
- Jemena Natural Gas Regulations
- Endeavour Energy Regulations
- Hawkesbury City Council
- SEARs Application number SSD-861, relevant clauses;

14. Utilities

Prepare an Infrastructure Management Plan in consultation with relevant agencies, detailing information on the existing capacity and any augmentation requirements of the development for the provision of utilities including staging of infrastructure

The Hydraulic Infrastructure Assessment has identified the following key findings/conclusions and recommendations:

- Potable Water Supply to the HAHS (Hawkesbury) Site is via new a connection to the Sydney Water main on Londonderry Rd. The Potable Water Supply is to feature new authority meter and backflow assembly adjacent Londonderry Road. From new authority meter, potable water main will extend to the new school via the boundary of the Student Village and the HAHS site.



- HAHS (Hawkesbury) is to be supplied with fire water from the WSU fire water network, via connection to the ring main in Vines Drive. A hydrant booster assembly will be provided at the HAHS (Hawkesbury) school within the boundary fronting Vines Drive and visible from main building entry.
- The proposed sewer infrastructure for the HAHS (Hawkesbury) site requires a pumping station and sewer rising main from the school to the Sydney Water sewer tie. From the new sewer pump station, a pump out line will extend to the Sewer tie on Londonderry Road, via the boundary of the Student Village and the HAHS site.
- The proposed NG supply to HAHS is via a new connection to the Jemena NG main adjacent to the site on Londonderry Rd. From the new connection, extend gas main to new school at 100 kPa via the boundary of the Student Village and the HAHS site.

The Electrical Infrastructure Assessment has identified the following key findings/conclusions and recommendations:

- A new connection will be made to Endeavour's HV supply on Londonderry Road adjacent the HAHS site, and extend along via the boundary of the Student Village and the HAHS site to a new 1000 kVa pad mount substation within the HAHS site.
- The HV supply from Londonderry Road to the HAHS (Hawkesbury) site will be subject to easement requirements.
- New telecommunications incoming cabling and termination equipment will be required. The new incoming cabling shall have capacity to serve the final design of the new school.

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1.0 SITE AND PROJECT DESCRIPTION

1.1 SITE LOCATION AND DESCRIPTION

The HAHS (Hawkesbury) school is to be located within the Western Sydney University (WSU) Hawkesbury Campus, in the suburb of Richmond, on currently unoccupied land. The site will be leased to the Department of Education (DoE) via a deed of agreement over a 99 year lease. The site will not be a separate allotment to the WSU campus.

The proposed site is located on Vines Drive, which is a private road within the WSU Campus. The nearest public Road is Londonderry Road. The intersection of Vines Drive and Londonderry Road is approximately 550m north west of the site.

The Vines Drive entry to the WSU campus is not gated and is accessible 24hrs a day.



Figure 1 Existing Site and Proposed Configuration

1.2 PROJECT DESCRIPTION

This new facility will run as an integrated school-university model providing specialised agricultural educational facilities for 1,500 students.

The Hurlstone Agricultural High School (Hawkesbury) involves the construction of four multi-storey buildings that will provide a range of general learning, laboratory, sporting and agricultural facilities.

The site has a total GFA of approximately 16,000m² and will accommodate approximately 1,500 students and 105 staff.



2.0 WATER SUPPLY FOR POTABLE DEMANDS

2.1 EXISTING AUTHORITY INFRASTRUCTURE

The nearest Sydney Water Main to the proposed site is a 200mm dia Water Main, located in Londonderry Rd to the west of the HAHS (Hawkesbury) site. The water main reticulates past the intersection of Vines Drive. The main is located on the Eastern side of the Road, closest to the Vines Drive intersection. The WSU Campus does not currently connect to this main.

The WSU Campus is provided with domestic and firefighting water supply from the 200mm and 150 mm water mains that run parallel in College drive which is supplied from the authority water main in Bourke Street and College street intersections.



Figure 2 Sydney Water – Water Mains Infrastructure

A *Statement of Available Pressure and Flow* enquiry has been received from Sydney Water for the 200mm dia Londonderry Road Water Main. The stated maximum available flow at 15m/h is 40 l/s.

Refer to Appendix A for the received *Statement of Available Pressure and Flow*.

2.2 EXISTING WSU INFRASTRUCTURE

Extending from dual Sydney Water Mains connection in College Drive, Cold Water reticulates through the WSU campus in a Ring Main and Sub Ring Main arrangement. Ring Mains are sized between 100 dia and 150 dia.



WSU have stated that there is insufficient capacity in the WSU Cold Water Infrastructure to supply the HAHS (Hawkesbury) School.

2.3 PROPOSED DEMANDS

The proposed HAHS (Hawkesbury) School Potable Water demands are summarised in the following table;

Application	Demand
L/Day	34,200
PSD (l/s)	5.2

Table 1 Proposed Water Demands

2.4 HAHS (HAWKESBURY) PROPOSED INFRASTRUCTURE SUPPLY

The site demand is within the available capacity of the Londonderry Road Sydney Water Main.

The Proposed Potable Water Supply to HAHS Site is via new a connection to the Sydney Water main on Londonderry Rd.

Potable Water Supply to feature new authority meter and backflow assembly adjacent Londonderry Road.

From new authority meter, extend potable water main to new school via the boundary of the Student Village and the HAHS site.

