

West Gables Services Infrastructure Plan

June 2023

A smaller, curved graphic element in the bottom left corner, showing a close-up, low-angle view of a power line tower against a dark, silhouetted landscape.

**Prepared for Stockland
Development Pty Ltd & Allam
Property Group
28 June 2023**



Document Information

Prepared by
Enspire Solutions Pty Ltd
1302/83 Mount Street
North Sydney NSW 2060
ABN 71 624 801 690

© Enspire 2023. Copyright in the whole and every part of this document belongs to Enspire and may not be used, sold, transferred, copied or reproduced in whole or in part in any manner or form or in or on any media to any person other than by agreement with Enspire.

This document is produced by Enspire solely for the benefit and use by the client in accordance with the terms of the engagement. Enspire does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by any third party on the content of this document.

Document Title	West Gables Services Infrastructure Plan
Document Subject	June 2023
Prepared For	Stockland Development Pty Ltd & Allam Property Group
Project Name	West Gables
Project Number	220012
File Name	REPT001-220012-00-Enspire-R04-230628-ServicingInfrastructureReport.docx

Transmittal

Revision	Date	Prepared by	Checked by	Approved by
01	08/07/22	A.Nhan	C.Vella	C.Vella
		Issue for submission		
02	21/11/22	A.Nhan	C.Vella	C.Vella
		Issue for submission		
03	05/12/22	A.Nhan	C.Vella	C.Vella
		Updated figures		
04	28/06/23	A.Nhan	C.Vella	C.Vella
		Updated SW advice		



Contents

Executive Summary	3
1 Introduction	4
1.1 Background	4
1.2 The Site	4
1.3 The Existing Gables Development	5
1.4 Development Staging Programme	5
1.5 Existing Road Infrastructure Upgrades	5
2 Potable Water	7
2.1 Existing Potable Water Network	7
2.2 Proposed Potable Water Network Advice	7
3 Recycled Water and Pressure Sewer	8
3.1 Existing Recycled Water & Pressure Sewer Network	8
3.2 Proposed Servicing Strategy	8
4 Electrical	9
4.1 Existing Electricity Network	9
4.2 Proposed Electricity Network	9
4.3 Existing Transgrid Easement	9
5 Telecommunications	10
5.1 Proposed Servicing	10
5.2 Existing Telstra	10
5.3 Existing Optus	10
6 Natural Gas	10
6.1 Existing Servicing Constraints	10
6.2 Optional Lot Servicing	10
7 Conclusion	11

List of Tables

Table 1 – Concept Development Delivery Programme	5
--	---

List of Figures

Figure 1 – Subject Land	4
Figure 2 – Original Gables Rezoned Land	5

List of Appendices

Appendix A	Staging Plan
Appendix B	Recycled Water and Pressure Sewer
Appendix C	Electrical Reticulation



Executive Summary

The Proponent Group of The Gables rezoning, being Stockland Developments and Allam Group, has engaged Enspire Solutions Pty Ltd (Enspire) to prepare a Services Infrastructure Plan (the Plan) for the planned development of The Gables. This Plan has been prepared to fulfil the requirements of an upcoming rezoning to detail and confirm agreed actions and deliverables with each primary utility provider to supply the planned staged development of The Gables.

The Gables rezoning (Subject Land) proposes approximately 1,300 low density residential dwellings, future riparian corridor, several active open space areas, drainage open spaces and includes the rezoning of the Gables Zone Substation. The proposals for infrastructure services provision to the development has been reviewed in accordance with this current revision.

The primary utility providers to the development include:

- Potable Water: Sydney Water Corporation
- Recycled Water/Wastewater: Altogether Group
- Electricity: Endeavour Energy
- Communications: National Broadband Network Corporation (NBN)
- Natural Gas: Jemena

In addition, The Gables is traversed by TransGrid's 330 kV transmission lines, which have been considered due to the proposed placement of water management infrastructure as part of this proposed development.

The rezoning area is situated west of the existing Gables development with existing service infrastructure that will form part of the connections to the utility's networks to the Subject Land.

