



# LOWER HUNTER LAND DEVELOPMENT

Concept Plan Infrastructure Report

**Gwandalan**

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**Document Control**

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		Name	Initials	Name	Initials
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## LOWER HUNTER LAND DEVELOPMENT CONCEPT PLAN INFRASTRUCTURE REPORT- GWANDALAN

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## 1. INTRODUCTION

This engineering report has been prepared to supplement the Concept Plan Application to the Department of Planning for the Coal & Allied Industries Limited (Coal & Allied) proposed Gwandalan development. This report addresses the existing and proposed infrastructure required to service the development and the strategic plans governing and guiding development. This report should be read in conjunction with the accompanying Concept Plan Application prepared by Urbis and the Infrastructure Drawings appended to this report.

The following infrastructure elements have been addressed within this report:

- Sewer
- Water
- Electricity
- Gas
- Telecommunications.

In relation to the utility infrastructure listed above, the report addresses the following key issues:

- Existing infrastructure
- Proposed infrastructure
- Consultation undertaken
- Contributions payable (water and sewer only)
- Infrastructure staging

Please note that traffic and transport, stormwater and hydrology, and social infrastructure have been covered in separate reports by other consultants.

## 2. STRATEGIC PLANS

The over-arching strategic document for the Coal & Allied Gwandalan site is the Lower Hunter Regional Strategy (LHRS). The relevant provisions of that strategy are reflected in the Central Coast Regional Strategy (CCRS). The LHRS set out the objectives for the region and the key constraints and drivers to development. Appended to the LHRS Strategy is a list of key infrastructure which is planned to support the anticipated development of the region.

The Gosford City / Wyong Shire Council Water Authority is responsible for water and sewer infrastructure in the area. Gosford City/Wyong Shire Council Water Authority has produced a strategy document entitled, 'WaterPlan 2050' which sets out the Water Authority's long term water supply strategy for the Central Coast.

Energy Australia lists upcoming major capital works projects on its website ([www.energyaustralia.com.au](http://www.energyaustralia.com.au)). Detailed information on recent and upcoming capital works projects can be found in report 'Investing For Future Generations – Our Five Year Network Plan'. The current revision of this report is for the period 2009 to 2014.

No specific strategic plans were identified for Telstra or Jemena (formerly Alinta) in relation to telecommunications and gas infrastructure.

### **3. SEWER**

#### **3.1 Existing and Proposed Infrastructure**

Wyong Shire Council manages the sewer collection and treatment systems within their LGA. The Gwandalan site lies adjacent to the Summerland Point Sewer Treatment Plant (STP). Wyong Shire Council has indicated that the STP has sufficient capacity to service the proposed development with no augmentation works required.

Our own preliminary analysis has identified that due to the topography of the site, three pumping stations and associated rising mains would need to be constructed to connect the Coal & Allied site to the STP. Wyong Shire Council has advised that the rising mains and gravity mains equal to or greater than 300mm diameter require easements. Pumping stations are to be constructed on Council land (underground).

Wyong Shire Council advised that treated effluent from the STP may be available for reticulated grey water use in the development in proportion to the in-flows from the proposed development. This option would require further discussion and negotiation with Council.

#### **3.2 Consultation**

On 4 July 2007 a letter was issued to Wyong Shire Council providing information on the development yield and timing and requesting a meeting to discuss infrastructure planning. This meeting was held on 9 August 2007 on Wyong Shire Council premises. The attendees were Intesar Naoum (Wyong Shire Council), Ken Grantham (Wyong Shire Council), Frank van den Brink (Catylis), Jacinta Holmick (Cardno) and Lisle Butler (Cardno). The outcomes from this meeting are noted in Appendix B (email to Wyong Shire Council dated 9/8/2007).

A follow up was conducted by Cardno to confirm whether the 2007 advice from Wyong Shire Council regarding sewer and water reticulation for the Gwandalan site was still current and valid. An email and telephone exchange was conducted between Wyong Shire Council and Cardno on 21 September 2010. This confirmed that advice from the Council meeting of 9 August 2007 is still current and valid.

#### **3.3 Contributions**

Developer Services Charges (DSPs) are currently levied by Wyong Shire Council for sewer and potable water.

As at 1 July 2010 DSPs for Gwandalan are levied at \$4,119.58 per residential lot for potable water and \$2,438.81 per residential lot for sewer.