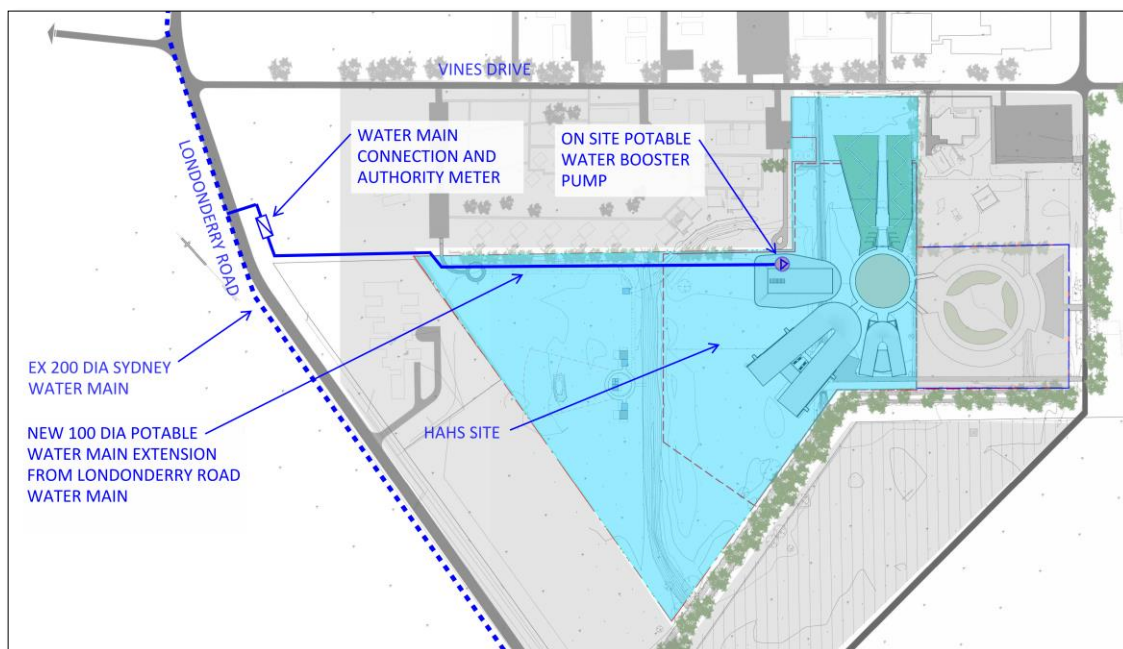


Figure 3 Potable Supply from Londonderry Road Water Main



3.0 FIRE WATER

3.1 EXISTING WSU INFRASTRUCTURE

The WSU Campus features on site fire water storage tanks with an on site fire services booster pump supplying a network of ring main and sub ring main reticulation throughout the Campus. Nine fire brigade booster assemblies extend from the site ring main and are located around the campus site for the protection of the sites buildings in various zones.

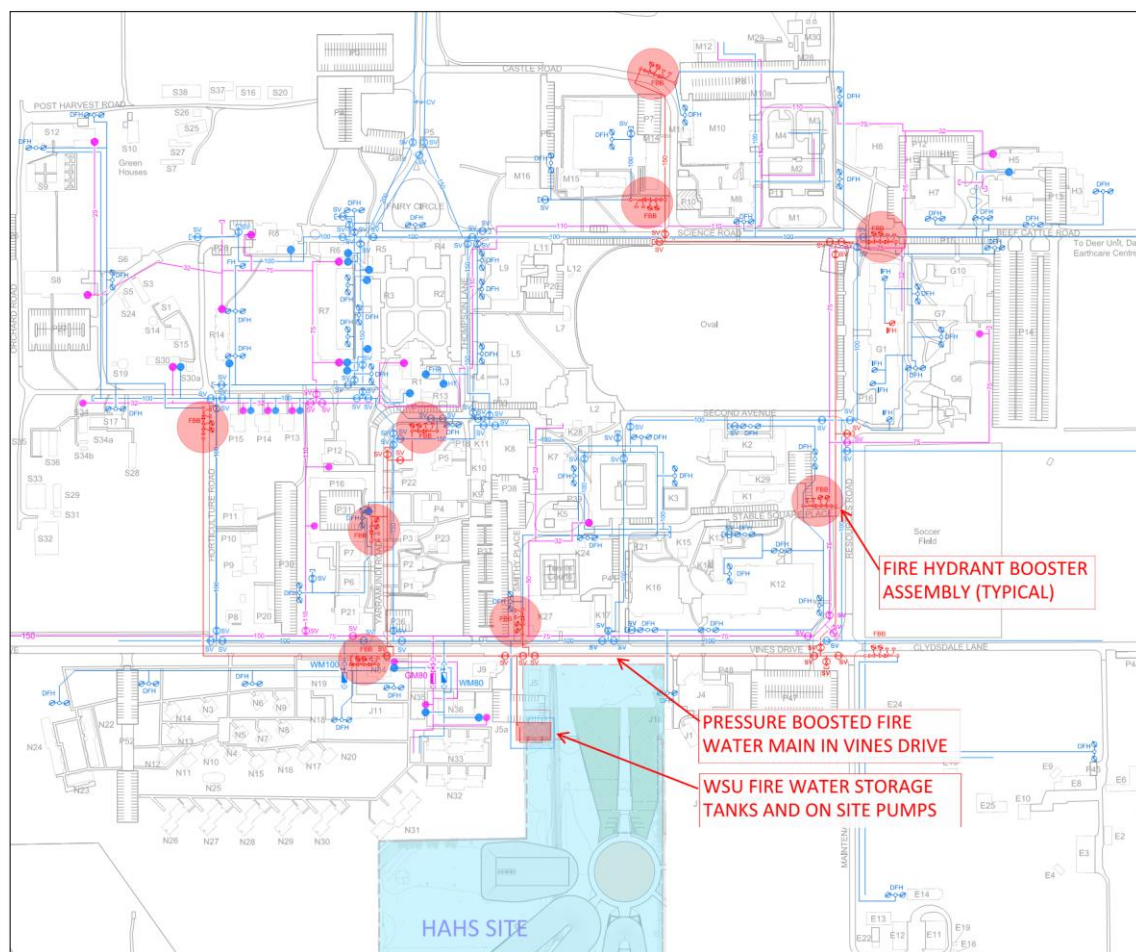


Figure 4 WSU Campus Private Fire Water Mains Infrastructure



3.2 EXISTING AND PROPOSED DEMANDS

The existing capacity of the WSU Fire Water supply system is summarised in the following table;

Application	Capacity
On Site Water Storage Volume (kL)	500 kL
Maximum flow over 4 hours (l/s)	35 l/s
On Site Pump Duty (l/s, kPa)	40 l/s @ 930 kPa
Ring Main pipe size (mm dia)	150mm

Table 2 Existing WSU Fire Water Infrastructure Capacity

The HAHS (Hawkesbury) school will feature Fire Hydrants and Fire Hose Reels. At this stage it is not anticipated that sprinkler or drencher systems will be required. Based on these systems, the proposed demand for fire water to the HAHS (Hawkesbury) School are;

Application	Demand
Fire Hydrant flow (l/s)	10 l/s from on-site pump 20 l/s from brigade boost
Fire Hydrant Pressure (at booster assembly)	900 kPa
Total 4 hour supply Volume (kL)	288 kL

Table 3 Proposed HAHS (Hawkesbury) Fire Water Demand

3.3 HAHS (HAWKESBURY) PROPOSED INFRASTRUCTURE SUPPLY

The above assessment confirms that the existing WSU Fire Water supply has sufficient capacity to provide fire water to the proposed HAHS (Hawkesbury) school.

