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Goodman International Limited

Oakdale Concept Plan

Infrastructure Concept Plan

December 2007

INFRASTRUCTURE | MINING & INDUSTRY | DEFENCE | PROPERTY & BUILDINGS | ENVIRONMENT

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1. Introduction

Goodman International is preparing a concept plan for the Oakdale development (herein known as "the site") in accordance with the provisions of Part 3A of the *Environmental Planning and Assessment Act 1979*.

For the purposes of the concept plan, the development site has been divided into the following 'precincts':

» Central Precinct – comprising Lot 2 DP 120673;

» South Precinct – comprising that part of Lot 82 DP 752041 east of Ropes Creek and Lot 87 DP 752041;

» West Precinct – comprising Lot 1 DP 120673 and that part of Lot 82 DP 752041 west of Ropes Creek; and

» East Precinct – comprising Lot 1 DP 843901, which is the site of an existing Austral Bricks quarry and brickmaking plant.

The location of the proposed development site is shown in Figure 1.

In terms of staging, it is likely that the Central Precinct would be developed first, and is therefore referred to in this report as 'Stage 1'. Indicative staging from Stage 1 would likely progress to the South Precinct ('Stage 2'), then the West Precinct ('Stage 3'), and finally the East Precinct ('Stage 4'). It is noted that the existing Austral quarry/brickmaking plant is planned to continue operating in accordance with existing approvals for the foreseeable future, and would only be developed following the cessation of quarrying/brickmaking and rehabilitation of the site.

The site forms part of the precinct known as the Western Sydney Employment Hub (part of Site 8 specifically) and is located within two local government areas being:

» Penrith City Council area; and

» Fairfield City Council.

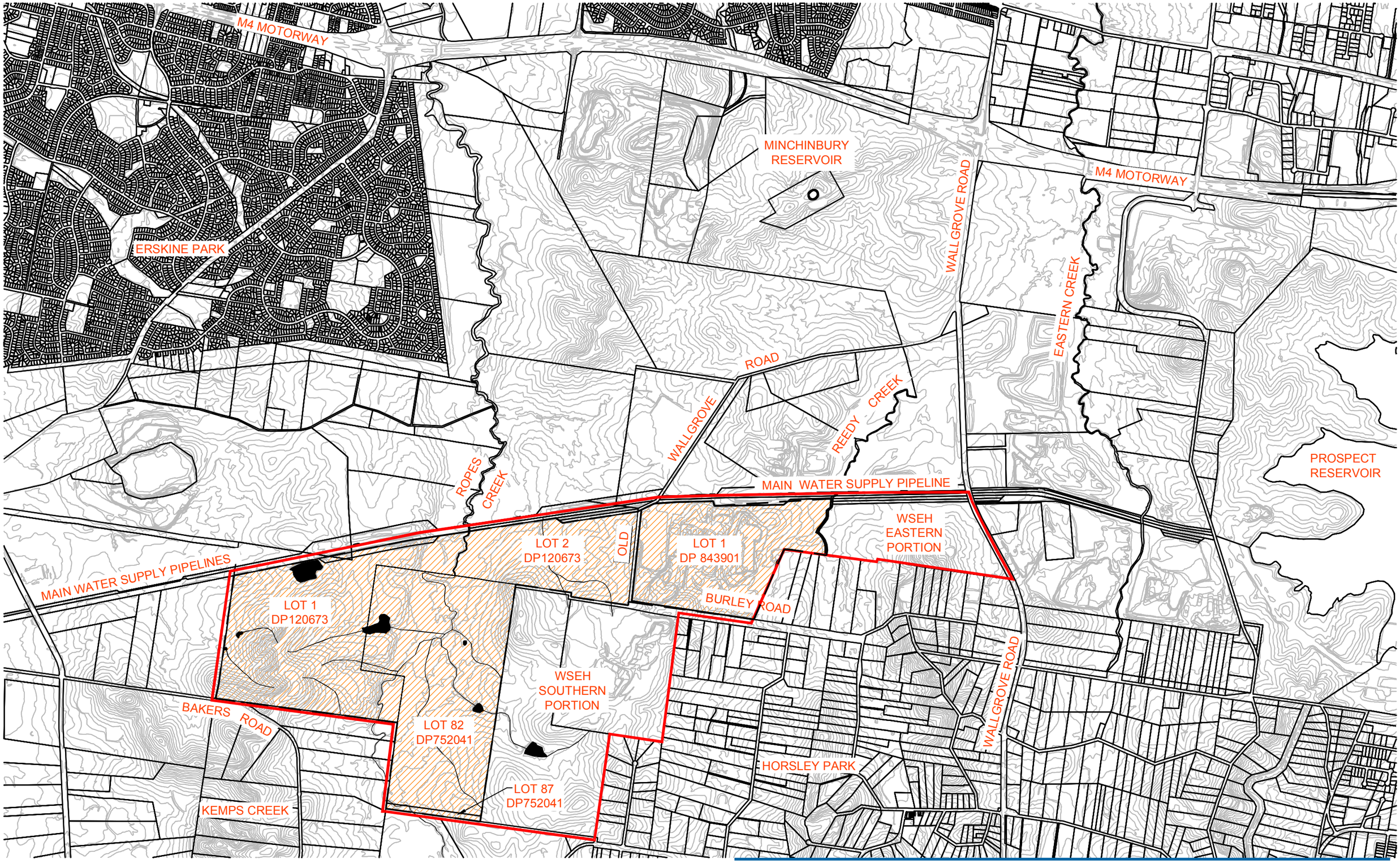
It is proposed to develop the site as a light industrial/employment precinct comprising various size allotments.

GHD Pty Ltd (GHD) has conducted a review into infrastructure requirements for the proposed "Oakdale" development site with consideration of Site 8 of the Western Sydney Employment Hub (WSEH).

This infrastructure review has considered the following:

» Electrical, gas and telecommunications servicing requirements including comment on any known or planned electrical supply upgrades within the area;

» Water and sewer servicing requirements including comment on any known or planned water / sewer infrastructure upgrades within the area;



LEGEND

- PROPOSED DEVELOPMENT SITE
- PROPOSED DEVELOPMENT SITE BOUNDRY
- WESTERN SYDNEY EMPLOYMENT HUB SITE 8 AREA

N

0 250 500 750m

SCALE 1:25000 AT ORIGINAL SIZE

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GOODMAN INTERNATIONAL LTD
OAKDALE CONCEPT PLAN
SITE LOCALITY PLAN

job no. | 21-15101
rev no. | B

scale | 1:25000 for A3 date | DECEMBER 2007

Figure 01

Level 6, 20 Smith St Parramatta NSW 1740 Australia PO Box 788 Parramatta NSW 2124 **T** 61 2 8898 8800 **F** 61 2 8898 8810 **E** sydmail@ghd.com.au **W** www.ghd.com.au

Plot Date: 10 December, 2007 - 8:04 PM Cad File No: G:\21\15101\CADD\Drawings\21-15101-02-ICPFIG001.dwg

2. Electricity Servicing

2.1 Existing Services

There are existing high voltage (330 kV) overhead transmission lines that traverse the site on a north-south alignment (refer Figure 3). These transmission lines lead into the existing Transgrid sub-station to the north of the site. An easement in favour of Transgrid exists over the transmission lines and varies in width from 60.96m to 121.92m. There is a second undeveloped easement of width 60.96m that runs parallel to this easement.

The Eastern Creek Zone Substation is located on the corner of Old Wallgrove Road and Roberts Road approximately 1.5 km to the boundary of Stage 1.

There are existing high voltage (11 kV) overhead electricity lines on Old Wallgrove Road that service the Austral and CSR-PGH Brickworks off Old Wallgrove Road.

There are existing overhead electricity lines on Bakers Road.