The primary utility providers were contacted regarding the development and have indicated that some services currently have limited availability to service the site, and the plans for the expansion in the Box Hill North area could be accommodated, as summarised below:

- Potable Water – Sydney Water has recently released its updated Growth Services Infrastructure Plan (GSIP) for the area to which the Subject Land is excluded. A strategic assessment for potable water supply has commenced to identify a preferred supply solution for the Subject Land.
- Recycled Water/Wastewater – Altogether Group is the primary supplier of recycled water and pressure sewer of the Box Hill North/Gables area. Altogether has notified Enspire and the Proponent Group that there is sufficient capacity to supply the Subject Land.
- Electrical Reticulation – Endeavour Energy has advised that the Gables Zone Substation is currently under construction and is expected to be commissioned by December 2023. Subject to timing of the development, the first stage of the development can be supplied from existing feeders.
- Natural Gas – Jemena do not currently have sufficient capacity within its network to cater for the Subject Land without augmentation. The Proponent group has decided not to supply gas reticulation for the development.
- Telecommunications – NBN has notified Enspire and confirmed that fibre capacity to service the entire development is available. With live networks available within the vicinity, there will be no backhaul charges required.



1 Introduction

1.1 Background

The Proponent Group of The Gables rezoning, being Stockland Developments and Allam Group, engaged Enspire Solutions Pty Ltd (Enspire) to prepare this Services Infrastructure Plan (the Plan) for the planned development of The Gables. This Plan has been prepared to fulfil the requirements of an upcoming rezoning to detail and confirm agreed actions and deliverables with each primary utility provider to supply the planned staged development of The Gables. The primary utility providers consulted in preparation of this plan include:

- Potable Water: Sydney Water Corporation
- Recycled Water/Wastewater: Altogether Group
- Electricity: Endeavour Energy
- Communications: National Broadband Network Corporation (NBN)
- Natural Gas: Jemena

This Plan has been prepared based on information available at this point in time.

1.2 The Site

The proposed Gables rezoning land (Subject Land) is located within The Hills Shire Local Government Area and is bound by the existing Gables development to the North, Boundary Road to the West and Old Pitt Town Road to the South. It is expected that the Subject Land of approximately 9.10 hectares will accommodate up to 1,300 low density residential dwellings, future riparian corridor, several active open space areas, drainage open spaces for catchment treatment and include the rezoning of the Gables Zone Substation that is currently under construction. Refer to Figure 1 below.



Figure 1 – Subject Land

Sourced from Nearmap Co, 2022



1.3 The Existing Gables Development

The proposed Subject Land is situated west of the existing wider Gables development which was rezoned in 2015 and is currently being developed in stages. Refer to Figure 2 below for the extents of the land previously rezoned. The utility providers were consulted during this rezoning process and have planned utility provisions for the rezoned land. This original rezoning did not consider the development of the site subject to this Plan and hence additional upgrade and augmentation works are expected to be required.



Figure 2 – Original Gables Rezoned Land

Sourced from Nearmap Co, 2022

1.4 Development Staging Programme

An indicative programme and staging plan has been developed and distributed to the relevant service authorities to inform the findings of this Plan. Refer to Appendix A for the concept staging plan. This staging plan represents the envisioned timing and staging for which the Proponent Group intends to develop; however, it should be understood that circumstances may present itself, for which the staging sequence may change or alter.

Table 1 – Concept Development Delivery Programme

Stage	Year	Lots Scheduled to be Registered	Cumulative Lots
Stage 1	2025-2026	265	265
Stage 2	2026	135	400
Stage 3	2027	195	595
Stage 4	2027	175	770
Stage 5	2027	530	1300

1.5 Existing Road Infrastructure Upgrades

The Subject Land is located at the intersection of Boundary and Old Pitt Town Road. Under the existing Gables development Voluntary Planning Agreement (VPA) with Council, a proposed signalised intersection is expected to be completed prior to the commencement of the first stage



to meet the increased traffic demands of both the wider Gables development and the Subject Land.

Old Pitt Town Road and Boundary Road in its current state are also single lane paved roads with a shoulder, and are expected to be upgraded to incorporate kerb and gutter as part of existing VPA commitments.

Asset relocations will also be required as part of these upgrades. The following services have been identified to possibly be relocated:

- Potable Water;
- Overhead Electrical;
- Telstra;
- Optus;
- NBN; and
- Gas.



2 Potable Water

The primary potable water supplier within the Box Hill North/Gables area is Sydney Water. Enspire in consultation with Sydney Water and GHD, are currently undertaking modelling to determine a suitable strategy to supply the Subject Land.