HAHS (Hawkesbury) is to be supplied with fire water from the WSU fire water network, via connection to the ring main in Vines Drive.

A hydrant booster assembly will be provided at the HAHS (Hawkesbury) school within the boundary fronting Vines Drive and visible from main building entry.



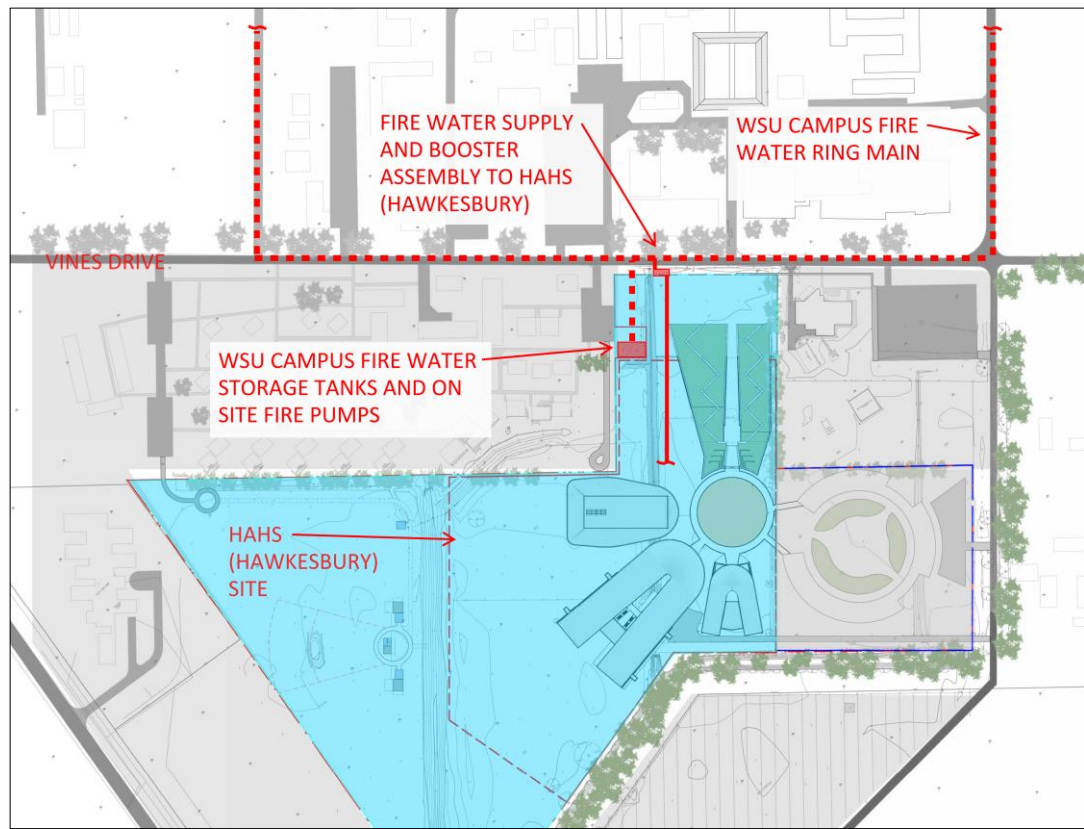


Figure 5 Proposed Fire Water Supply from WSU Infrastructure



4.0 SEWER DRAINAGE

4.1 EXISTING AUTHORITY INFRASTRUCTURE

The nearest Sydney Water Sewer main to the proposed site is a 150mm dia Sewer Tie, located in Londonderry Rd, approximately 300m north of the Vines Drive and intersection.

The sewer tie extending to the WSU campus is 150 dia and is approximately 1.8m below surface level. From the sewer tie, the Sydney Water sewer falls in a north easterly direction.

The WSU Campus discharges to a 150mm Sydney Water Sewer Tie located in the intersection of Bourke Street and College street.

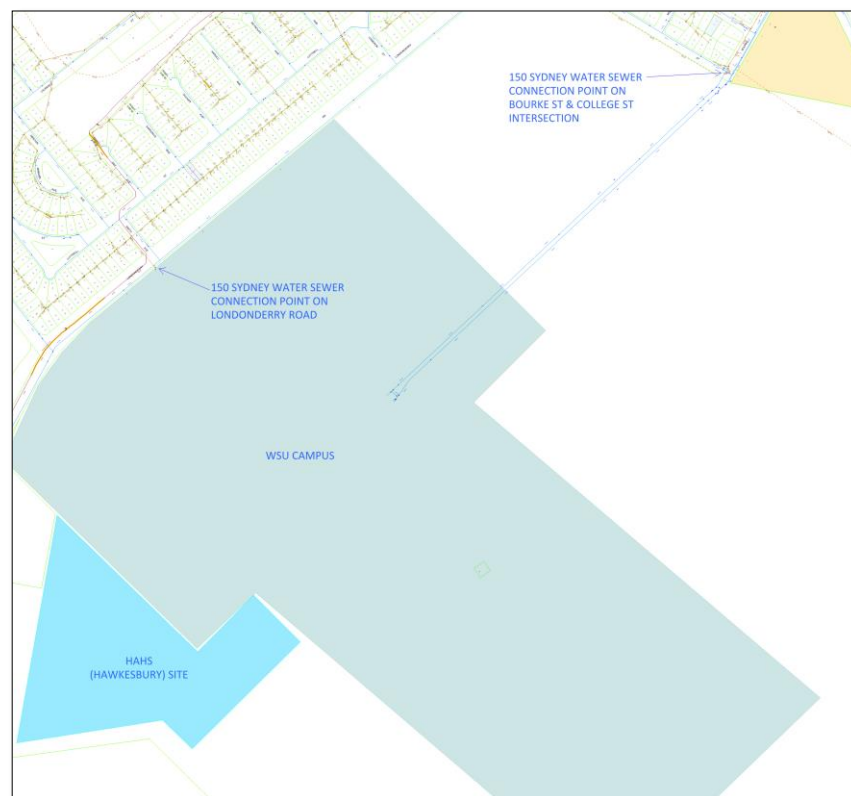


Figure 6 Sydney Water – Sewer Mains Infrastructure

4.2 EXISTING WSU INFRASTRUCTURE

The WSU campus features a network of gravity and pumped sewer drainage infrastructure serving the various buildings.