#### **3.4 Staging**

The sewer pump stations, rising mains and trunk gravity mains will be provided progressively to suit the development staging. The first stage of the development will provide the connection to the Summerland Point STP and future stages will connect through the first stage of infrastructure.

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## **4. WATER**

### **4.1 Existing and Proposed Infrastructure**

Wyong Shire Council manages the water supply and reticulation for their LGA. The existing suburb of Gwandalan is serviced from Kanangra Reservoir (corner Pacific Highway and Kanangra Drive) via a 450mm diameter trunk water main in Kanangra Drive.

Wyong Shire Council has advised that the existing trunk water main has capacity for the additional demand of the proposed development. The proponent will be required to construct all water mains within the site, including a 200mm diameter ring main and two connections from the ring main to the 450 diameter trunk main.

### **4.2 Consultation**

As above, refer section 3.2.

### **4.3 Contributions**

As above, refer section 3.3.

### **4.4 Staging**

The connection to the trunk water main in Kanangra Drive will occur during the first stage of development. The ring main will be constructed in stages, the completion of the ring main and second connection to the trunk water main will occur in the third or fourth development stage.

## **5. ELECTRICITY**

### **5.1 Existing and Proposed Infrastructure**

An existing zone substation at Lake Munmorah (located on the corner of Carters Rd and Pacific Hwy) services Gwandalan. Energy Australia has advised that the proposed development can be serviced from the existing electrical reticulation within the suburb of Gwandalan to the north of the development site.

### **5.2 Consultation**

Initial telephone conversations were held with Energy Australia's Craig Perry on 13 February 2007.

On 3 July 2007 a letter was issued to Energy Australia providing information on the development yield and timing and requesting a meeting. This meeting was held on 26 July 2007 in Energy Australia's Wallsend office. The attendees were Craig Perry (Energy Australia), Greg Skinner (Energy Australia), Frank van den Brink (Catylis), Jacinta Holmick (Cardno), Paul Malanchuk (Electrical Projects Australia) and Keith Dedden (Coal & Allied).

A follow up was conducted by Cardno to confirm whether the 2007 advice from Energy Australia regarding electrical servicing for the Gwandalan site was still current and valid. An email and telephone exchange was conducted between Energy Australia and Cardno on 21 September 2010. Following these discussions Energy Australia committed to reviewing their previous advice however at the time of writing a response had not been received.

### **5.3 Staging**

Connection to the existing electrical supply will occur during the first stage of development. The second and subsequent stages will connect to the new electrical reticulation provided with the development. There may be a second connection to the existing supply in the latter stages of the development.



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## **6. GAS**

### **6.1 Existing and Proposed Infrastructure**

Jemena (formerly Alinta) has advised that the closest gas main to the Gwandalan site is at Doyalson. Jemena has undertaken a preliminary economic assessment and identified that natural gas reticulation to the development site is not economically feasible without significant developer contributions. Therefore it is not proposed to provide natural gas reticulation to the proposed development.

### **6.2 Consultation**

A telephone conversation with Jemena's Greg Knight was held on 15 January 2007. Subsequently a meeting was held in Cardno's office with Greg Knight and Jacinta Holmick (Cardno) on 31 July 2007.

## **7. TELECOMMUNICATIONS**

### **7.1 Existing and Proposed Infrastructure**

Consultation with Telstra was undertaken in 2007 (refer Section 7.2 below). At this time initial discussions with Telstra indicated that there are no major servicing constraints associated with the site. The nearest Telstra service point to the Gwandalan site is within the existing suburb north of the site and Kanangra Drive to the west.

Since the 2007 consultation with Telstra, the National Broadband Network (NBN) has been announced by the Federal Government.

The NBN is committed to the provision of fibre optic telecommunications to 90% of existing Australian dwellings over the next 8 years.

It is understood that the installation of this network is provided at no cost to existing residential areas however in new developments the telecommunications pit and pipe network is developer funded.

Connection to the existing telecommunication network is understood to be funded by the NBN however timing for connection of the Gwandalan site is currently unconfirmed.

### **7.2 Consultation**

A number of telephone conversations were held with Telstra in January 2007 and a meeting was held in Telstra's Newcastle office on 19 January 2007. Five staff from Telstra (including Chris Ross) and three staff and sub consultants of Cardno (including Jacinta Holmick) were in attendance.

### **7.3 Staging**

Telecommunications cabling will be provided in conjunction with the electrical cabling, with servicing extending from the existing cabling to the north of the development site.