2.1 Existing Potable Water Network

The following existing potable water mains have been identified through a Before You Dig Australia (BYDA) enquiry:

- DN100 oPVC along Cataract Road, Bloomsdale Circuit and Sundowner Parkway
- DN100 DICL along Red Gables Road
- DN150 DICL along Boundary Road
- DN250 oPVC along Sunburst Circuit
- DN300 oPVC & DN250 oPVC along Valletta Drive
- DN300 oPVC & DN375 DICL along Old Pitt Town Road

2.2 Proposed Potable Water Network Advice

A technical feasibility application was submitted to Sydney Water in 2021 and in response, Sydney Water indicated the existing network does not have sufficient capacity to service the Subject Land and modelling will need to be undertaken to determine required augmentation works.

Sydney Water has since released their Growth Servicing Investment Plan (2021), which indicates plans for providing new lead-ins and upgrades to existing networks for the planning horizons 2021, 2026, 2031, 2041 and 2051. Through review of the documentation and consultation with GHD, the latest assessment by Sydney Water had not considered for the additional growth of the Subject Land.

GHD has since been engaged as the consultant to undertake modelling on behalf of Sydney Water and the Proponent Group to determine infrastructure requirements to service the demands of the Subject Land.

The Proponent Group continues to liaise with Sydney Water to determine a pathway to facilitate supply of the intended of up to 1,300 lots and intends to enter a Commercial Agreement to accelerate the necessary upgrade works.



3 Recycled Water and Pressure Sewer

The recycled water and pressure sewer reticulation supplier within the Box Hill North/Gables area is Altogether Group. Altogether has notified Enspire and the Proponent Group that there is sufficient supply to facilitate the Subject Land

3.1 Existing Recycled Water & Pressure Sewer Network

An Altogether Package Sewage Treatment Plant is located within the existing Gables development situated on Red Gables Road. This treatment plant provides servicing for recycled water and pressure sewer to the existing Gables development.

A recycled water and pressure sewage network exists within the existing Gables development, servicing the existing lots.

3.2 Proposed Servicing Strategy

Through augmentation of the existing treatment plant, and installation of new recycled water and pressure sewer mains, the Subject Land can be serviced.

While it is yet to be confirmed, the anticipated possible solutions identified are listed below:

- Subject to the capacity of the existing services along Sunburst Crescent, the existing DN200 pressure sewer main and DN250 recycled water could be utilised or upgraded to allow for the new road connections and servicing of Stage 1a (refer to Appendix B). Services of Stage 1b will require the upgrade of the existing main in Triumph Road, along with an extension of the existing main along Valletta Drive to provide connection to the lots fronting Old Pitt Town Road.
- Stage 2 could be potentially serviced through two routes. One route is to extend the existing main from Sunburst Crescent, through future stage 5 to Cataract Road or alternatively, provide a new main along Boundary Road. Either option will allow for an ease of connection for when stage 5 is ready to begin development.
- Stage 3 and 4 could require a connection to run along Boundary Road and Old Pitt Town Road. As a result, a culvert crossing will be required for the future services along on Boundary Road.

A number of under bored connections could be required into existing recycled water and pressure sewer mains as Altogether requires a closed loop system with no dead-ends.



4 Electrical

The primary electrical reticulation supplier in the area is Endeavour Energy. Enspire has consulted Endeavour Energy through a feasibility assessment during the preparation of this Plan.

4.1 Existing Electricity Network

The feasibility assessment from Endeavour Energy states that the Gables rezoning area is currently situated in an existing 11kV and 22kV network area with a nearby 11kV feeder (SZ1332) supplied from South Windsor Zone Substation and 22kV feeders (MR2218 and MR2272) supplied from Mungerie Park. The Box Hill Zone Substation located at the south-eastern corner of the intersection of Valletta Drive and Triumph Road is expected to be commissioned by December 2023, prior to the planned first lots subject to this Plan (Refer to Appendix C).

4.2 Proposed Electricity Network

Subject to timing of the commissioning of the Box Hill Zone Substation, and other developments within the area, the first stage of the development can be supplied by existing 22kV feeders nearby or through a conversion of an existing 11kV feeder to a new 22kV feeder.

Should the zone substation be commissioned prior to the start of the first stage, a new 22kV feeder can be installed to allow supply for the full development area.

Padmount substations will need to be installed with 22kV cables linking each other to supply up to 1,300 lots. It is expected that the padmount substations can typically supply 60 - 80 lots per substation.

4.3 Existing Transgrid Easement

Existing Transgrid transmission infrastructure traverses the north-west corner of the site with an easement. All works within and surrounding the easement will be subject to review by Transgrid.