Sewer drainage reticulates in College Drive a north East Direction and discharges to the Sydney Water Sewer Mains sewer tie.

WSU have stated that there is insufficient capacity in the WSU Sewer Infrastructure to accommodate sewer outflow from the HAHS (Hawkesbury) School.



4.3 PROPOSED DEMANDS

The projected HAHS (Hawkesbury) sewer flow demands are summarised in the table below;

Application	HAHS (Hawkesbury) School
Student Population	1,500
Staff Population	105
EP	171
Average Dry Weather Flow (ADWF)	1.1 l/s
Peak Dry Weather Flow (PDWF)	4.7 l/s

Table 4 Projected Sewer Infrastructure Load

4.4 HAHS (HAWKESBURY) PROPOSED INFRASTRUCTURE SUPPLY

The proposed sewer infrastructure for the HAHS site requires a pumping station and sewer rising main from the HAHS site to the Sydney Water sewer tie.

From new on site sewer pump station, a pump out line will extend to the Sewer tie on Londonderry Road, via the boundary of the Student Village and the HAHS site.

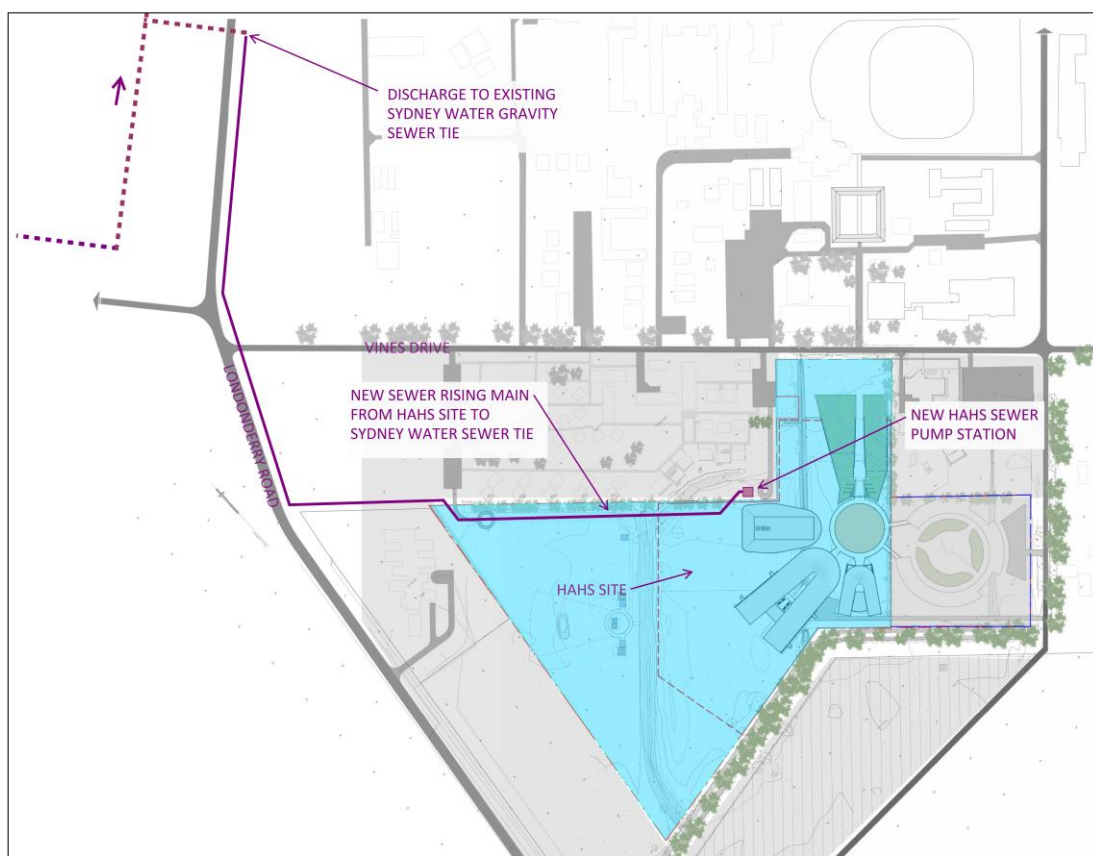


Figure 7 Proposed HAHS (Hawkesbury) Sewer Site Discharge



5.0 NATURAL GAS SUPPLY

5.1 EXISTING AUTHORITY INFRASTRUCTURE

The nearest Jemena Natural Gas (NG) main is located in Londonderry Road. The NG main is 75mm dia 210 kPa. The NG main reticulates past the intersection of Vines Drive. The main is located on the Eastern side of the Road, closest to the Vines Drive intersection. The WSU campus is supplied with Natural Gas via a connection to this main.

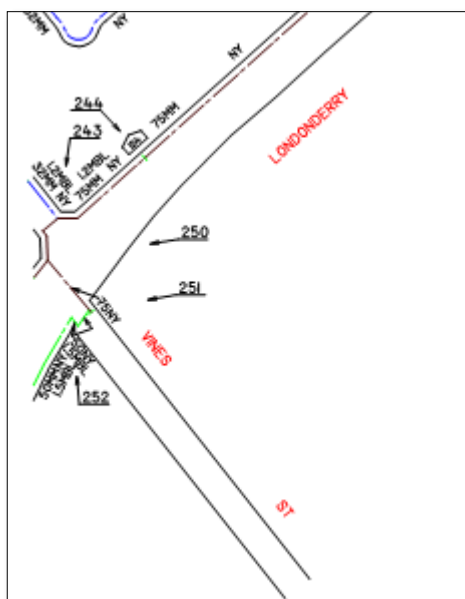


Figure 8 Jemena Gas Mains Infrastructure

5.2 EXISTING WSU INFRASTRUCTURE

Extending from the connection to the Londonderry Road NG Mains connection, NG reticulates through the WSU campus.

WSU have stated that there is insufficient capacity in the WSU NG Infrastructure to supply the HAHS (Hawkesbury) School.

5.3 PROPOSED DEMANDS

The projected HAHS (Hawkesbury) NG demands are summarised in the table below;

Item	Demand
Peak Maximum Demand	5,700 mj/h
Maximum Hourly Quantity	2,000 mj/h
Maximum Daily Quantity	15,000 mj/hr

Table 5 Projected Gas Infrastructure Load



5.4 HAHS (HAWKESBURY) PROPOSED INFRASTRUCTURE SUPPLY

The proposed NG supply to HAHS is via a new connection to the Jemena NG main adjacent to the site on Londonderry Rd.