The existing 132 kV feeder 93X is located approximately 400m to the east of Old Wallgrove Road. The feeder is connected to the Transgrid 330kV Kemps Creek Substation

2.2 Electricity Servicing Strategy

Integral Energy has been consulted with regards to the future servicing of the proposed development site.

Integral Energy has indicated that Stage 1 could be serviced in the interim by connecting the site to the existing Eastern Creek Zone Substation located at the corner of Old Wallgrove Road and Roberts road.

Integral Energy has indicated that in order to service further Stages of development a new Zone Substation will be required on the site. The Zone Substation will therefore need to be operational before the development of Stage 2 begins. Stage 1 and all remaining Stages of development would then be serviced by the new Zone Substation. The new zone substation would be supplied via the 132kV feeder 93X located approximately 400m east of Old Wallgrove Road. Additional works associated with supplying power to the new Zone Substation will need to be completed as follows:

» Possible augmentation to feeder 93X; and

» Planned connection upgrade works for the feeder 93X to the Transgrid 330kV Kemps Creek Substation will need to be in place.

A further zone substation will be required to service the remainder of Site 8 of the WSEH with its location to be confirmed once the concept plans have been developed.

The proposed electrical infrastructure required to service the site is shown on Figure 2A and 2B.

Refer to Appendix A for relevant Integral Energy correspondence.

3. Gas Servicing

3.1 Existing Services

The nearest gas services to the site are as follows:

» 200mm diameter high pressure gas line in Burley Road;

» 150mm diameter high pressure line in Old Wallgrove Road; and

» 110mm diameter line in Bakers Road.

Refer to Figure 3 for their location.

3.2 Gas Servicing Strategy

Alinta has been consulted with regards to the future servicing of the proposed development site.

Alinta has indicated that if the developer chooses to provide a reticulated gas supply into the proposed development area then the site would be serviced by extending the high pressure gas line in Old Wallgrove Road into the site.

The Stage 1 development area is adjacent to Old Wallgrove and could be readily serviced by an extension of the existing gas main in Old Wallgrove Road. Stages 2 and 3 of development could be serviced by extending the Stage 1 gas infrastructure into the Stage 2 and 3 development areas. Stage 4 is adjacent to Old Wallgrove Road and can be serviced by extending the existing gas main in Old Wallgrove Road into the Stage 4 development area.

Alinta would have to make an assessment as to whether they would extend the gas network to the site based on the potential gas consumption by known end users. Should the developer require a reticulated gas network through the proposed development site, the cost would be passed on to the developer. Each development will be assessed on an as-needs basis in terms of the feasibility of providing a gas supply.

The remainder of Site 8 of the WSEH could be serviced by extensions to the existing network in Burley Road.

The proposed gas infrastructure required to service the site is shown on Figure 2A and 2B.

Refer to Appendix A for relevant Alinta correspondence.

4. Telecommunications Servicing

4.1 Existing Services

There is one existing Telstra service located within the site. The cable enters Lot 1 of DP 120673 for a short distance off Bakers Road. This line services the existing dwelling on the proposed development site.

There are existing Telstra services in Burley Road, Old Wallgrove Road and Bakers Road. Refer Figure 2A and 2B for their locations.

4.2 Servicing Strategy

Although no formal advice has been received from Telstra regarding the provision of telecommunications services to the proposed development site, Telstra would be obligated to service the site via their universal servicing obligations.

The obvious point of connection for the Stage 1 development area is from the existing services in Old Wallgrove Road. Stage 2 could be serviced by an extension of the Stage 1 telecommunications infrastructure. Stage 3 could be serviced by either an extension of the Stage 2 telecommunications infrastructure or from the existing services in Bakers Road. Stage 4 is adjacent to Old Wallgrove Road and could be serviced by extending the existing telecommunications infrastructure in Old Wallgrove Road.

The remainder of Site 8 of the WSEH could be serviced by extensions to the existing network in Burley Road.

Telstra would be obligated to service the site via their universal servicing obligations.

5. Potable Water Servicing Strategy

5.1 Existing Water Infrastructure

The nearest existing potable water infrastructure to the development site is as follows:

- DN150 mm diameter water main located in Burley Road;
- DN150 mm diameter water main located in Old Wallgrove Road (this main stops short of the site frontage to Old Wallgrove Road);
- DN100 mm diameter water main located in Bakers Road; and
- Warragamba to Prospect Main Water Supply Pipelines located along the northern boundary of the proposed development site.

Refer to Figure 2A and 2B for the locations of the existing potable water infrastructure.

The Main Water Supply Pipeline forming the northern boundary of the site would not be available for any potable water supply connection to the proposed development site.

The site is within the northern extremities of the Cecil Park Water System. The Cecil Park reservoir is located at Cecil Park at the southern extremities of the system boundaries. The Minchinbury Reservoir (part of the Minchinbury Water Supply System) is located approximately 2.5 km north of the proposed development site.

5.2 Proposed Water Infrastructure

A new surface water reservoir located adjacent to the existing Minchinbury Reservoir complex is nearing completion. An elevated water reservoir is proposed within the Minchinbury reservoir complex including connections from the reservoir outlet pipework to existing trunk supply mains.

5.3 Water Servicing Strategy

Sydney Water has been consulted with regards to servicing the site with potable water.

Sydney Water has advised that the Stage 1 development area could be serviced in the interim by connecting the site to the Minchinbury Water System by extending the existing watermain in Old Wallgrove Road into the Stage 1 development area.

The servicing of Stage 1 is based on the assumption that the proposed Minchinbury Elevated Water Reservoir and outlet pipe connection works are in place and operational.

The proposed water infrastructure required to service Stage 1 of the site is shown on Figure 2A and 2B.

Site 8 (including Stages 1-4 of Oakdale) could be serviced by connecting to either the Minchinbury, Cecil Park or Erskine Park Water Supply Systems. The ultimate connection point and system upgrade/augmentation requirements will be determined in conjunction with Sydney Water. Sydney Water is investigating the preferred ultimate development connection point. A potential new reservoir locations are shown on Figure 2A. This reservoirs could be sized to service the entire Site 8 area. However, the implementation of the Concept Plan as proposed will significantly reduce potable water demands as a result of the proposed wastewater recycling and roofwater run-off re-use strategies. The proposed water management strategies are outlined in Section 5.4.

Refer to Appendix A for relevant Sydney Water correspondence.

5.4 Integrated Water Cycle Management

Sewage recycling and the re-use of roofwater run-off are proposed to minimise potable water use on the site. The following principles are proposed for the development site:

» Sewage from each allotment will be collected, treated to recycled water standards and recycled for non-potable water uses on each site, including toilet flushing, air conditioning cooling, truck washing and garden watering;

» Each allotment within the development site will incorporate also a roofwater run-off collection tank (incorporating first flush mechanism). The collected rainwater will be used to supplement any deficits in recycled water for non-potable uses including toilet flushing, truck washing and garden watering;

» Surplus roofwater run-off not used on the site will be collected and exported to augment Sydney's drinking water supply as part of the Regional Roofwater Harvesting Scheme;

A detailed water balance analysis has been conducted for the Oakdale site including a multi-criteria sustainability analysis to assess the available options. The analysis is presented in a separate report contained in Appendix B. The key results are summarised in Table 1.

Table 1 Summary of Key Water Balance Results (Stages 1-4, 'average' rainfall conditions)

Option	Total Water Demand (ML/pa)	Potable Water Saving	Potable Water Consumption (ML/pa)
Based on 27 Equivalent Persons per generic warehouse			
Lot Scale[1]	186	70%	56
Cluster Scale[2]	186	71%	55
Based on 55 Equivalent Persons per generic warehouse			
Lot Scale[3]	237	68%	76

1. Based on Option 1a_Lots27_0_0 - Lot Scale Servicing, with 27 equivalent persons per generic warehouse facility and 0% rainfall wet weather infiltration.