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## 8. CONCLUSIONS

Reticulated water mains will be supplied directly from the existing main west of the proposed development. Sewer infrastructure comprising rising mains, gravity mains and sewer pump stations will be required to connect the proposed development to the nearby STP.

Electrical supply will be extended from the existing suburb of Gwandalan with minor lead-in works required. Energy Australia is in the process of confirming their previous advice.

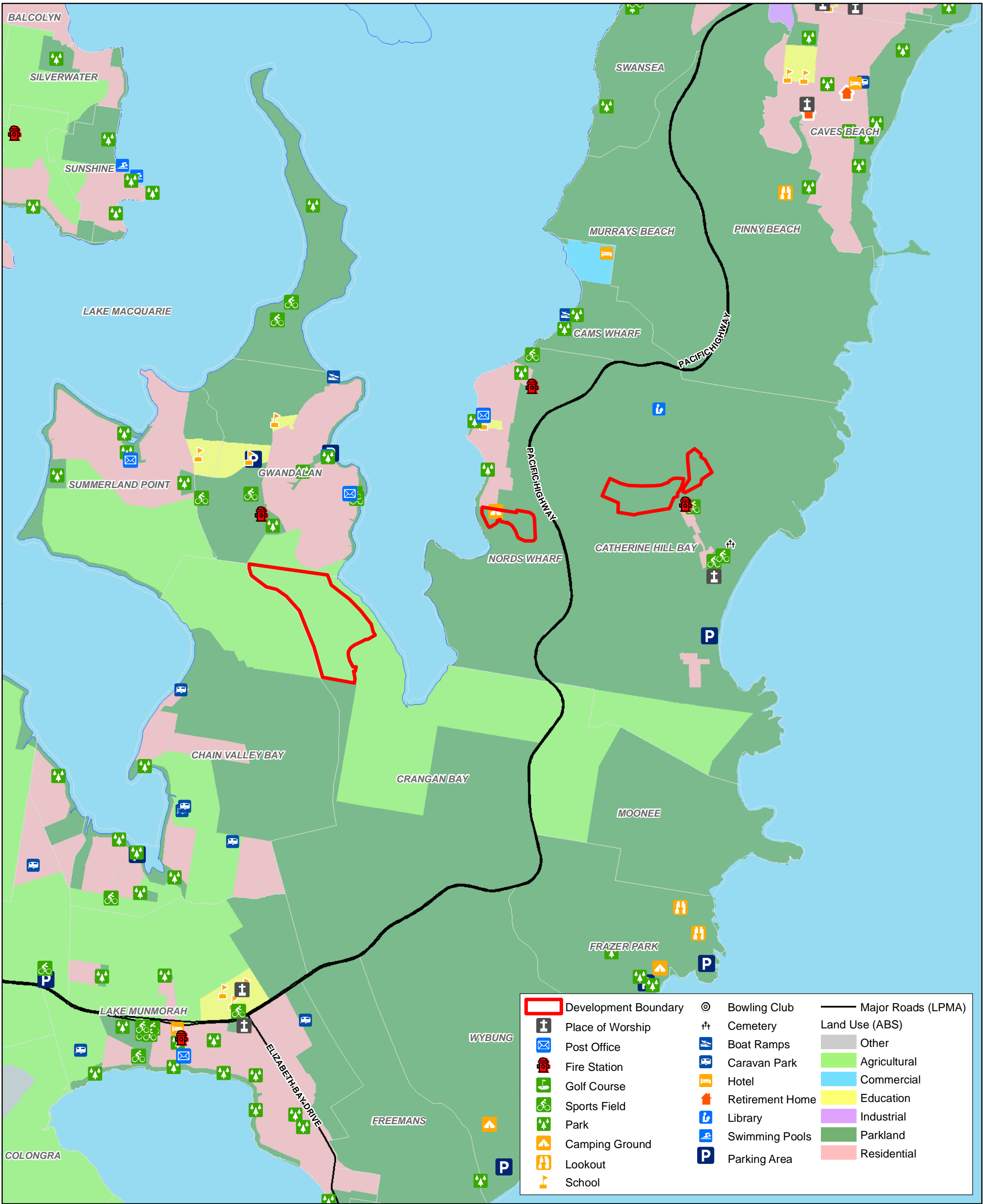
Telecommunications to the site are likely to be provided under the Nation Broadband Network (NBN) however timing for connection to the network has not yet been confirmed.

Gas mains are not feasible for this area given the long distance to existing supplies.