5 Telecommunications

5.1 Proposed Servicing

NBN Co is the wholesale service provider of fibre communication within the Gables area. NBN has been notified and confirmed that fibre capacity to service the entire development of (1,320 lots) is available.

Due to the live network within the vicinity to the proposed rezoning area, NBN has confirmed that no backhaul charges will be required to service the proposed rezoning development.

5.2 Existing Telstra

A Before You Dig Australia (BYDA) enquiry found that Telstra telecommunication pit and pipes were located along the western boundary of the proposed site along Boundary Road and dead services running along the south of the site.

Should the Telstra service along Boundary Road be required to be relocated due to road upgrade works, Telstra will need to be contacted to complete the service relocation.

5.3 Existing Optus

Optus owned pit and pipe services were found as part of the BYDA enquiry. It is noted that should service relocations due to upgrade works of Boundary Road be required, Optus asset accredited locators must be engaged to carry out the asset relocation.

6 Natural Gas

Jemena is the wholesale service provider for gas reticulation servicing the Gables area. Enspire has approached Jemena regarding the servicing of the Subject Land.

6.1 Existing Servicing Constraints

Through consultation with Jemena, the capacity within its system cannot sufficiently cater the Subject Land without augmentation. Jemena has advised of two possible routes which could reinforce the existing network to allow for servicing for the Subject Land, which are subject to timing and connection of other developments.

6.2 Optional Lot Servicing

Based off the advice from Jemena, the Proponent Group has decided to not supply gas reticulation services to the Subject Land.



7 Conclusion

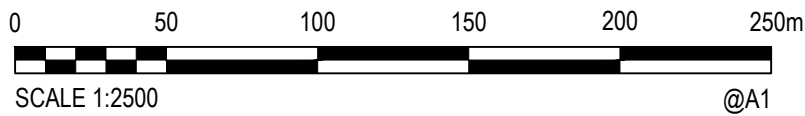
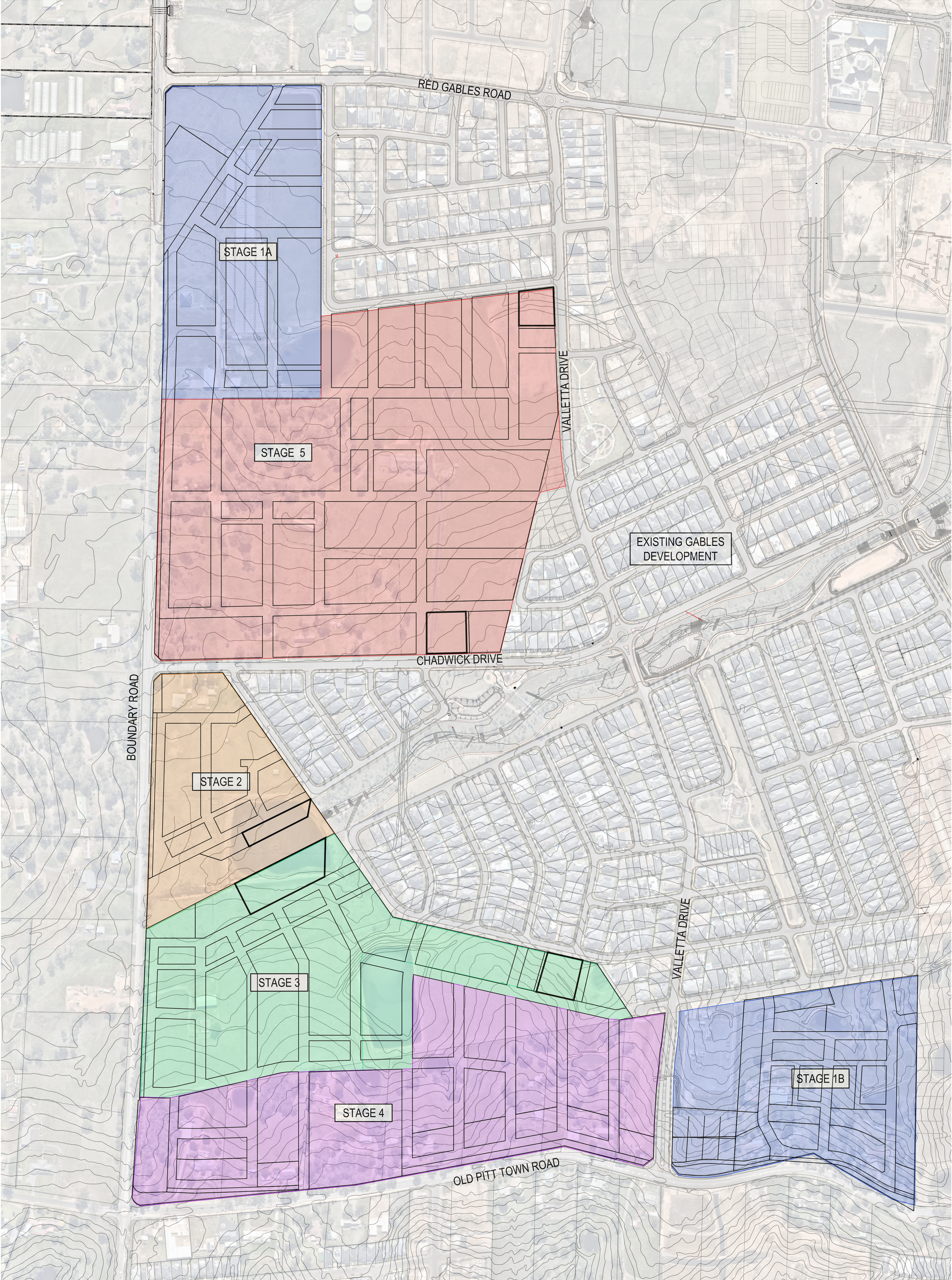
This Servicing Infrastructure Report confirms the Subject Land can be serviced. The plan has been prepared on information that is available at this current point in time and advice received from the respective utility service providers.