2. Based on Option 2_Clus27_1_3 - Cluster Scale Servicing, with 27 equivalent persons per generic warehouse facility and 1.3% rainfall wet weather infiltration.

3. Based on Option 1b Lots55_1_3 - Lot Scale Servicing, with 55 equivalent persons per generic warehouse facility and 1.3% rainfall wet weather infiltration.

Figure 3 provides a diagrammatic representation of the proposed water management strategy.

6. Sewer Servicing

6.1 Existing Sewerage Infrastructure

The nearest existing sewerage infrastructure to the Stage 1-3 development area is a 525 mm diameter sewer carrier (Ropes Creek Carrier) located alongside Ropes Creek downstream of the proposed development area (approximately 1.3 km from the site).

The nearest existing sewerage infrastructure to the Stage 4 development area is the sewerage reticulation infrastructure associated with the M7 Business Hub immediately north of the Main Water Supply Pipelines. This existing development site drains to the Eastern Creek Carrier.

The proposed development site does not form part of any existing published Developer Servicing Plans (DSP). The proposed development site can be divided into three separate gravity catchments; the Ropes Creek, Kemps Creek and Reedy Creek catchments. Both Ropes Creek and Kemps Creek catchment drain naturally to the St Marys Sewage Treatment Plant (STP) while Reedy Creek drains naturally to the Quakers Hill STP.

The *Draft* St Marys Wastewater DSP (2006) has been reviewed and it is similar to previous issues of the DSP, in that no land south of the Main Water Supply Pipeline forms part of the catchment plan, and hence there are no system upgrades identified regarding the development of the site.

Sydney Water has indicated that there is no capacity within the current sewer system for the proposed development site and that major system augmentation/extension would be required for Sydney Water to service the site.

6.2 Sewerage Servicing Strategy

Stages 1-3 of the proposed development site can be divided in to two separate gravity catchments, the Ropes Creek and Kemps Creek catchments. Stage 4 drains predominately to Reedy Creek, a tributary of Eastern Creek and the remainder drains towards a tributary of Ropes Creek.

Given the constraints in the regional sewerage system, it is not proposed to connect the development site to the existing Sydney Water sewerage system.

Stages 1-3 are proposed to be serviced as follows depending on the progress of development, final lot sizes and proposed end uses within each Stage of development:

- Each of the lots or a group/cluster of lots will be serviced by their own dedicated sewage treatment system to treat all sewage to recycled water standards. The recycled water would be used within each lot/cluster to service non-potable water end-uses such as toilet flushing, truck washing, air conditioning cooling and garden watering. Any recycled water that may become surplus to the non-potable water demands would be disposed of by irrigation in an area allocated on each lot (where on-site systems are provided), or to a common irrigation area (where a cluster system is provided); and
- A collection system and emergency / buffer storage system will be located either on each lot (for on-site systems) or adjacent to the cluster treatment plant (for cluster systems).

The treatment plants and recycled water systems would be operated and maintained by the developer.

The southern portion of Site 8 of the WSEH could be serviced in a similar manner to Stages 1 – 3 of Oakdale. The eastern portion of Site 8 (including Stage 4 of Oakdale) could be serviced in a similar

manner as Stages 1-3 or potentially via a connection to the Eastern Creek Carrier (subject to Sydney Water approval).

A detailed water balance analysis has been conducted for the Oakdale site including a multi-criteria sustainability analysis to assess the available options. The analysis is presented in a report contained in Appendix B. The sewer servicing strategy is outlined in detail in the Sewer Servicing Strategy Report contained in Appendix C.

Table 2 summarises the results for both the Cluster and Lot scale servicing options.

Table 2 Sewage Generation Rates

Option	Sewage generation (ML/pa)	Surplus Recycled Water to be Managed (ML/pa)	Approximate Irrigation Area Required for Surplus (m2)	Approximate Buffer Storage Required (m^3)
Based on 27 Equivalent Persons per generic warehouse				
Lot Scale[1]	46 ML/pa for development (or 0.3 ML/pa per Lot)	0	0	0
Cluster Scale[2]	67 ML/pa for development (or 11 ML/pa per Cluster)	19 ML/pa for development (or 3 ML/pa per Cluster)	16,000 m^2 (or 2,700 m^2 per Cluster)	7,700 m^3 (or 1,290 m^3 per Cluster)
Based on 55 Equivalent Persons per generic warehouse				
Lot Scale[3]	110 ML/pa for development (or 0.8 ML/pa per Lot)	31 ML/pa for development (or 0.2 ML/pa per Lot)	50,000 m^2 (or 380 m^2 per Lot)	5,300 m^3 (or 40 m^3 per Lot)

1. Based on Option 1a_Lots27_0_0 - Lot Scale Servicing, with 27 equivalent persons per generic warehouse facility and 0% rainfall wet weather infiltration.

2. Based on Option 2_Clus27_1_3 - Cluster Scale Servicing, with 27 equivalent persons per generic warehouse facility and 1.3% rainfall wet weather infiltration.

3. Based on Option 1b Lots55_1_3 - Lot Scale Servicing, with 55 equivalent persons per generic warehouse facility and 1.3% rainfall wet weather infiltration.

The cluster scale servicing option was ranked the highest following the multi-criteria sustainability analysis. Lot scale servicing was ranked either 2nd or 3rd depending on the analysis method adopted.

Figure 3 provides a diagrammatic representation of the proposed sewage management strategy.

MAIN WATER SUPPLY PIPELINE

ROPES CREEK

MAIN WATER SUPPLY PIPELINE

EXISTING 132kV FEEDER 93X

LOT 2
DP120673
(STAGE 1)

OLD WALLGROVE ROAD

BURLEY ROAD

LOT 1
DP120673

PROPOSED ZONE SUBSTATION

POTENTIAL WATER RESERVOIR SITE

EASEMENT FOR POWER 60.96m WIDE. (TO BE CONFIRMED)

POTENTIAL WATER RESERVOIR SITE

SITE 8 WSEH SOUTHERN PORTION

EASEMENT FOR POWER 121.92m WIDE.

EASEMENT FOR POWER 60.96m WIDE.

BAKERS ROAD

LOT 82
DP752041

LOT 87
DP752041

SERVICES LEGEND

- PROPOSED TELCO
- EXISTING TELCO
- PROPSED GAS
- EXISTING GAS
- PROPOSED STAGE 1 ELECTRICAL
- SITE BOUNDARY
- PROPOSED ELECTRICAL
- EXISTING ELECTRICAL
- PROPOSED WATER
- EXISTING WATER
- LOT BOUNDARY

N

0 100 200 300m

SCALE 1:10000 AT ORIGINAL SIZE

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GOODMAN INTERNATIONAL LTD
OAKDALE CONCEPT PLAN

EXISTING SERVICES AND PROPOSED SERVICING

job no. 21-15101
rev no. B

scale | 1:10000 for A3 date | DECEMBER 2007

Figure 2A

Level 6, 20 Smith St Parramatta NSW 1740 Australia PO Box 788 Parramatta NSW 2124 T 61 2 8898 8800 F 61 2 8898 8810 E sydmail@ghd.com.au W www.ghd.com.au

Plot Date: 10 December, 2007 - 7:55 PM Cad File No: G:\21\15101\CADD\Drawings\21-15101-ICPFIG002A.dwg

SERVICES LEGEND

- PROPOSED TELCO
- EXISTING TELCO
- PROPSED GAS
- EXISTING GAS
- PROPOSED STAGE 1 ELECTRICAL
- SITE BOUNDARY
- PROPOSED ELECTRICAL
- EXISTING ELECTRICAL
- PROPOSED WATER
- EXISTING WATER
- LOT BOUNDARY

