



**LANDPARTNERS**  
Surveyors and Planners



Planning Titling Surveying Mapping & GIS Urban Design Environmental

**Sydney**  
"Parklands Estate"  
Level 2, 23-29 South Street  
RYDALMERE NSW 2116

PO Box 1144  
DUNDAS NSW 2117  
T: 61 2 9685 2000  
F: 61 2 9685 2001

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**To: ALTIS PROPERTY PARTNERS**

**Project: KEMPS CREEK – SERVICE INFRASTRUCTURE ASSESSMENT**

**Our Ref: SY074794.000**

**Date: JULY 2021**

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### Revision:

Issue	Date	Comment
A	09/2019	Issue for comment
B	02/2020	Revised Report
C	05/2021	SEARS Requirements
D	07/2021	Minor Amendments

## EXECUTIVE SUMMARY – UTILITY SERVICE INFRASTRUCTURE

### Servicing Capability

- Potable Water
  - ▲ The site is currently within the Cecil Park supply zone. This supply system does not have capacity to serve developments within the Mamre Road precinct.
  - ▲ Amplification works are currently being delivered to the Cecil Park system and these works will be operational in 2022. These works will include amplification of lead out mains from the reservoir along Elizabeth Drive.
  - ▲ Potable Water supply zone rezoning will occur to provide more robust supply from Cecil Park system. The subject site initially will be rezoned to the Erskine Park Elevated system.
  - ▲ A developer funded 300mm water main is to be constructed to the corner of Bakers Lane – Mamre Road intersection by late 2021 from the Erskine Park Elevated system.
  - ▲ Extension from the developer funded 300mm water main will provide service to the subject development until final supply from Cecil Park supply system is available.
  - ▲ Extension of a new trunk water main from Elizabeth Drive along Mamre Road will provide further service to the Mamre Rd precinct.
- Recycled Water
  - ▲ Development of the Upper South Creek Advanced Water Recycling facility (delivered by 2026) will create highly treated recycled water. Sydney Waters' intention is to develop a recycled water reticulation system to serve the Mamre Rd precinct.
  - ▲ To facilitate future supply from this proposed recycled water system a recycled water reticulation pipe (a "purple" pipe) will be installed across the frontage of the site.
- Waste Water
  - ▲ No Sydney Water waste water assets currently service this subject site.
  - ▲ Sydney Water have adopted a strategy to service the Mamre Road precinct. There are various implementation phases to this strategy.
  - ▲ Phase 1 involves the implementation of an Interim Operating Procedure (I.O.P). This will involve Sydney Water constructing a wet well and associated infrastructure in the northern catchment of the Mamre Rd precinct.
  - ▲ The wet well will collect waste water and a pumpout/tankering process will dispose of the waste water to an approved disposal point. The operation of the pumpout/tankering will be a cost borne by participating developers.
  - ▲ Phase 2 – Stage 1 will involve decommissioning the IOP and construction of Sewer Pump Stations (SPS) to collect waste water and discharge via a rising main and existing gravity reticulation systems to St Mary Waste Water Treatment Plant.
  - ▲ Phase 2 – Stage 2 will involve the SPS discharging waste water to the Upper South Creek Advanced Recycling Treatment Plant which will be operational by late 2025 – early 2026.
- Electricity
  - ▲ Endeavour Energy are constructing a new zone substation (called the South Erskine Park Zone Substation) in the Oakdale West precinct. This zone substation will be operational by end 2022 and provide further electrical capacity to serve the whole of the Mamre Rd precinct.

- ▲ Endeavour Energy will re-energise the current 11KV feeder at the front of the site to a 22KV based on supply from the South Erskine Park Zone Substation which will supply capacity to support the development of the site.
- Gas
  - ▲ Jemena will not supply individual developments “on spec”.
  - ▲ Provision of gas supplies to the subject development and surrounding developments will require an assessment of proposed and surround opportunities. No extension of the Jemena reticulation network is currently proposed.
- Telco
  - ▲ The adjacent Fraser/Altis joint venture will result in extension of the fibre optic network from Distribution Drive along Mamre Road to service that development.
  - ▲ Minor extension of that network would provide service to the subject site.