A summary of the findings is as follows:

- Potable Water: The rezoning development is outside of the current Sydney Water Growth Servicing Plan and the existing network does not currently have capacity to services the Subject Land. The Proponent Group is liaising with Sydney Water to determine required augmentation works.
- Recycled Water and Wastewater: Altogether has indicated that the Subject Land can be serviced from its existing Package Sewage Treatment Plant, through a series of new recycled water and pressure sewer mains.
- Electrical reticulation: The Gables Zone Substation is expected to be commissioned by the end of 2023 and will have sufficient capacity to service the Subject Land;
- Telecommunications: NBN Co has indicated that the existing surrounding network has sufficient infrastructure to service the Subject Land;
- Natural Gas: Jemena has indicated that its existing network does not have capacity to cater for the Subject Land. The Proponent Group has opted to not deliver gas reticulated to the future dwellings.



Appendix A Staging Plan

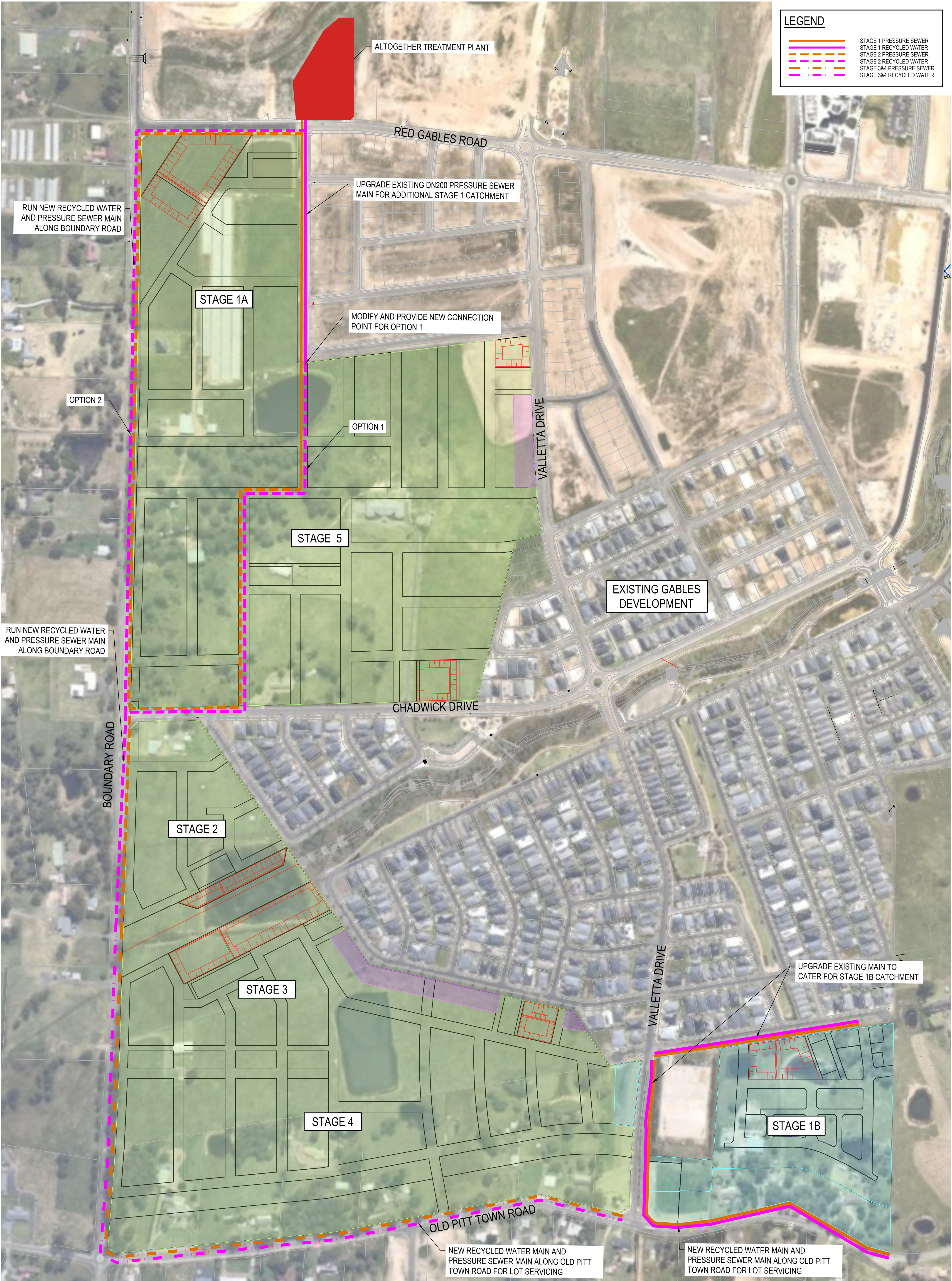


Project: THE GABLES - REZONING	Drawing No: SKET001	Rev: 03
Project No: 220012	Date:	 Enspire Solutions Pty Ltd 1302/83 Mount Street, North Sydney NSW 2060 ABN: 71 624 801 690 Phone: 02 9922 6135
Title: STAGING PLAN	Scale: 1:2500	
	Drawn: AN	
The copyright of this drawing remains with Enspire Solutions Pty Ltd and must not be copied wholly or in part without the permission of Enspire Solutions Pty Ltd.	Datum: MGA2020	