OLD WALLGROVE ROAD

EXISTING EASTERN CREEK ZONE SUBSTATION

REEDY CREEK

MAIN WATER SUPPLY PIPELINE

ROPES CREEK

SITE 8 WSEA EASTERN PORTION

EXISTING ZONE SUBSTATION

LOT 2
DP120673
(STAGE 1)

OLD WALLGROVE ROAD

EXISTING 132kV FEEDER 93X

BURLEY ROAD

PROPOZED ZONE SUBSTATION

POTENTIAL WATER RESERVOIR SITES

N

0 100 200 300m

SCALE 1:10000 AT ORIGINAL SIZE

GHD CLIENTS | PEOPLE | PERFORMANCE

GOODMAN INTERNATIONAL LTD
OAKDALE CONCEPT PLAN

EXISTING SERVICES AND PROPOSED SERVICING

scale | 1:10000 for A3 date | DECEMBER 2007

job no. | 21-15101
rev no. | B

Figure 2B

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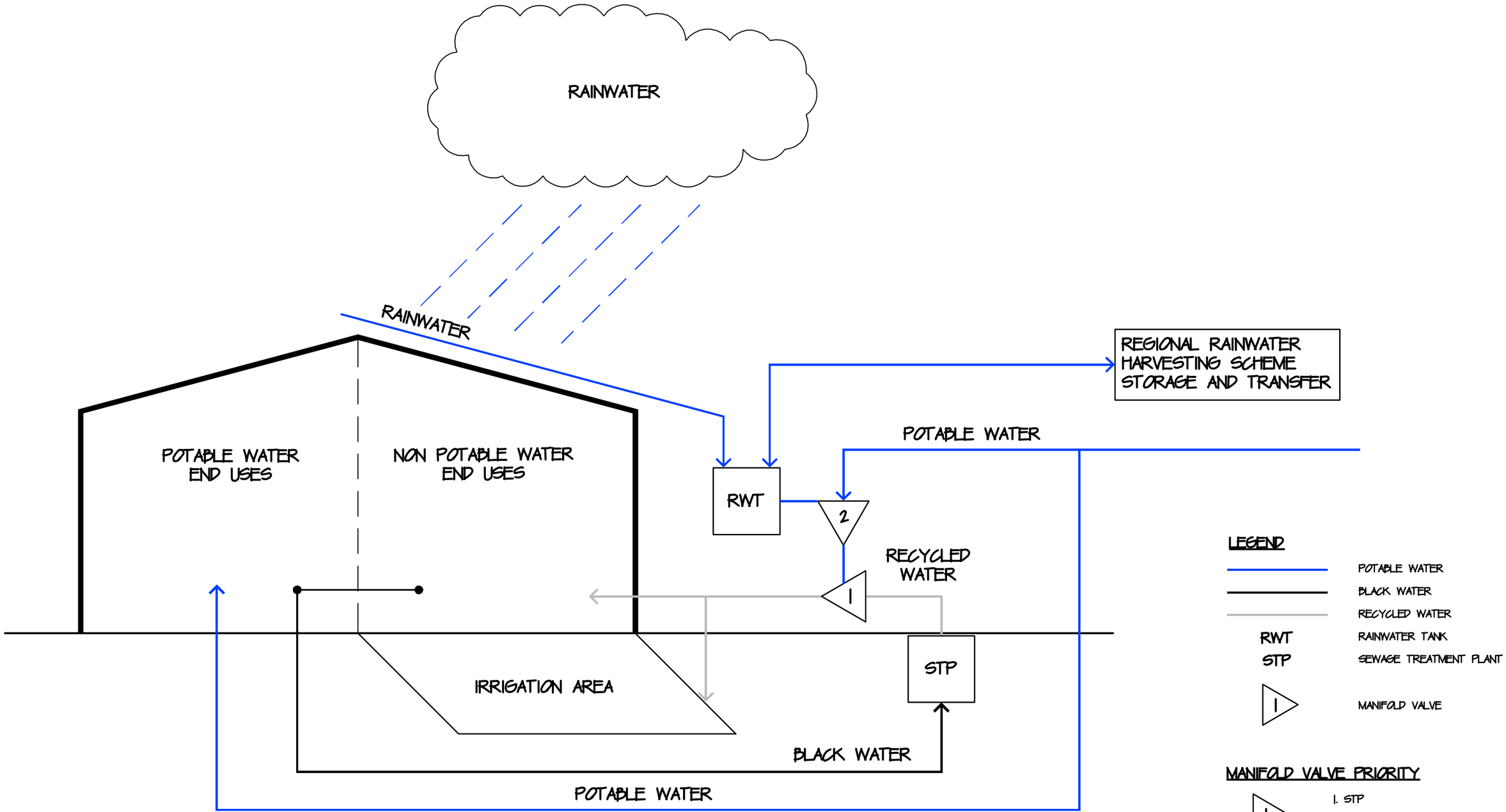
Plot Date: 10 December, 2007 - 7:55 PM Cad File No: G:\21\15101\CADD\Drawings\ 21-15101-ICPFIG002B.dwg



LEGEND

- POTABLE WATER
- BLACK WATER
- RECYCLED WATER
- RWT — RAINWATER TANK
- STP — SEWAGE TREATMENT PLANT
- 1 — MANIFOLD VALVE

MANIFOLD VALVE PRIORITY

1
1. STP
2. RWT

2
2. RWT
3. POTABLE WATER

GHD CLIENTS | PEOPLE | PERFORMANCE

GOODMAN INTERNATIONAL LTD
OAKDALE CONCEPT PLAN
PROPOSED SERVICING STRATEGY (LOT SCALE)
scale | NTS for A3 date | DECEMBER 2007

job no. | 21-15101
rev no. | B

Figure 03

Level 6, 20 Smith St Parramatta NSW 1740 Australia PO Box 788 Parramatta NSW 2124 **T** 61 2 8898 8800 **F** 61 2 8898 8810 **E** sydmail@ghd.com.au **W** www.ghd.com.au

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Appendix A

Authorities Correspondence

GHD CLIENTS | PEOPLE | PERFORMANCE

23 March 2007

Alinta
PO Box 6300
Frenchs Forest Delivery Centre
NSW

Our ref: 21/15101/2839
Your ref:

Attn: Mr Neale Hilton

Dear Neale

Southpipe Distribution Hub - Erskine Park
Gas Servicing

As discussed over the telephone on the 23 March 2007, Macquarie Goodman are proposing to develop a parcel of land in Erskine Park known as the "Southpipe Distribution Park". The area of land in question consists of Lots 1 and 2 DP 120673, Lot 82 DP752041 and Lot 1 DP 843901. The proposed development site forms part of the precinct known as the Western Sydney Employment Hub.

Macquarie Goodman intends to lodge a development application via the Part 3A planning process with the Department of Planning for an industrial / commercial development. A plan showing the area of land that will be the subject of the development application is enclosed (Figure 1).

An application via the Part 3A planning process requires a review of servicing of the proposed development site be undertaken. In this regard, we write to request advice from Alinta on how the proposed development site could be serviced with gas and more specifically, advice on:

1. Servicing requirements for Stage 1 of the proposed development and the timing associated with providing gas to Stage 1. In regard to Stage 1, we also request advice on any interim servicing solutions that may be available that would allow a portion of Stage 1 to be developed early while the infrastructure required to service the remainder of the first stage is delivered.
2. The ultimate servicing requirements for the remaining Stages of the proposed development site and indicative timing of any necessary infrastructure.