From the new connection, extend gas main to new school at 100 kPa via the boundary of the Student Village and the HAHS site.

A secondary regulator is to be provided at each building for internal gas reticulation.

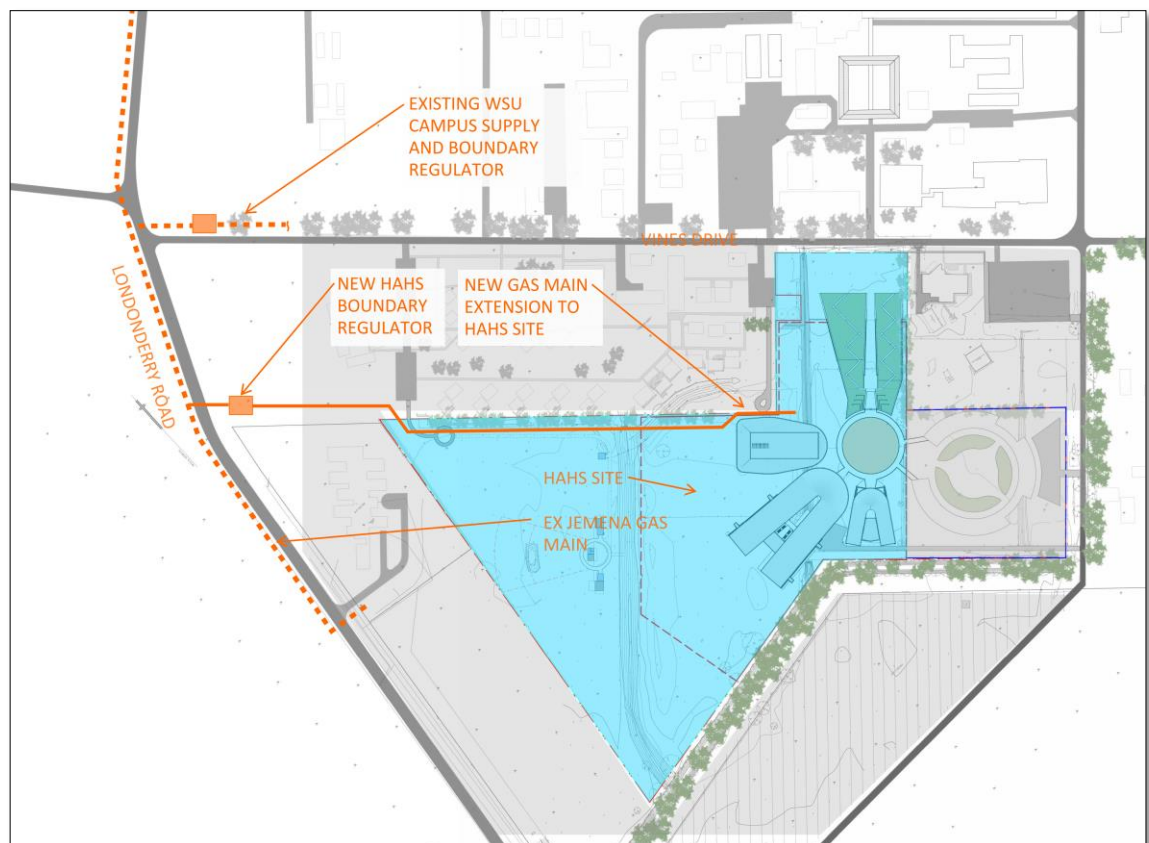


Figure 9 Proposed HAHS (Hawkesbury) Natural Gas Site Supply



6.0 ELECTRICAL SUPPLY

6.1 EXISTING AUTHORITY INFRASTRUCTURE

Endeavour's HV supply is located on Londonderry Road adjacent Vines Drive.

6.2 EXISTING WSU INFRASTRUCTURE

WSU is supplied with an HV meter near the intersection of Londonderry and Vines Drive. A high Voltage network reticulates through the WSU campus to a number of private substations, which provide LV to the various buildings on site.

WSU have stated that the Campus's power supply is at capacity and there is insufficient power available for supply to the HAHS site.

6.3 PROPOSED DEMANDS

The maximum demand electrical load for the development is projected to be approximately 820 Amps.

In accordance with the EFSG, the required site demand is to include 20% spare capacity. This results in a total site demand of **1,400 Amps**

6.4 HAHS (HAWKESBURY) PROPOSED INFRASTRUCTURE SUPPLY

The proposed power supply for the HAHS (Hawkesbury) site to reticulate from the HV supply located at Londonderry Road adjacent the HAHS site, and extend along via the boundary of the Student Village and the HAHS site to a new 1000 kVa pad mount substation within the HAHS site.

The HV supply from Londonderry Road to the HAHS (Hawkesbury) site will be subject to easement requirements.