### 1.0 INTRODUCTION

Altis Property Partners have requested an assessment of possible servicing options be prepared for the Mamre Rd development site at Kemps Creek as shown in Figure 1 below.

The site falls within the Mamre Rd precinct outlined in the recently released Mamre Road Precinct and is identified in the following plan:

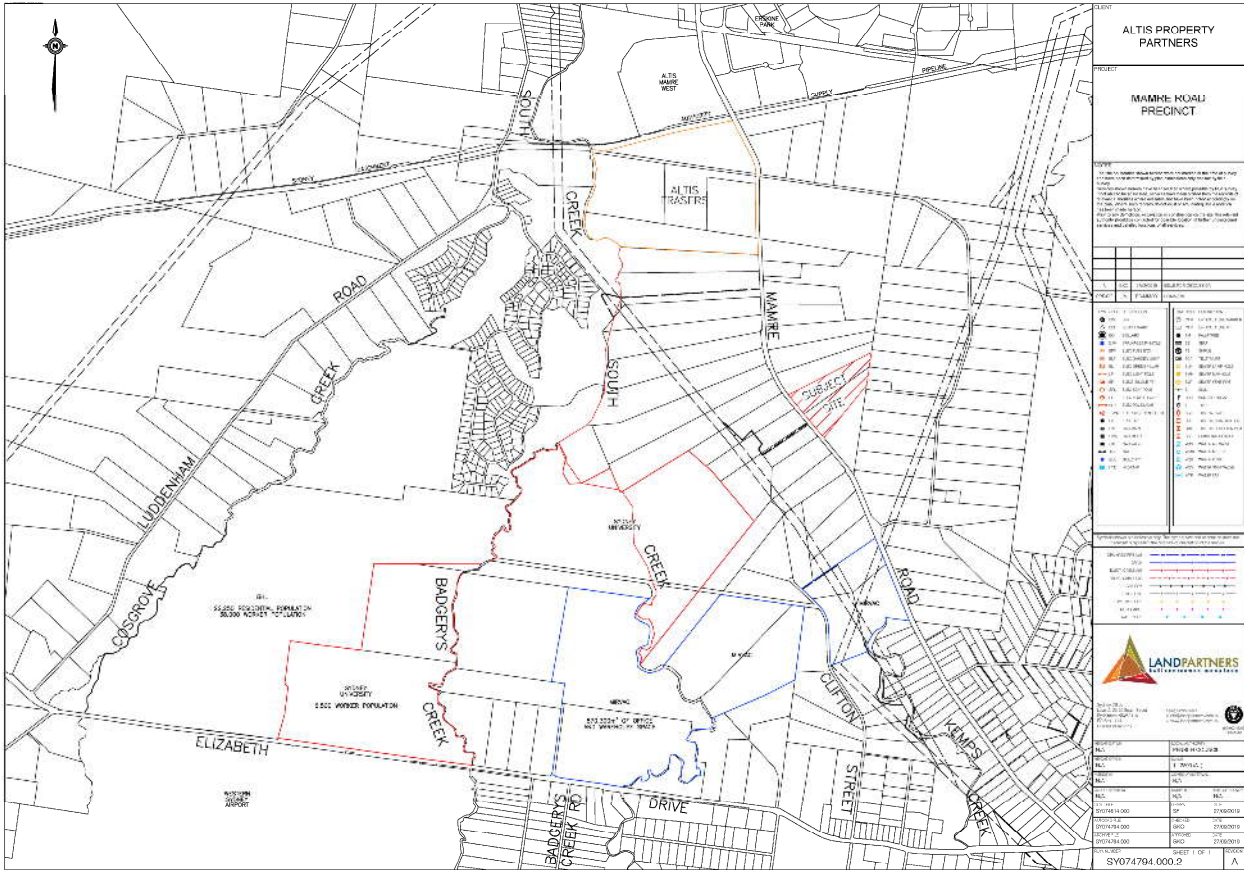


Figure 1

### 1.1 SEARS REQUIREMENTS

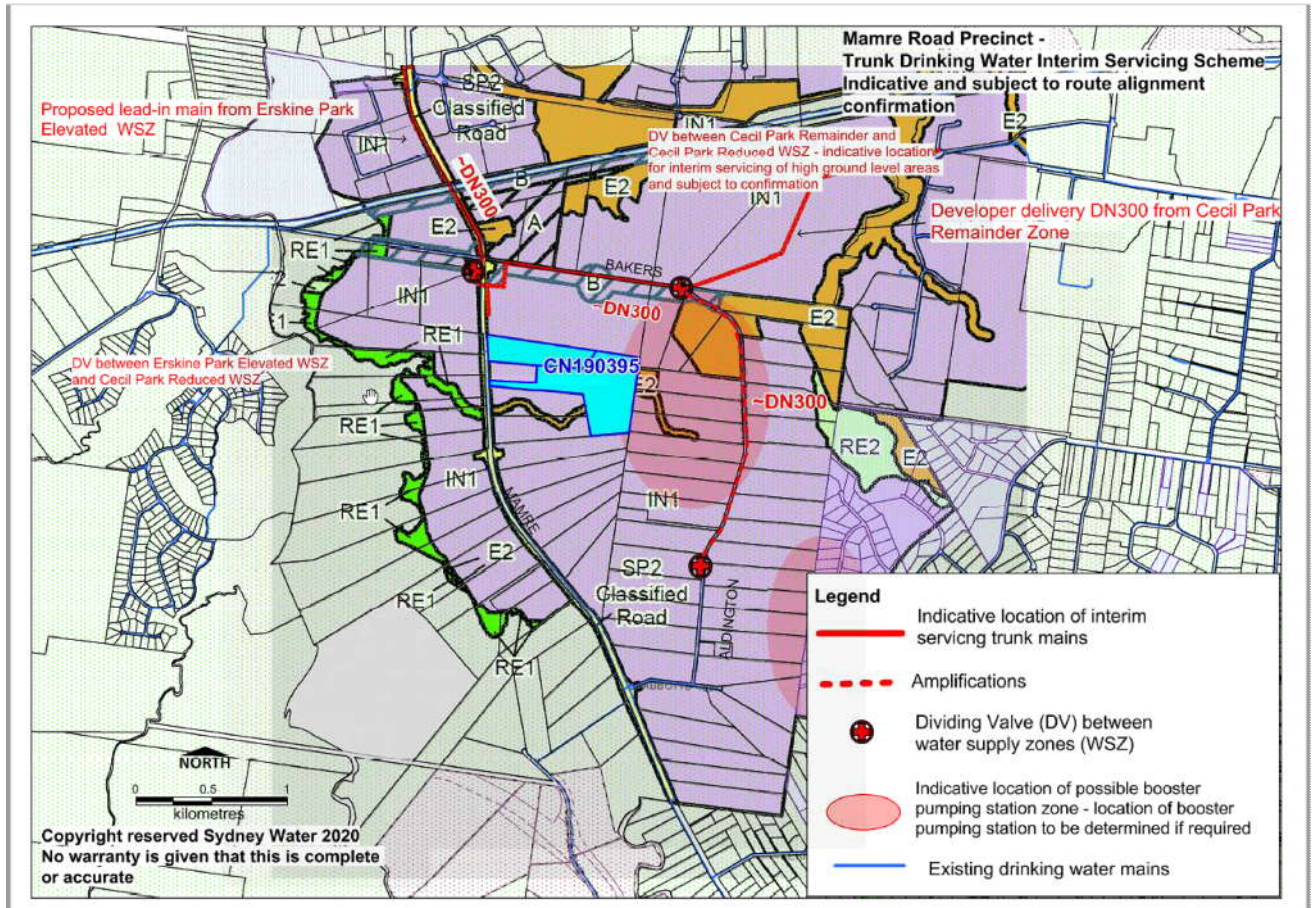
The Department of Planning, Industry & Environment have issued SEARS requirements to address environmental impact issues for the logistics park at 884-928 Mamre Road Kemps Creek. For this report, the following SEARS issues apply:

SEARS Requirements	Response -Section in Report
<ul style="list-style-type: none"> <li>- a detailed written and/or graphical description of infrastructure and utilities required on site, including any electrical substation(s) and on-site switch yard(s);</li> <li>- identification of any infrastructure upgrades required off-site to facilitate the development, and describe any arrangements to ensure that the upgrades will be implemented in a timely manner and maintained;</li> <li>- an infrastructure delivery and staging plan, including a description of how infrastructure on and off-site will be co-ordinated and funded to ensure it is in place prior to the commencement of construction; and</li> <li>- an assessment of the impacts of the development on existing utility infrastructure and service provider assets surrounding the site, and a description of how any potential impacts would be avoided and minimised.</li> </ul>	<p>Refer to Section 2.1-5.0 and Appendix C</p>

## 2.0 POTABLE WATER AND WASTE WATER

### 2.1 POTABLE WATER

- a) The Site is currently serviced by the Cecil Park reservoir system and currently this system does not have capacity to service developments within the Mamre Rd precinct. Following meetings and discussions with Sydney Water a number of potable water service areas will be rezoned to provide greater capacity and more robust supply for the Cecil Park reservoir system. The Western Sydney Airport (W.S.A) is served by the Cecil Park reservoir system and due to the W.S.A construction demand and ultimate operational demands, the supply from Cecil Park reservoir is to be strengthened by:
- i. System area rezoning
  - ii. Construction of a new 60ML reservoir at Liverpool and new trunk transfer main from Liverpool to Cecil Park to be operational in 2022.
  - iii. Additional amplification works are being undertaken to service the Mamre Road precinct including the delivery of a developer funded DN300mm lead in main from the Erskine Park Elevated water supply zone.
  - iv. Sydney Waters' indicative service scheme is shown as follows:



- b) As part of the amplification of the Cecil Park reservoir system a DN1200/DN1050 water main is to be constructed along Elizabeth Drive up to Western Rd by 2022. This major trunk water main will include offtakes to connect to existing mains in Mamre Road.

Connection to the Mamre Rd mains will provide amplification of the capacity of the existing 150mm/180mm in Mamre Rd. This amplification would provide supply to initial developments in the southern area of the Mamre Rd precinct.

Ultimate supply to the Mamre Rd precinct will be obtained by the provision of a new trunk main from Elizabeth Drive to Abbots Rd -- estimated to be a 450mm trunk main.

- c) To determine a demand calculation an assessment based on a G.H.D Basis of Planning Report for the Oakdale precinct has been used. This report indicated that for similar warehouse/logistics development an Average Day Demand of 9.2kl/day/Pure Net Hectare could be used.

Alternatively, an assessment could be based on a Sydney Water Publication "Average daily water use by property type". I have assumed a site area of 20.24ha, with a GFA of 50% of the site area (i.e. 10.12ha). Further assumption of 95% warehouse space and 5% office space has resulted in an assumption of:

- i. Warehouse 85,437m<sup>2</sup>
- ii. Office 5,210m<sup>2</sup>

- d) Calculations of potential water demand based on the provided master planning documents indicated the following: (Refer to Appendix A)

Stage	Average Day Demand (A.D.D)	Max. Day Demand (M.D.D)
1	163kl/day	260kl/day

- e) Supply from the Erskine Park reservoir system based on A.D.D from this system would be 163kl/day (3.8litres/sec over a 12 hour work period).

These flow rates would be obtainable from the proposed rezoned system area.

## 2.2 RECYCLED WATER

- a) Sydney Water have a proposal to reticulate recycled water from the Upper South Creek Advanced Water Recycling Centre (see comments in 2.3 below).
- b) It is expected that recycled water mains ("purple pipes") will be required to be constructed as a component of service delivery for developments within the Mamre Rd precinct.
- c) Sydney Water would provide trunk lead-in recycled water mains to allow connection to those reticulation mains.

## 2.3 WASTE WATER

No existing waste water reticulation systems service the subject site however a number of options exist to provide waste water services to the proposed development.