In order to assist Alinta in their review of gas servicing of the proposed development site the following information is provided:

- A preliminary road and lot layout plan is attached. A preliminary site masterplan is also attached (SP SK21 – A) that indicates the first three stage areas. Both of these plans are indicative only and should <u>not</u> be used as a basis to calculate loads. A summary of the net developable areas of each stage follows:
  - Stage 1: **36 net ha;** (i.e. excludes roads, watercourses etc); (62 gross ha)
  - Stage 2: **84 net ha**; (141 gross ha)
  - Stage 3: **76 net ha**; (127 gross ha)
  - Stage 4: **75 <u>gross</u> ha** (no net area available – refer bullet points below marked *)

GHD Pty Ltd ABN 39 008 488 373 Level 6, 20 Smith Street Parramatta NSW 2150 PO Box 788 Parramatta NSW 2124 Australia
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- Stage 1 will be developed immediately following approval of the development application;
- At this point in time it is envisaged that the Stage 1 development area will incorporate a warehouse / distribution centre of an area of 60,0000 m^2 (or 6 ha) with 90% of this area as warehouse space and 10% of the area as office space;
- The assessment of the remaining net areas in Stage 1 (that is 30 net ha) and the other three Stages of development can be based generally on the following:
  - 50% warehouse area;
  - 10% associated office area;
  - 30% hardstand area; and
  - 10% landscaped area.
- No cold storage facilities are planned for at this stage nor is "heavy" industry type development proposed that would incorporate industrial processes;
- *Stage 4 consists of the existing Austral brickworks (Lot 1 DP 843901) off Old Wallgrove Road opposite the Stage 1 area and will be the final stage of land developed. The timing associated with development of this final stage cannot be confirmed at this point in time but is not expected to begin within the next 20 years; and
- *Stage 4 is envisaged to be of a similar nature to the previous three stages and it can be assumed that similar loads per gross area calculated for the first 3 stages can be applied over the total Stage 4 area (75 gross ha);

Finally, we also seek Alinta's advice on whether there is any relevant information that Macquarie Goodman should be aware of such as major trunk gas infrastructure on the site and their associated requirements, as well as any other constraints that may impact on the development site so that such information can be considered in the masterplanning process.

Thank you in advance for your assistance. It would be appreciated if your advice could be provided by the 13 April 2007.

If you have any further queries please contact either the undersigned. We would be happy to meet with you at your earliest convenience should further information / clarification be required.

Yours faithfully
GHD Pty Ltd

Chris McDougall
Civil Engineer
02 8898 8858

Attachment: Figure 1 Rev A – Site Locality
SP SK21 Rev A – Preliminary St 1-3 Masterplan
21-15101-SK002 Rev C – Proposed subdivision layout (preliminary)

From: "Hilton, Neale" <Neale.Hilton@alinta.net.au> on 28/03/2007 10:22:21 AM

Repository: 2115101 Austral Land Site Servicg & Devpmt Constraints Rvw

To: <Chris.McDougall@ghd.com.au>

cc:

Subject: Re: Gas servicing of "Southpipe Distribution Hub" proposed development site

Chris,

Thank you for your advice on this proposed industrial subdivision. Alinta has investigated the location and potential for this developable area.

Currently our infrastructure is located in Old Wallgrove Rd, and terminates approximately 400m north from Burley Rd. This infrastructure is a high pressure steel network reticulating at 1050kPa. Our policy is not to reticulate without a known gas load as costs are prohibitive and network capacity may be compromised. Our experience is warehousing does not have a gas demand and this particular natural gas infrastructure is suited to heavy industry supply, similar to the production of bricks.

<<Old Wallgrove Rd..jpg>>

Neale Hilton

Network Development Manager-Sydney

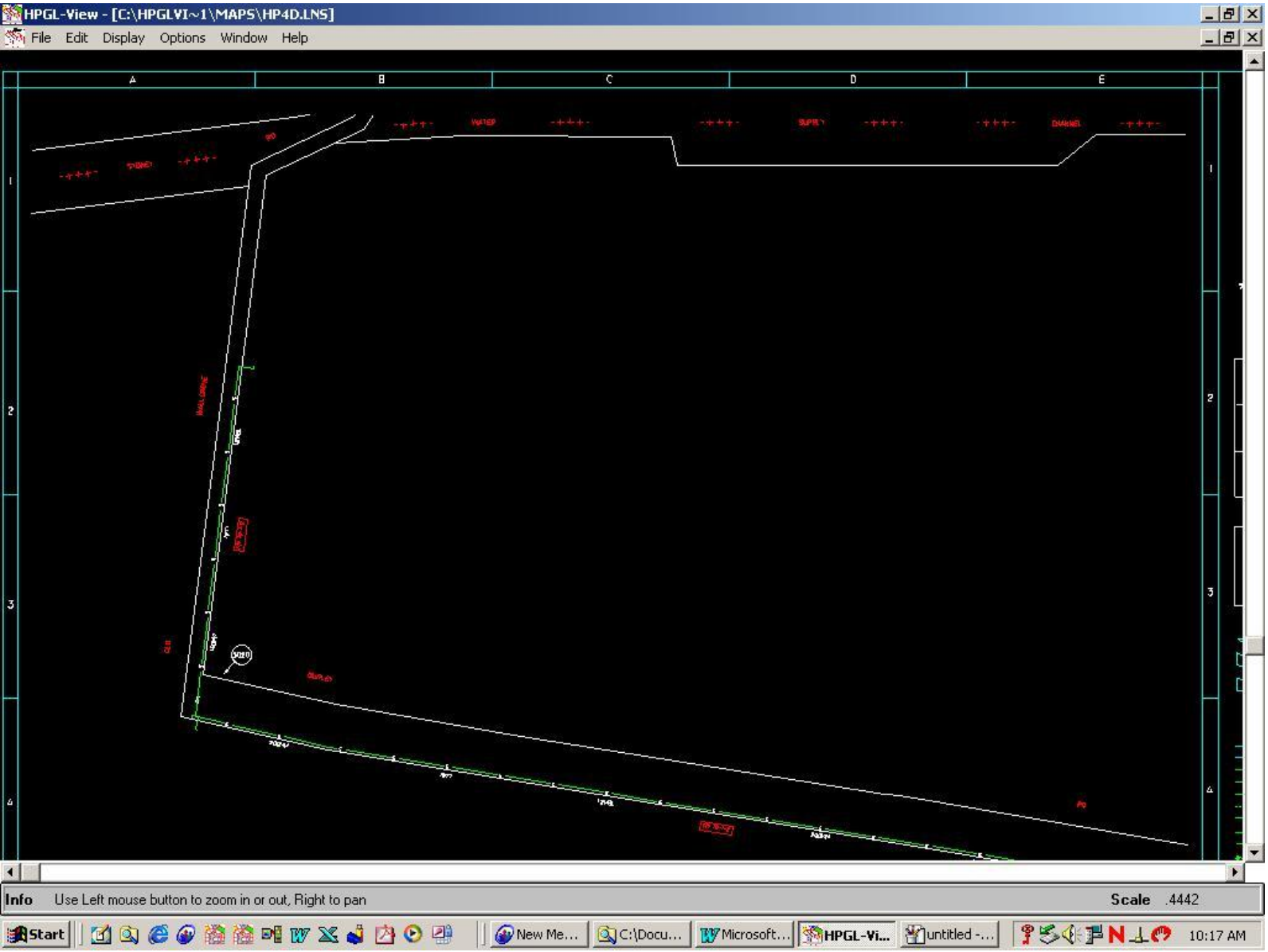
Alinta Asset Management

18A Rodborough Rd, Frenchs Forest NSW 2086

PO Box 6300 Frenchs Forest Delivery Centre NSW 1640

PH (02) 8977 6851 Fax (02) 8977 6831

 - Old Wallgrove Rd..jpg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File Edit Display Options Window Help
A
B
C
D
E
1
2
3
4
Info Use Left mouse button to zoom in or out, Right to pan
Scale .4442
Start
New Me...
C:\Docu...
Microsoft...
HPGL-Vi...
untitled -...
10:17 AM

RECORD OF TELEPHONE DISCUSSION

JOB No. 21/15101 TITLE: Oakdale FILE:

PHONE CALL TO / FROM: Neale Hilton TIME: 11:30 am

OF: Alinta PHONE: DATE: 17/4/07

DETAILS OF MESSAGE:

Question: Further to the advice received in the email from Alinta (would site be serviced via high pressure main on Burley Rd / Old Wallgrove Rd?