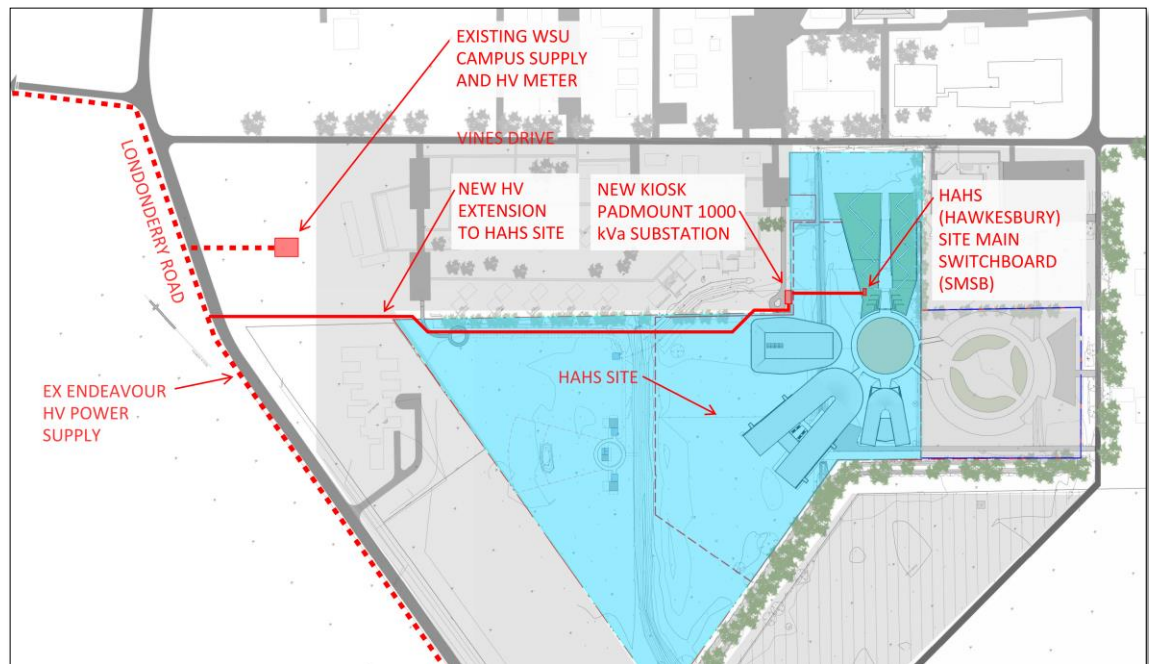


Figure 10 Proposed HAHS (Hawkesbury) Power Supply

An *Application for Connection* has been submitted to Endeavour Energy for Power Supply to the HAHS (Hawkesbury) site. Endeavour Energy have provided a response via a *Connection Offer – Standard Connection Service Letter*.

The *Connection Offer – Standard Connection Service* is attached in Appendix B.

The *Connection Offer – Standard Connection Service* states;



SUPPLY OFFER

(Based on a desktop assessment)

Development Details & Applicant's Assessed Load:

Application is for total proposed for a total load of 833kVA or 1159A/phase for Hurlstone Agricultural High School.

Endeavour Energy Assessed Load:

As per customers maximum demand of 833kVA

Development & Site Plans received/not received:

Plans received

HV/LV Connection Point & Connection Asset Requirements:

HV Feeder ER1262 from East Richmond ZS, located in Londonderry Road

Network Constraints & Limitations

No capacity in existing network to cater for the existing load, substation on site is required. Existing substation 20402 is too far to supply the proposed load and will not comply with Vd.

Connection Options:

Customer's is to engage a Level 3 ASP to investigate and submit a proposed Method of Supply (MOS) to Endeavour Energy for further assessment. Customer/L3 ASP is to indicate on the MOS the substation location and access and outline any structures/encumbrance in the restriction zone, and ensure all works comply with EE PM Substation requirements and relevant standards

In summary, a new connection will be made to Endeavour's HV supply on Londonderry Road. HV will reticulate to the HAHS (Hawkesbury) site.

A 1000 kVa Substation will be installed within the HAHS (Hawkesbury) site.



7.0 TELECOMMUNICATIONS

7.1 AUTHORITY INFRASTRUCTURE AND CONNECTION

We understand that NBN Co will be installing new network infrastructure along Londonderry Rd and that the Client will be responsible for providing a telecom cable pathway (underground) from Londonderry Rd up to the new School Campus Distributor.

Our preferred pathway involves utilizing the existing underground Telecom Conduits that are installed in Vines Drive (privately owned) in order to minimize the extent of excavation works. This design concept has been approved by NBN Co via their online submission.

However, this proposal must still be discussed with the School and Western Sydney University to verify the suitability of the Vines Drive telecom Ducts and also confirm whether these ducts are currently owned by the University, Telstra, Optus or AARNet – all of whom are mentioned on the University's infrastructure drawings.

We understand that NBN Co. has purchased most of Telstra's pits and ducts across Australia so it is likely that the new NBN lead-in cables can utilize the existing Telstra ducts.

Should the School require a network connection to the existing Western Sydney University then new privately owned cables and cable pathways will be required to link the two sites.

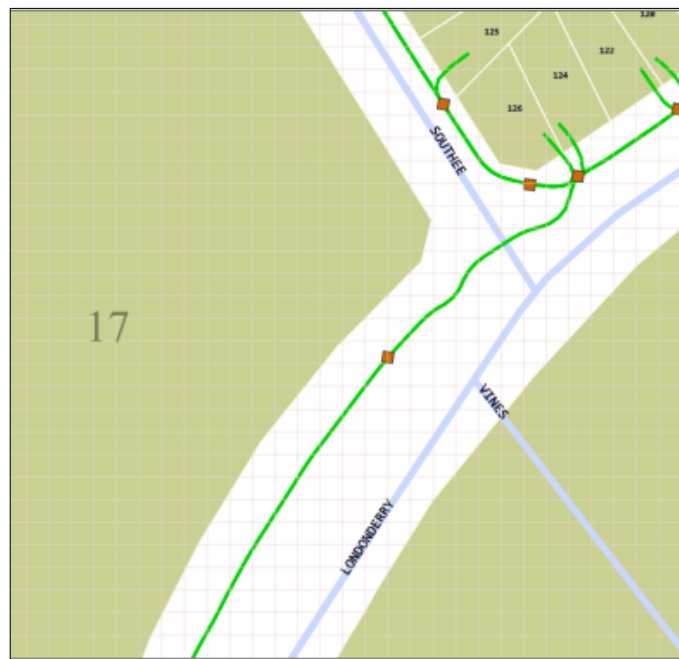


Figure 11 NBN Infrastructure from DBYD



Application to connect with NBN Co's Infrastructure has been submitted and approved.

From: developerliaison@nbnco.com.au [<mailto:developerliaison@nbnco.com.au>]
Sent: Monday, 11 December 2017 11:41
To: Greg Biernat <greg.biernat@umowlai.com.au>
Subject: nbn: All stage applications for greg.biernat@umowlai.com.au

Dear Greg Biernat,

Thank you for using our new MDA application tracker to request a summary of your applications with us. Please contact us to update any details that may be incorrect; you can find our contact details below.








Applications linked to the email address greg.biernat@umowlai.com.au:

Application reference	Development name	Stage reference	Your internal reference	Application status
AYCA-4001NN	Hurlstone Agricultural HS, Hawkesbury	1		Approved

Is your information correct?