Appendix B Recycled Water and Pressure Sewer

Staging Plan



LEGEND

- STAGE 1 PRESSURE SEWER
- STAGE 1 RECYCLED WATER
- STAGE 2 PRESSURE SEWER
- STAGE 2 RECYCLED WATER
- STAGE 3&4 PRESSURE SEWER
- STAGE 3&4 RECYCLED WATER

	Project: THE GABLES - REZONING	Drawing No: SKET002	Rev: 01
	Project No: 220012	Date:	 Enspire Solutions Pty Ltd 1302/83 Mount Street, North Sydney NSW 2060 ABN: 71 624 801 690 Phone: 02 9922 6135
	Title: RECYCLED WATER AND PRESSURE SEWER STAGING PLAN	Scale: 1:2500	
	The copyright of this drawing remains with Enspire Solutions Pty Ltd and must not be copied wholly or in part without the permission of Enspire Solutions Pty Ltd.	Drawn: AN	
	Datum: MGA2020		



Appendix C Electrical Reticulation

Preliminary HV Feeder Network



<div><div><div>050100150200250m</div><div>SCALE 1:2500</div><div>@A1</div></div></div> <div><div>The copyright of this drawing remains with Enspire Solutions Pty Ltd and must not be copied wholly or in part without the permission of Enspire Solutions Pty Ltd.</div></div>	<div>Project: THE GABLES - REZONING</div> <div>Project No: 220012</div> <div>Title: PRELIMINARY HV FEEDER NETWORK</div>	<div>Drawing No: SKET003</div> <div>Date:</div> <div>Scale: 1:2500</div> <div>Drawn: AN</div> <div>Datum: MGA2020</div>	<div>Rev: 01</div> <div><div><div><div></div><div>enspire</div></div><div><div>Enspire Solutions Pty Ltd</div><div>1302/83 Mount Street, North Sydney NSW 2060</div><div>ABN: 71 624 801 690</div><div>Phone: 02 9922 6135</div></div></div></div>
---	---	---	--