Answer: Yes

Further information:
Alinta will only run gas lines in if there is a known load, otherwise developer would have to fund if they still wanted gas through subdivision.

RECORDED BY: *Chris McDougall*

GHD CLIENTS|PEOPLE|PERFORMANCE

22 March 2007

Integral Energy
PO Box 6366
Blacktown NSW 2148

Our ref: 21/15101/126854
Your ref:

Attn: Mr Len Blair-Hickman

Dear Len

Southpipe Development Site
Electrical Servicing

On the 15 March 2007 representatives of Macquarie Goodman and GHD met with Charles Howat and a number of other Integral Energy representatives to discuss Macquarie Goodman's proposal to develop a parcel of land in Erskine Park known as the "Southpipe Distribution Park". The area of land in question consists of Lots 1 and 2 DP 120673, Lot 82 DP752041 and Lot 1 DP 843901. The proposed development site forms part of the precinct known as the Western Sydney Employment Hub.

Macquarie Goodman intends to lodge a development application via the Part 3A planning process with the Department of Planning for an industrial / commercial development. A plan showing the area of land that will be the subject of the development application is enclosed (Figure 1).

An application via the Part 3A planning process requires a review of servicing of the proposed development site be undertaken. In this regard, we write to request advice from Integral Energy on how the proposed development site could be serviced with power and more specifically, advice on:

1. Servicing requirements for Stage 1 of the proposed development and the timing associated with providing power to Stage 1. In regard to Stage 1, we also request advice on any interim servicing solutions that may be available that would allow a portion of Stage 1 to be developed early while the infrastructure required to service the remainder of the first stage is delivered.
2. The ultimate servicing requirements for the remaining Stages of the proposed development site and indicative timing of any necessary infrastructure.

In order to assist Integral Energy in their review of electrical servicing of the proposed development site the following information is provided:

- At the aforementioned meeting a drawing was provided to Integral Energy that indicated a preliminary road and lot layout. The latest revision of this plan is attached. A preliminary site masterplan is also attached (SP SK21 – A) that indicates the first three stage areas. Both of these plans are indicative only and should not be used as a basis to calculate loads. A summary of the net developable areas of each stage follows:
  - Stage 1: **36 net ha;** (i.e. excludes roads, watercourses etc); (62 gross ha)
  - Stage 2: **84 net ha**; (141 gross ha)
  - Stage 3: **76 net ha**; (127 gross ha)

- Stage 4: **75 gross ha** (no net area available – refer bullet points below marked *)

- Stage 1 will be developed immediately following approval of the development application;
- At this point in time it is envisaged that the Stage 1 development area will incorporate a warehouse / distribution centre of an area of 60,0000 m^2 (or 6 ha) with 90% of this area as warehouse space and 10% of the area as office space;
- The assessment of the remaining net areas in Stage 1 (that is 30 net ha) and the other three Stages of development can be based generally on the following:
  - 50% warehouse area (not air conditioned);
  - 10% associated office area (air conditioned);
  - 30% hardstand area (security lighting provided); and
  - 10% landscaped area (no electrical requirements).
- No cold storage facilities are planned for at this stage;
- An allowance should be made in Stage 1 for the supply of power to a sewage treatment plant, a water pumping station and street lighting for roads in addition to the loads from the individual development sites;
- An allowance should be made in the remaining stages for three sewage pumping stations, a water booster pumping station and street lighting for the associated road network (a preliminary road network layout is indicated on the attached plan);
- *Stage 4 consists of the existing Austral brickworks (Lot 1 DP 843901) off Old Wallgrove Road opposite the Stage 1 area and will be the final stage of land developed. The timing associated with development of this final stage cannot be confirmed at this point in time but is not expected to begin within the next 20 years; and
- *Stage 4 is envisaged to be of a similar nature to the previous three stages and it can be assumed that similar loads per gross area calculated for the first 3 stages can be applied over the total Stage 4 area (75 gross ha);

Finally, we also seek Integral Energy's advice on whether there is any relevant information that Macquarie Goodman should be aware of such as areas required for zone substation(s), their preferred location(s), their space requirements as well as any other constraints that may impact on the development site so that such information can be considered in the masterplanning process.

Thank you in advance for your assistance and for your colleagues' time thus far. It would be appreciated if your advice could be provided by the 13 April 2007.

If you have any further queries please contact either the undersigned or Mr David Colpo (Macquarie Goodman – ph 9230 7211). We would be happy to meet again at your earliest convenience should further information / clarification be required.

Yours faithfully
GHD Pty Ltd

Chris McDougall
Civil Engineer
2 9239 7396

Attachment: Figure 1 Rev A – Site Locality
SP SK21 Rev A – Preliminary St 1-3 Masterplan
21-15101-SK002 Rev C – Proposed subdivision layout (preliminary)

cc Mr Charles Howat – Integral Energy

INTEGRAL energy

The power is in your hands

Chris McDougall
GHD Pty Ltd
PO Box 788
Parramatta NSW 2124

30 April 2007

Dear Chris,

Southpipe Development Site

Thank you for your enquiry into the servicing of the proposed Southpipe Industrial development with electricity. This enquiry has been registered under Customer Application Process (CAP) Number ENL 0606; please quote this number for all future correspondence. The relevant staff have reviewed your enquiry and offer the following advice.

Integral Energy have assessed the ultimate load for the development to be in the order of 55 MVA. A load of this magnitude will require a new Zone Substation to be established to provide supply to the ultimate load of 55 MVA.

Typically a 1 Ha square block of land is required for a Zone Substation site. The preliminary staging information and overall proposed subdivision layout submitted to Integral Energy indicates a viable location between stage 1 and 2 areas at the intersection of Burley Road and the internal subdivision roads. This area is located close to Integral Energy's 132 kV feeder 93X which is proposed to be used as the primary voltage to the substation.

The timing associated with the establishment of the proposed Zone Substation are inclusive of, but not limited to:

- Substation construction lead times which are dependant on the relative progress of Integral Energy's Capital Investment Program.
- Possible augmentation requirements to 132 kV feeder 93X.
- Works associated with Transgrid's 330 kV Kemps Creek Substation.
- Staging of the land development
- Developer and or development demand.

Stage 1 of the proposed development is located approximately 2.5 kilometres away from the existing Eastern Creek Zone Substation located on the corner of Old Wallgrove Rd and Roberts Rd. Therefore stage 1 (36 Ha of net developable area) can be serviced in the

interim. The expected load required to service stage 1 is approximately 7.2 MVA based on an industry accepted load density of 20 MVA / sq.km. This load will require at least 2 (most likely 3) 11 kV Cu XLPE cables from Eastern Creek Zone Substation as required. Stages 2 and 3 however, will require the new Zone Substation.

The connection Assets required to service the proposed development are funded by the developer/customer in accordance with the IPART determination for capital contributions. The connection assets include the 11 kV feeders from a zone substation, the distribution substations and low voltage and street lighting reticulation throughout the development.

If you require any further advice, please contact me on 9853 5189.

Yours faithfully

Craig Willebrand
Engineering Officer
Network Connections
In reply please quote file no.: ENL 0606

From: Chris McDougall/Sydney/GHD/AU on 20/08/2007 02:13:57 PM
Repository: 211510105 southpipe - services and misc

To: craig.willebrand@integral.com.au
cc: charles.howat@integral.com.au
Subject: Integral File No. ENL0606 - Southpipe Development Site

Craig,

Thankyou for your letter received on the 30 April 2007 (your file No. ENL 0606) and subsequent clarifications via telephone.