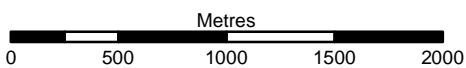
In all instances the additional infrastructure proposed in this report will service only Coal & Allied's proposed Gwandalan development and not any other developments identified in the Lower Hunter Regional Strategy (LHRS) or the Central Coast Regional Strategy (CCRS) as no other developments are dependent on the Gwandalan infrastructure.

## **APPENDIX A**

### **EXISTING INFRASTRUCTURE MAP**



Scale 1:35,000 (at A3)



## Existing Community Services Plan

LOWER HUNTER LAND DEVELOPMENT



Map Produced by Cardno Wollongong  
Date: 13 April 2010  
Coordinate System: Zone 56 MGA/GDA 94  
GIS MAP REF: 210002\_03\_18012\_Services.mxd 01

## **APPENDIX B**

### **EMAIL TO WYONG SHIRE COUNCIL DATED 9/8/2007**

**Jacinta Holmick**

**From:** Jacinta Holmick  
**Sent:** Thursday, 9 August 2007 4:48 PM  
**To:** 'intesar.naoum@wyong.nsw.gov.au'  
**Cc:** 'Nick Johnson'; 'ken.grantham@wyong.nsw.gov.au'; 'Lisle Butler'; 'Frank van den Brink - Catylis'; 'Dedden, Keith (RTCA)'  
**Subject:** Invitation to Regional Forum & Notes from meeting  
**Attachments:** Ken Grantham Letter.pdf



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Intesar,

Many thanks to yourself and Ken for making the time this morning to speak to Lisle, Frank and myself. For your records, the key items noted / minuted in relation to water and sewer infrastructure for the Gwandalan site are as follows:

Water:

- \* Existing 450 dia trunk watermain in Kanangra Drive has capacity for the additional demand of the 700 lots.
- \* C&A will be required to construct all watermain within the site, including a 200mm dia ring main and two connections from the ring main to the 450 dia trunk main.
- \* Current DSP charges (subject to review and change) are \$3,785.00 / ET (GST not applicable)

Sewer:

- \* C&A to connect directly to the Summerland Pt STP adjacent to the site.
- \* Cardno proposed 2 or 3 sewer pump stations and rising mains to connect to STP.
- \* Wyong Council advised that rising mains, and gravity mains 300mm dia and larger require easements.
- \* Pump stations are to be located on Council land (underground), the land can be appropriately landscaped.
- \* Council highlighted that odour control measures would need to be put in place at the SPS's particularly during the early stages of the project.
- \* Council advised that the Summerland Pt STP has sufficient capacity for the additional load presented by the 700 lots.
- \* C&A will be required to construct all internal sewer mains and infrastructure within the site.
- \* Current DSP charges (subject to review and change) are \$780 / ET (GST not applicable)

Other Matters:

- \* Council advised that Delta electricity have a contract / agreement with Council to take effluent from the STP. However, effluent would be available to C&A in proportion to the in-flows from the development site (subject to further discussion / negotiation).
- \* Council were open to stormwater harvesting and use for non-potable uses (for example irrigation of parks etc).

I have also attached the invitation issued to Ken Grantham for the Regional Forum. We would be pleased if you could attend on Ken's behalf. Please RSVP by email to Nick Johnson ([nickj@manidisroberts.com.au](mailto:nickj@manidisroberts.com.au)).

Thanks again, and if you have any questions please feel free to give me a call. I will be in touch as the project progresses.

Kind regards,  
**Jacinta Holmick**  
 Senior Project Manager  
 Phone: 02 8831 9000  
 Fax: 02 8831 9099  
 Mobile: 0411 079 871