- a) Sydney Water will build and commission a Waste Water Treatment Plant (WWTP) adjacent to South Creek near the confluence of that creek with Badgerys Creek to be known as the Upper South Creek Advanced Water Recycling Centre. This WWTP will be operational by late 2025 – early 2026 to provide service to W.S.A. (Refer to Appendix C for utility service locations)

Due to the topography of the subject site and proximity to the proposed WWTP discharge by trunk sewer carriers and Sewer Pump Stations from the Site to the WWTP is feasible.

As the WWTP will not be operational before late 2025 or early 2026 Sydney Water are looking to provide an interim solution. The interim solution proposed by Sydney Water is based on construction of a wet well in the northern catchment area of the Mamre Road Precinct. The wet well will collect waste water from a number of development sites and the waste water will be pumped out and tankered to a nominated discharge point. This system will be operated under an agreed interim operating procedure (IOP).

This proposed wet well will be installed along Mamre Road in the N.W corner of the adjacent Mirvac development site. Discharge from the first stage of the development will be directed to this wet well. Altis is currently in discussions with Sydney Water to finalise arrangements to discharge to the wet well.

- b) Sydney Water will construct Sewer Pump Stations (SPS) to service the northern and southern catchments of the Mamre Road precinct. Sydney Water are currently designing those pump stations.
- c) The northern SPS is expected to be operational in 2023 and will discharge waste water to either the Quakers Hill WWTP or St. Marys WWTP.
- d) The southern SPS which is expected to be operational in late 2023 - early 2024 will collect flows from developments within the southern catchment of the precinct, including the subject site. Initially the southern SPS will discharge via a pumped rising main to the northern SPS.
- e) The ultimate configuration will eventually lead to the northern and southern SPS discharging to the Upper South Creek Advanced Water Recycling Centre by 2025-2026 when that facility is operational.

### **3.0 ELECTRICAL SERVICES**

The Kemps Creek Zone Substation has limited capacity to serve developments in this area. Endeavour Energy are constructing the South Erskine Park Zone Substation which is located in the Oakdale West precinct being developed by Goodmans.

This new Zone Substation will be a 90MVA capacity asset. This new Zone Substation is expected to be operational in mid-2022 and will service the Mamre Road precinct.

Endeavour Energy propose to re-energise the existing 11KV feeder system to a 22KV feeder system as part of the commissioning works for the South Erskine Park Zone Substation.

This enhancement of capacity will supply development of the site. Supply arrangements for the estate will be undertaken via Endeavour Energy's normal asset creation process which would outline location of high voltage feeders and any padmount substations to be provided to service the estate.

### **4.0 GAS – JEMENA**

Jemena are the gas utility supplier for this area. Jemena will not commit to gas supply until commitments are made regarding the timing and probability of the release and rezoning of land within the L.U.I.I.P precincts. Jemena will not supply gas reticulation to a site "on spec". Jemena require firm commitments from and users to the quantity of gas to be purchased before it will commit to deliver substantial infrastructure to an area.

No gas reticulation systems exist in the area. Reticulation would need to be extended from the secondary gas main in Elizabeth Drive along Mamre Road.

### **5.0 TELECOMMUNICATIONS**

Limited telco services exist in the area. Currently Telstra supplies services to the residential premises on the site. Expansion of the NBN Co footprint is occurring and fixed line NBN Co services are located 300m – 400m south of the site. Further expansion of the NBN Co footprint will see the site serviced.

# **APPENDIX A POTABLE WATER & WASTE WATER DEMAND**

## 1.0 Potable Water Demand

- a) The Oakdale Local Areas Servicing Plan for a similar style of industrial development based on GHD Basis of Planning Report (July 2016) has indicated an Average Day Demand 9.2kl/day/PNha

Assuming a Net Developable Area of 95% of site area the following applies:

Net Developable Area (PNha)	Average Day Demand (A.D.D) (kl/day)	Max Day Demand (M.D.D) (kl/day)
17.695	163	260

- b) Alternatively based on Sydney Water publication "Average Daily Water Use by Property Type" the following applies (Based on 50% G.F.A with a 95% warehouse and 5% office split)

Property Type	GFA m <sup>2</sup>	A.D.D/m <sup>2</sup>	A.D.D kl/day	M.D.D kl/day
Warehouse	85,430	2.82	240	
Office/Retail	5,210	2.27	12	
<b>Total</b>			<b>252kl/day</b>	<b>400kl/day</b>

This is considered an overestimation based on the type of logistics facilities now being constructed. The appropriate demand figure is based on the GHD Local Area Servicing Plan resulting in a Daily Demand of 163kl/day.