In your letter you have provided advice as to how the site now known as "Oakdale" (previously known as "Southpipe") could be serviced with electricity both in the interim and then for the ultimate development area. A copy of your letter is attached for your reference.

We have now been requested by Goodman International Ltd to investigate the possible servicing solutions for the area known as "Site 8" within the Western Sydney Employment Hub as defined in the NSW Government's Metropolitan Strategy (refer attached plan). You will note that the Oakdale site that has been the subject of investigations to date falls within Site 8.

The Oakdale site represents a gross area of 405 ha.

The total area of Site 8 (including the Oakdale site) equates to 656 ha. Therefore, the additional area within Site 8 over and above the Oakdale site is approximately 251 ha.

We respectfully request Integral Energy advice regarding the possible servicing solutions for the entire Site 8. The advice that we are looking for needs only be "high level" advice and may need only consist of advice such as indicating whether a second zone sub-station would be required over and above the zone sub-station already nominated etc.

To assist in any assessment of loads our breakdown of the development of Oakdale as defined in our letter dated 22 March 2007 (attached) can be used as the basis for the review.

Goodman International Ltd would like to obtain Integral Energy advice 1.5 weeks from now. We acknowledge this is not a lot of time but any advice that can be forwarded would be appreciated.

If you have any further queries please do not hesitate to contact myself.

Chris McDougall
Senior Civil Engineer - Parramatta

chris.mcdougall@ghd.com.au
Tel: 02 8898 8858 | Fax: 02 8898 8810 | Mob: 0439 869 007

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Australia http://www.ghd.com.au


Site 8 and Oakdale areas defined.pdf


126854 and attachment.zip


Integral letter 30-04-07.pdf

****

Please consider our environment before printing this email.

****

"Craig Willebrand" <Craig.Willebrand@integral.com.au>
04/09/2007 11:31 AM

To <Chris.McDougall@ghd.com.au>
cc
bcc
Subject RE: Integral File No. ENL0606 - Southpipe Development Site

Repository: 2115101 "Austral Land Site Servicg & Devpmt Constraints Rvw"

Chris,

Our planners have reviewed the connection requirements for site 8 as indicated in your email of 20th August 2007. The result of the analysis is that a further Zone Substation will be required to service the additional 251 Ha of employment lands.The location of the Zone Substation can be determined when lot and road layouts are available and the staging for the development.

If you require any further information please call me on the following numbers.

Regards,
Craig Willebrand
Engineering Officer
Major Projects
Integral Energy
(02) 9853 5189
0434 075 747

craig.willebrand@integral.com.au

From: Chris.McDougall@ghd.com.au [mailto:Chris.McDougall@ghd.com.au]
Sent: Monday, 20 August 2007 2:14 PM
To: Craig Willebrand
Cc: Charles Howat
Subject: Integral File No. ENL0606 - Southpipe Development Site

Craig,

Thankyou for your letter received on the 30 April 2007 (your file No. ENL 0606) and subsequent clarifications via telephone.

In your letter you have provided advice as to how the site now known as "Oakdale" (previously known as "Southpipe") could be serviced with electricity both in the interim and then for the ultimate development area. A copy of your letter is attached for your reference.

We have now been requested by Goodman International Ltd to investigate the possible servicing solutions for the area known as "Site 8" within the Western Sydney Employment Hub as defined in the NSW Government's Metropolitan Strategy (refer attached plan). You will note that the Oakdale site that has been the subject of investigations to date falls within Site 8.

The Oakdale site represents a gross area of 405 ha.

The total area of Site 8 (including the Oakdale site) equates to 656 ha. Therefore, the additional area within Site 8 over and above the Oakdale site is approximately 251 ha.

We respectfully request Integral Energy advice regarding the possible servicing solutions for the entire Site 8. The advice that we are looking for needs only be "high level" advice and may need only consist of advice such as indicating whether a second zone sub-station would be required over and above the zone sub-station already nominated etc.

To assist in any assessment of loads our breakdown of the development of Oakdale as defined in our letter dated 22 March 2007 (attached) can be used as the basis for the review.

Goodman International Ltd would like to obtain Integral Energy advice 1.5 weeks from now. We acknowledge this is not a lot of time but any advice that can be forwarded would be appreciated.

If you have any further queries please do not hesitate to contact myself.

Chris McDougall
Senior Civil Engineer - Parramatta

chris.mcdougall@ghd.com.au
Tel: 02 8898 8858 | Fax: 02 8898 8810 | Mob: 0439 869 007

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Australia http://www.ghd.com.au

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30 May 2007

Sydney Water Corporation
51 Hermitage Road
West Ryde NSW 2114

Our ref: 21/15101/3071
Your ref:

Attn: Mr Dennis Cumerlato

Dear Dennis

Proposed Oakdale Development Site
Water and Sewer Servicing

Thankyou for the opportunity to meet with yourself on 24 May 2007 to discuss Macquarie Goodman's proposal to develop a parcel of land in Erskine Park known as "Oakdale". The area of land in question consists of Lots 1 and 2 DP 120673, Lot 82 DP752041 and Lot 1 DP 843901. The proposed development site forms part of the precinct known as the Western Sydney Employment Hub.

Macquarie Goodman intends to lodge a development application via the Part 3A planning process with the Department of Planning for an industrial / commercial development. A plan showing the area of land that will be the subject of the development application is enclosed (Figure 1).

Potable Water

An application via the Part 3A planning process requires a review of servicing of the proposed development site be undertaken. In this regard, we write to request advice from Sydney Water on how the proposed development site could be serviced with potable water and more specifically, advice on:

1. Servicing requirements for Stage 1 of the proposed development and the timing associated with providing potable water to Stage 1. In regard to Stage 1, we also request advice on any interim servicing solutions that may be available that would allow a portion (or potentially all) of Stage 1 to be developed early while the infrastructure required to service the remainder of the site is delivered.
2. The ultimate servicing requirements for the remaining Stages of the proposed development site and indicative timing of any necessary infrastructure.

With regards to Point 1 above, it is our understanding from the feedback received at our meeting that Sydney Water have begun investigating whether Stage 1 (or a portion of) can be serviced with potable water from the Minchinbury Water Supply Zone. As requested by Sydney Water at the meeting, please find attached an indicative site masterplan (Drawing SP SK21 Rev C) marked up with Stage 1 indicative proposed ground RL's. An average daily water demand rate of approximately 2.5 kL/net ha/day has been determined by GHD for the proposed development type. This demand rate is based on an end use analysis of a generic facility with further comparison with actual water usage rates for other similar development scenarios in western Sydney.

In order to assist Sydney Water in their review of potable water servicing of the proposed development site the following information is provided:

GHD Pty Ltd ABN 39 008 488 373 Level 6, 20 Smith Street Parramatta NSW 2150 PO Box 788 Parramatta NSW 2124 Australia
T 61 2 8898 8800 **F** 61 2 8898 8810 **E** ptamail@ghd.com.au **W** www.ghd.com.au

- A preliminary site masterplan is attached (SP SK21 – C) that indicates the first three stage areas. This plan is indicative only. A summary of the net developable areas of each stage follows:
  - Stage 1: **36 net ha;** (i.e. excludes roads, watercourses etc); (62 gross ha)
  - Stage 2: **84 net ha**; (141 gross ha)
  - Stage 3: **76 net ha**; (127 gross ha)
  - Stage 4: **75 gross ha** (no net area available – refer bullet points below marked *)
- Stage 1 will be developed immediately following approval of the development application;
- At this point in time it is envisaged that the Stage 1 development area will incorporate a warehouse / distribution centre of an area of 60,0000 m^2 (or 6 ha) with 90% of this area as warehouse space and 10% of the area as office space;
- The assessment of the remaining net areas in Stage 1 (that is 30 net ha) and the other three Stages of development can be based generally on the following:
  - 50% warehouse area;
  - 10% associated office area;
  - 30% hardstand area; and
  - 10% landscaped area.
- *Stage 4 consists of the existing Austral brickworks (Lot 1 DP 843901) off Old Wallgrove Road opposite the Stage 1 area and will be the final stage of land developed. The timing associated with development of this final stage cannot be confirmed at this point in time but is not expected to begin within the next 20 years; and
- *Stage 4 is envisaged to be of a similar nature to the previous three stages and it can be assumed that similar demands for the first 3 stages can be applied over the total Stage 4 area (75 gross ha);

With regards to the ultimate site servicing requirements we will contact you shortly to arrange a meeting to determine the scope of analysis / investigation work that will be required to develop the "ultimate" servicing strategy. Macquarie Goodman is willing to assist Sydney Water where possible in this regard.