11/10/2007

## **APPENDIX C**

### **INDICATIVE LOT LAYOUT**





Figure A1.3.1 Gwandalan Indicative Lot Layout



## **APPENDIX D**

### **INDICATIVE UTILITY LEAD-IN PLAN**

REV	DATE	FOR APPROVAL	Description	Drawn	App'd
1	1/10/2010			CMH	SGB



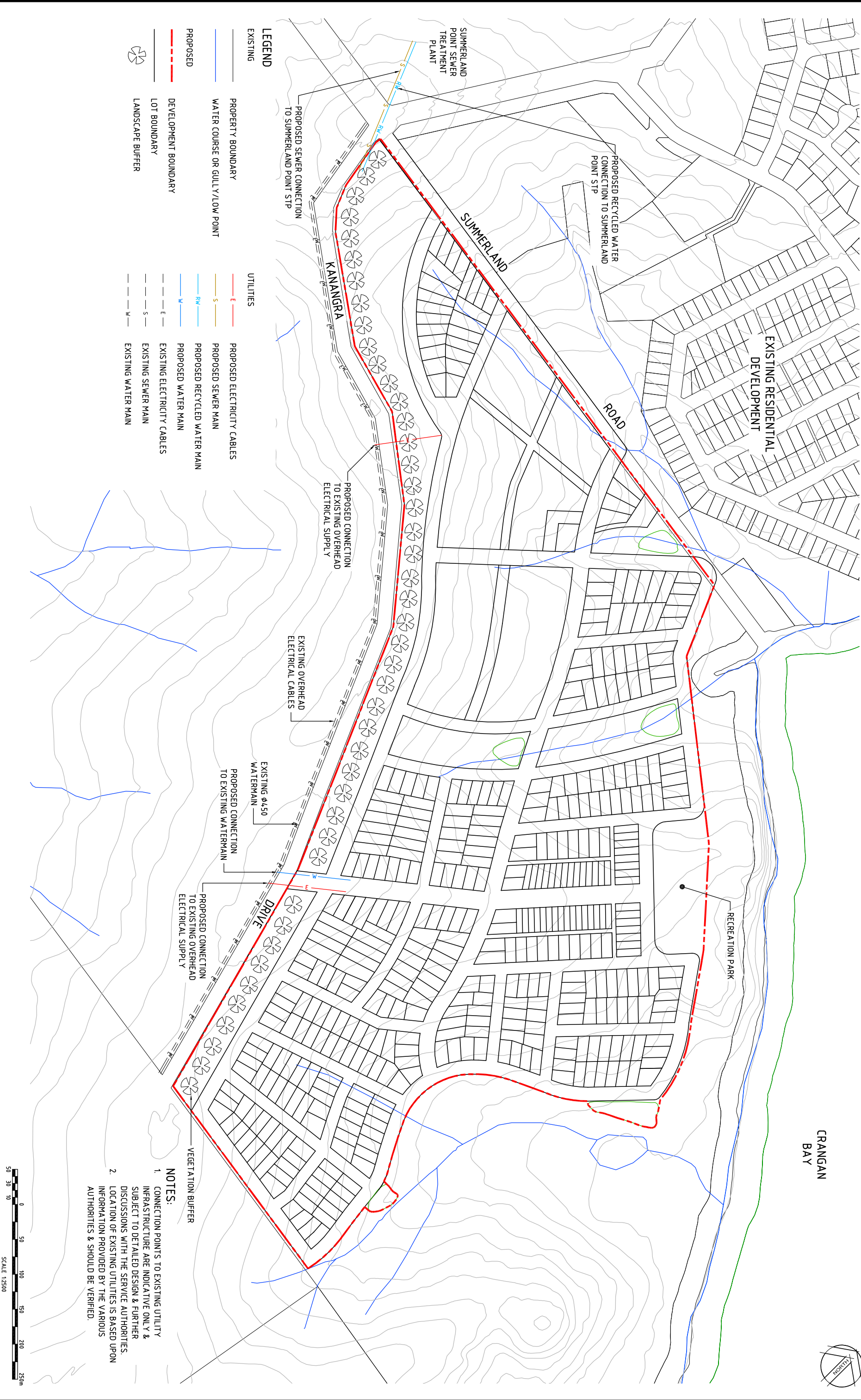
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Drawn	CMH	Date
Overseer	SGB	Date
Designed	SGB	Date
Verified	MCW	Date
Approved	MCW	Date

Client: **COAL & ALLIED**  
LOWER HUNTER LAND DEVELOPMENT  
SOUTHERN ESTATES  
GWANDALAN ESTATE

Status	NOT FOR CONSTRUCTION
Date	01/10/2010
Drawn	AHD
Scale	AS SHOWN
Size	A1
Drawing Number	YN274002-001
Revision	1



- NOTES:
1. CONNECTION POINTS TO EXISTING UTILITY INFRASTRUCTURE ARE INDICATIVE ONLY & SUBJECT TO DETAILED DESIGN & FURTHER DISCUSSIONS WITH THE SERVICE AUTHORITIES.
  2. LOCATION OF EXISTING UTILITIES IS BASED UPON INFORMATION PROVIDED BY THE VARIOUS AUTHORITIES & SHOULD BE VERIFIED.