If an application is missing, or if you have any queries, please contact the Developer Liaison Team on **1800 687 626** or at DeveloperLiaison@nbnco.com.au

Thank you and regards,
nbn™ Developer Liaison Team

Visit our New Developments site: www.nbn.com.au/newdevelopments
Subscribe to our Construction Industry eNewsletter: [here](#)
View our privacy policy: www.nbn.com.au/privacy



APPENDIX A SYDNEY WATER FLOW AND PRESSURE ENQUIRY



Statement of Available Pressure and Flow

Umow Lai
657 Pacific Highway
St Leonards, 2065

Date: 13/08/2016

Pressure & Flow Application Number: 98223
Your Pressure Inquiry Dated: 2016-07-13
Property Address: Blacktown Rd, Londonderry 2753

The expected maximum and minimum pressures available in the water main given below relate to modelled existing demand conditions, either with or without extra flows for emergency fire fighting, and are not to be construed as availability for normal domestic supply for any proposed development.

ASSUMED CONNECTION DETAILS

Street Name: Londonderry Road	Side of Street: East
Distance & Direction from Nearest Cross Street	300 metres South from Southee Road
Approximate Ground Level (AHD):	24 metres
Nominal Size of Water Main (DN):	200 mm

EXPECTED WATER MAIN PRESSURES AT CONNECTION POINT

Normal Supply Conditions	
Maximum Pressure	47 metre head
Minimum Pressure	32 metre head

WITH PROPERTY FIRE PREVENTION SYSTEM DEMANDS	Flow l/s	Pressure head m
Fire Hose Reel Installations (Two hose reels simultaneously)	0.66	32
Fire Hydrant / Sprinkler Installations (Pressure expected to be maintained for 95% of the time)	5	34
	10	33
	15	32
	20	30
	26	28
	30	26
	40	21
Fire Installations based on peak demand (Pressure expected to be maintained with flows combined with peak demand in the water main)	50	14
	5	31
	10	30
	15	28
	20	26
	26	23
	30	21
Maximum Permissible Flow	40	15
	50	9
	56	4

(Please refer to reverse side for Notes)

For any further inquiries regarding this application please email :

connections@sydneywater.com.au

General Notes

This report is provided on the understanding that (i) the applicant has fully and correctly supplied the information necessary to produce and deliver the report and (ii) the following information is to be read and understood in conjunction with the results provided.

1. Under its Act and Operating Licence, Sydney Water is not required to design the water supply specifically for fire fighting. The applicant is therefore required to ensure that the actual performance of a fire fighting system, drawing water from the supply, satisfies the fire fighting requirements.
2. Due to short-term unavoidable operational incidents, such as main breaks, the regular supply and pressure may not be available all of the time.
3. To improve supply and/or water quality in the water supply system, limited areas are occasionally removed from the primary water supply zone and put onto another zone for short periods or even indefinitely. This could affect the supply pressures and flows given in this letter. This ongoing possibility of supply zone changes etc, means that the validity of this report is limited to one (1) year from the date of issue. It is the property owner's responsibility to periodically reassess the capability of the hydraulic systems of the building to determine whether they continue to meet their original design requirements.
4. Sydney Water will provide a pressure report to applicants regardless of whether there is or will be an approved connection. Apparent suitable pressures are not in any way an indication that a connection would be approved without developer funded improvements to the water supply system. These improvements are implemented under the Sydney Water 'Urban Development Process'.
5. Pumps that are to be directly connected to the water supply require approval of both the pump and the connection. Applications are lodged through Quick Check Agents (List available on Sydney Water Website - www.sydneywater.com.au). Where possible, on-site recycling tanks are recommended for pump testing to reduce water waste and allow higher pump test rates.
6. Periodic testing of boosted fire fighting installations is a requirement of the Australian Standards. To avoid the risk of a possible 'breach' of the Operating Licence, flows generated during testing of fire fighting installations are to be limited so that the pressure in Sydney Water's System is not reduced below 15 metres. Pumps that can cause a breach of the Operating Licence anywhere in the supply zone during testing will not be approved. This requirement should be carefully considered for installed pumps that can be tested to 150% of rated flow.

Notes on Models

1. Calibrated computer models are used to simulate maximum demand conditions experienced in each supply zone. Results have not been determined by customised field measurement and testing at the particular location of the application.
2. Regular updates of the models are conducted to account for issues such as urban consolidation, demand management or zone change.
3. Demand factors are selected to suit the type of fire-fighting installation. Factor 1 indicates pressures due to system demands as required under Australian Standards for fire hydrant installations. Factor 2 indicates pressures due to peak system demands.
4. When fire-fighting flows are included in the report, they are added to the applicable demand factor at the nominated location during a customised model run for a single fire. If adjacent properties become involved with a coincident fire, the pressures quoted may be substantially reduced.
5. Modelling of the requested fire fighting flows may indicate that local system capacity is exceeded and that negative pressures may occur in the supply system. Due to the risk of water contamination and the endangering of public health, Sydney Water reserves the right to refuse or limit the amount of flow requested in the report and, as a consequence, limit the size of connection and/or pump.
6. The pressures indicated by the modelling, at the specified location, are provided without consideration of pressure losses due to the connection method to Sydney Water's mains.

APPENDIX B ENDEAVOUR ENERGY CONNECTION APPLICATION



25 July 2017

Endeavour Energy Ref: NCL1407 – 2017/03172/001
Customer Ref:

Umow Lai Consulting Engineers
657 Pacific Highway
ST LEONARDS NSW 2065

Attention: Ryan Hendricks

CONNECTION OFFER – STANDARD CONNECTION SERVICE

**NCL1407 – LOT 2, DP 1051798, Connection of Load Application: 2 College Street,
RICHMOND**

Thank you for your application providing information of the proposed development at the above location. Your application has been registered under the above reference number. Please quote this reference number on all future correspondence.

This connection offer is made in accordance with the Terms and Conditions of the Model Standing Offer for a Standard Connection Service available on our website. To accept this offer, please complete the enclosed Notice of Advice form and obtain your Level 3 Accredited Service Provider (ASP) signature on the form prior to returning it to Endeavour Energy.

Endeavour Energy has completed a preliminary desk top assessment of the information provided in your application and issued an enclosed Supply Offer. Your next step is to obtain the services of a Level 3 ASP to prepare and provide an electrical design to Endeavour Energy in the form of a Proposed Method of Supply. This activity is customer funded contestable work and you will need to pay for it. An estimate of fees related to review of your design is attached.

A list of the Accredited Service Providers is available at the NSW Trade and Investment website: <http://www.energy.nsw.gov.au/electricity/network-connections/contestable> or can be obtained via phone 13 77 88.

Please note under the National Electricity Rules (NER) customer may choose to enter into a negotiated agreement. A negotiation framework describing this process is available on our website.