Sewer

With regards to sewer servicing, as discussed at the meeting Macquarie Goodman are investigating a number of options that are available to them including on-site treatment and recycling. If there are servicing plans or options that you aware of that may impact on any sewer servicing strategy for the site that you feel Macquarie Goodman should be aware of please advise.

Thank you in advance for your assistance and for you and your colleagues' time thus far. It would be appreciated if your advice on Stage 1 (or interim servicing solution) water servicing could be provided by the 13 June 2007. We understand that the ultimate servicing requirements may take some time to determine, but would like to stress that the Stage 1 (or interim) solution is more important to resolve in the immediate term.

If you have any further queries do not hesitate to myself. We would be happy to meet again at your earliest convenience should further information / clarification be required.

Yours faithfully
GHD Pty Ltd

Chris McDougall
Civil Engineer
02 8898 8858

Attachment: Figure 1 Rev A – Site Locality
SP SK21 Rev C – Preliminary St 1-3 Masterplan

cc Mr David Colpo – Macquarie Goodman

8 August 2007

Mr Kym Dracopoulos
National Manager – Infrastructure and Design
Macquarie Goodman Management Ltd
GPO Box 4703
SYDNEY NSW 2001

Dear Mr Dracopoulos

Re: Temporary water supply to future development of Lot 2, DP120673 – Austral Bricks' site south of Warragamba Pipeline, Eastern Creek ("Oakdale")

I refer to Sydney Water's recent discussions with APP/MG and our ongoing servicing investigations regarding the provision of temporary water supply to the proposed development. I understand Macquarie Goodman will seek necessary approvals from Council and other relevant regulatory authorities for the provision of on-site wastewater treatment, disposal and/or recycled water facilities to the abovementioned development area.

Sydney Water anticipates that the subject development area may be rezoned in the future under the State Environmental Planning Policy (SEPP) 59, as part of the Western Sydney Employment Hub (WSEH) area. Once the land is rezoned and released for development, Sydney Water may be able to allow temporary water supply to a gross area of 62.23 hectares or approximately 49 developable hectares of employment land.

The subject development area naturally falls within Sydney Water's Cecil Park Reservoir zone, and currently bulk potable water supply to the area is not available. However, Sydney Water's preliminary investigations indicate that a temporary water supply for the early development of the subject site can be facilitated by the extension of the Minchinbury Elevated Water Supply Zone, subject to the following conditions:

1. Minchinbury second surface reservoir being in operation, and construction and commissioning of the 4 ML Minchinbury Elevated Reservoir, water pumping station and associated pipe, electrical works and fittings by the developer.

2. Construction and commissioning of the 750/600/450mm reservoir outlet main by the proponent of the development, connecting to the existing 375mm water main in Wonderland Drive (See attached plan).

3. Construction of the 375/300mm diameter water main extension from the Old Wallgrove Road to the proposed development site (See attached plan).

    a) The main needs to be located relative to the property line defined by the current alignment of Old Wallgrove Road. This is required for the integrity and adequacy of future water supply needs of the area, and to ensure that the location of the main correctly aligns to the future public road reserve.

b) When a permanent road is constructed, in accordance with any adopted future Precinct Plan for the area, to service development within the Precinct, Sydney Water may require MG to upsize/readjust part of the proposed water main that will service the future development area.

   If a third party is carrying out this augmentation works in the future, MG will be required to contribute its share of the upsizing cost. For this, Sydney Water will require an unconditional bank guarantee/bond of $500,000 from MG prior to the issue of Sydney Water's s73 Compliance Certificate for the construction of the proposed water main.

4. Investigation and final determination of ultimate servicing strategy for the development of future employment lands in the area, particularly land south of the Sydney Catchment Authority's Warragamba water pipeline, ie. WSEH Area 8.

5. Payment of applicable Minchinbury Water DSP charges, as offset arrangement for the Eastern Creek Precinct development will not apply to the subject land.

6. Following determination of future servicing strategy, the subject development will need to be permanently connected to the relevant water supply system, when capacity and supply networks are available, at developer's cost.

Please note, Sydney Water will be prepared to consider a temporary water supply to your proposed initial development at Oakdale, but this is not a firm commitment by Sydney Water to service your land at this stage. You will be advised of Sydney Water's firm requirements and commitment on receipt of a s73 Compliance Certificate from you during the future subdivision development application stage.

If you need any further information or clarifications, please contact me at Sydney Water's West Ryde Office on tel. 9800 6472, email: Dennis.Cumerlato@sydneywater.com.au

Yours sincerely

Dennis Cumerlato
Senior Planner, Hawkesbury/Nepean Area Team

cc. Michael Gray, Senior Project Manager, APP Corporation Pty Ltd
Darren Hunt, Senior Project Manager, Macquarie Goodman
Helal Morshedi, Urban Growth, Sydney Water

From: Chris McDougall/Sydney/GHD/AU on 21/08/2007 12:34:33 PM
Repository: 211510105 southpipe - services and misc

To: dennis.cumerlato@sydneywater.com.au
cc:
Subject: Oakdale and "Site 8" servicing for Goodman Intl

Denis,
Thankyou on behalf of Goodman International Ltd for your letter received from yourself dated 8 Augusts 2007. We appreciate your time with the knowledge of how busy you and Sydney Water are.

Site 8 of the WSEH
As discussed with you on the phone on Thursday last week Goodman International Ltd have asked us to investigate the possible servicing solutions at a strategic level for the area known as "Site 8" within the Western Sydney Employment Hub as defined in the NSW Government's Metropolitan Strategy (refer attached plan). You will note that the Oakdale site that has been the subject of investigations to date falls within Site 8.

The Oakdale site represents a gross area of 405 ha.

The total area of Site 8 (including the Oakdale site) equates to 656 ha. Therefore, the additional area within Site 8 over and above the Oakdale site is approximately 251 ha.

During our discussion you indicated that you thought that the Department of Planning may have already sought such advice from Sydney Water for Site 8 previously. If so, could you please forward a copy of the advice. We understand that it may only consist of very "high level" advice.

With regards to Condition No, 4 of your letter dated the 8 August 2007.
As we discussed over the phone, Goodman International Ltd would like to meet with the relevant Sydney Water officers as soon as they are available to discuss the way forward with identifying, planning for, and the design of the future potable water infrastructure required to service the remaining Stages of the Oakdale development site.

If you have any queries please do not hesitate to contact myself.

Regards
Chris McDougall
Senior Civil Engineer - Parramatta

chris.mcdougall@ghd.com.au
Tel: 02 8898 8858 | Fax: 02 8898 8810 | Mob: 0439 869 007

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Australia http://www.ghd.com.au

Site 8 and Oakdale areas defined.pdf

Appendix B

Water Balance Report

Part 1 – Report including Technical Addendum

Part 2 – Multi-criteria Sustainability Analysis