Note: NDA and GFA figures derived from Nettleton Tribe Masterplan drawing No. 11213-DA002 issue P2

## 2.0 Waste Water Demand

- a) Demand can be assessed at 40EP/ha based on Sydney Water Planning guideline.

Gross Developable Area	EP	Discharge EP	A.D.W.F (kl/day)
20.24ha	40	150	120

A.D.W.F = Average Dry Weather Flow

- 2.1 A further assessment is based on a 90% discharge factor of the potable water demand.

Potable Water A.D.D	Demand Factor	A.D.W.F (kl/day)
163	90%	147kl/day

A Potable Water demand of 163kl/day and Waste Water demand of 147kl/day is assessed for development of this site.

# **APPENDIX B**

# **ELECTRICAL DEMAND**

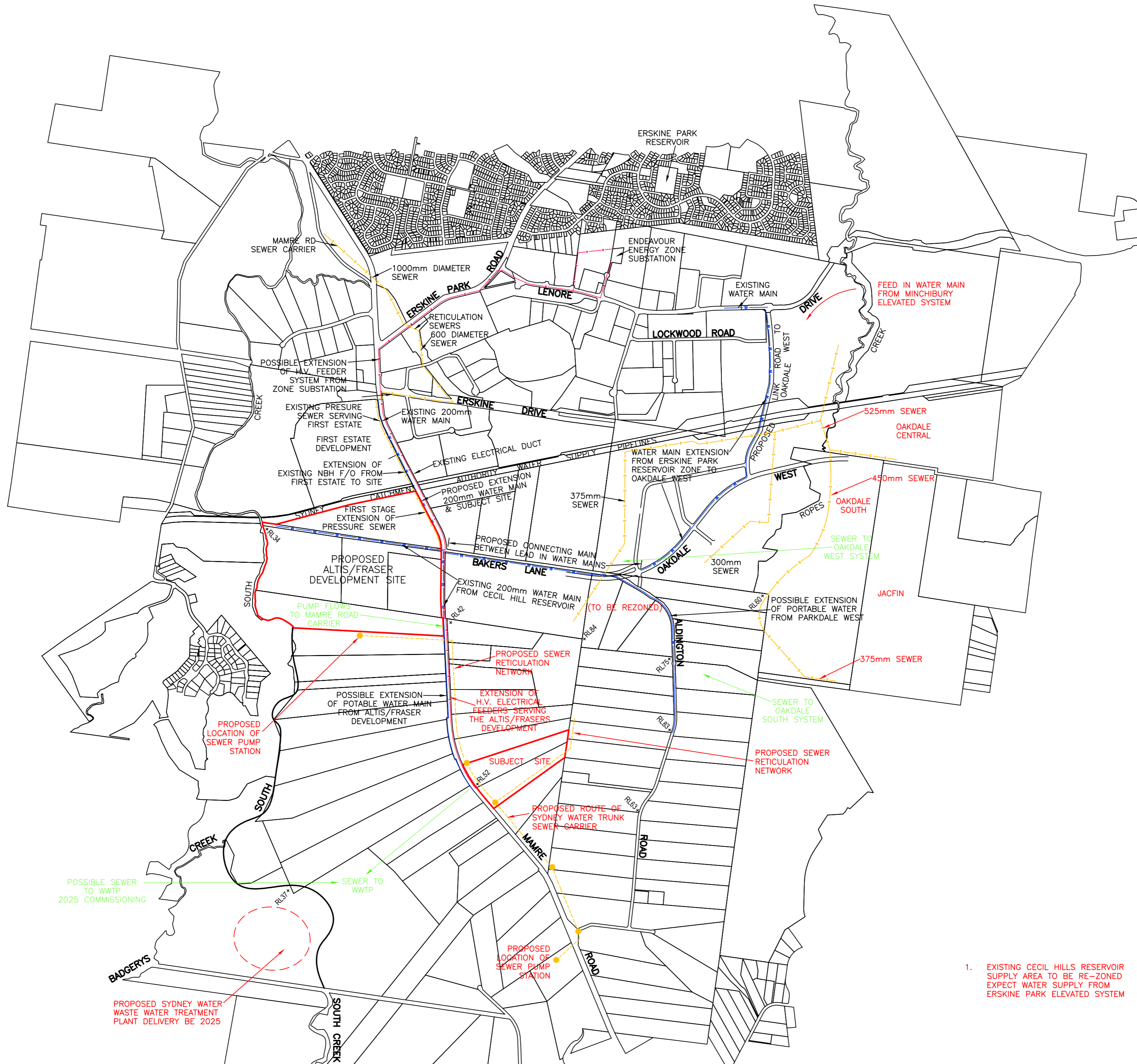
## ELECTRICAL DEMAND ESTIMATE

<b>Office Area (m<sup>2</sup>) (100Va/m<sup>2</sup>)</b>	<b>Warehouse Area (m<sup>2</sup>) (20Va/m<sup>2</sup>)</b>	<b>Total Demand</b>
5,210	85,437	2.3MVa

Note: Floor Area figures derived from Nettleton Tribe Masterplan drawing No. 11213-DA002 issue P2

# **APPENDIX C PLAN OF PROPOSED UTILITY INFRASTRUCTURE WITHIN THE SUBJECT AREA**

M.G.A



CLIENT

ALTIS PROPERTY PARTNERS

PROJECT

PLAN OF SERVICE ASSETS ADJACENT TO SUBJECT SITE KEMPS CREEK

NOTES

The title boundaries shown hereon were not marked at the time of survey and have been determined by plan dimensions only and not by field survey.