Should you have any enquiries regarding your application please contact the undersigned.

Yours faithfully,



Ravi Lal
Contestable Works Engineer
Ph: 98535626
Fax: 9853 7925
Email: cwtech@endeavourenergy.com.au

25 July 2017

Endeavour Energy Ref: NCL1407 – 2017/03172/001

Endeavour Energy
PO Box 811
Seven Hills NSW 1730
cwadmin@endeavourenergy.com.au

Attention: Contestable Works Administrator

NOTICE OF ADVICE

**APPOINTMENT OF ACCREDITED DESIGNER FOR THE PROPOSED DEVELOPMENT AT:
LOT 2, DP 1051798, 2 COLLEGE STREET, RICHMOND**

*** Please complete and return when a Level 3 Service Provider has been nominated***

Please accept this letter as notification that I intend to proceed with the development described above. I own or am developing the land and works on the land, (and/or where relevant on public land). I intend to supply this development to Endeavour Energy requirements.

By signing this Notice of Advice I am accepting the Terms and Conditions of Endeavour Energy's Model Standing Offer for a Standard Connection Service.

- Electricity Supply to Developments.

The Level 3 Service Provider appointed is:.....

The Fees will be Paid to Endeavour Energy by:

.....
Signature of Level 3 ASP

.....
Name of Level 3 ASP

.....
Signature of Applicant/ Applicant's Representative

.....
Name of Applicant/ Applicant's Representative

.....
Date

.....
Company Name

The signatory warrants that they are authorised to execute this Application.

APPLICATION NO: NCL1407

DATE: 25 July 2017

SUBJECT: SUPPLY OFFER FOR

2 College Street, RICHMOND

Endeavour Energy has carried out a desk top assessment and has prepared the attached Supply Offer for this development.

The supply offer will assist your Level 3 ASP to develop the most efficient solution to meet your needs whilst complying with Endeavour Energy's standards and with the Terms and Conditions of the Model Standing Offer for a Standard Connection Service. Please find below a list of some requirements that will need to be addressed by your nominated Level 3 ASP.

- Field visit to verify physical details
- Trench length
- Cable length
- Length of cable using existing ducts
- Length of new ducts required to be installed
- Substation location shown on a preliminary sketch and HV switchgear numbers
- Types and number of poles to be replaced or installed
- Complexity of trenching (ie rock, under-bore, commercial area etc)
- Earthing requirements and complexity
- Overhead construction and isolation point requirements
- Asset Valuation form must be completed including any extraordinary costing requirements
- Environmental issues addressed in a fully documented Environmental Assessment
- Generation requirements
- Rail Crossing requirements

A sketch of the proposed design utilising the GIS as a base must be returned with the above information.

This Supply Offer is part of the Connection Offer for a Standard Connection Service and is valid for three (3) months from the date of issue.

Where this Connection Offer has lapsed, you or your Level 3 ASP must contact Endeavour Energy with the request to extend the Connection Offer. Endeavour Energy will assess your request and will inform you of the outcome. It must be recognised that the network is being constantly extended/augmented as new customers get connected. This means that for your Connection Offer to be extended, your Supply Offer may require alteration. If this is the case, additional fees to cover administrative costs may apply.

The fees applicable to this phase of the project will need to be paid prior to design certification and are outlined in the Network Price List available on the Endeavour Energy website.

25 July 2017

Endeavour Energy Ref: NCL1407 – 2017/03172/001

SUPPLY OFFER

(Based on a desktop assessment)

Development Details & Applicant's Assessed Load:

Application is for total proposed for a total load of 833kVA or 1159A/phase for Hurlstone Agricultural High School.

Endeavour Energy Assessed Load:

As per customers maximum demand of 833kVA

Development & Site Plans received/not received:

Plans received

HV/LV Connection Point & Connection Asset Requirements:

HV Feeder ER1262 from East Richmond ZS, located in Londonderry Road

Network Constraints & Limitations

No capacity in existing network to cater for the existing load, substation on site is required. Existing substation 20402 is too far to supply the proposed load and will not comply with Vd.

Connection Options:

Customer's is to engage a Level 3 ASP to investigate and submit a proposed Method of Supply (MOS) to Endeavour Energy for further assessment. Customer/L3 ASP is to indicate on the MOS the substation location and access and outline any structures/encumbrance in the restriction zone, and ensure all works comply with EE PM Substation requirements and relevant standards

25 July 2017

Endeavour Energy Ref: NCL1407 – 2017/03172/001

Initial Funding Arrangements

Endeavour Energy Supplied Materials:

Nil

Endeavour Energy Funded and Constructed:

Nil

Endeavour Energy Funded and Level1 ASP Constructed – Reimbursement Paid by Endeavour Energy

1000kVA PM Substation transformer only.

Reimbursement to be paid to Endeavour Energy by Customer:

Nil

Customer Funded Monopoly Services:

Network switching, commissioning, contractor inspection, ancillary fees, etc.

Customer Funded Contestable Works:

All other works required

ANCILLARY FEE ESTIMATE

*(for assessment of the Proposed Method of
Supply and approval of the Design)*



CAP No. : NCL1407 File No: 2017/03172/001

Proposed Location: Lot 2, DP 1051798, 2 College Street
 RICHMOND

Detailed below is the **estimate** of the proportion of applicable Ancillary Network Services Fees (GST Inclusive) related to design assessment for your information only. The final fees for this phase of the project will be sent to you with a Design Brief. Ancillary Network Services Fees will also apply for the construction and connection phase of the project (e.g., site establishment fee). These fees will be conveyed to you after the receipt of a signed Letter of Intent indicating that you will proceed with the construction phase of the project.

Administration Fee	24-07-2017	\$426.22
Design Certification Fee	24-07-2017	\$2563.27
Design Information Fee	24-07-2017	\$3417.70
Standard Connection Offer Fee	24-07-2017	\$274.06
Estimate Total (inc GST)		\$6681.25

Where Endeavour Energy assets may need to be placed on private property, property easements will be required. Urgent action should be taken to create easements so that timely acquisition and registration with the Land and Property Information (NSW) can be completed.

Endeavour Energy will accept a property tenure bond while the property owner is in the process of creating the easement. The property tenure bond will be returned after the easement has been registered.

Please do not make any fee payment at this time.

Once the design fee amount has been finalised Endeavour Energy will send a request for the fees and property tenure bond payment (if required) to your nominated Level 3 Accredited Service Provider.