Services shown hereon have been located where possible by field survey. If not able to be so located, services have been plotted from the records of relevant authorities where available and have been noted accordingly on the plan. Where such records do not exist or are inadequate a notation has been made hereon.

Prior to any demolition, excavation or construction on the site, the relevant authority should be contacted for possible location of further underground services and detailed locations of all services.

C	GKO	14/07/2021	UPDATED SC INFORMATION
B	GKO	22/09/2020	UPDATED SWC INFORMATION
A	GKO	27/09/2019	CLIENT ISSUE
PPPa/CF	LPL	DD/MM/YY	COMMENT

DRAINAGE PIPE U/G	— SW — SW — SW —
DRAIN	— D — D — D —
ELECT. CABLE A/G	— E — E — E —
ELEC. CABLE U/G	— W — W — W —
GAS PIPE	— G — G — G —
FENCE LINE	— F — F — F —
SEWERAGE PIPE	— S — S — S —
TELSTRA CABLE	— T — T — T —
WATER PIPE	— W — W — W —



**Sydney Office**  
 Level 2, 23-29 South Street  
 Rydalmere NSW 2116  
 PO Box 1144  
 Dundas NSW 2117

p: (02) 9685 2000  
 f: (02) 9685 2001  
 e: info@landpartners.com.au  
 w: www.landpartners.com.au



HEIGHT DATUM	AHD	LOCAL AUTHORITY	PENRITH COUNCIL
HEIGHT ORIGIN	N/A	SCALE	1:20,000 (A2)
MERIDIAN	N/A	CONTOUR INTERVAL	N/A
CO-ORD SYSTEM	N/A	SURVEYOR	N/A
DATE OF SURVEY	N/A	DATE	14/07/2021
FIELD FILE	SY074614.000DCDB	DRAWN	SF/CLP
CHECKED	GKO	DATE	27/09/2019
AUTOCAD FILE	SY074794.000.2_DCDB	CHECKED	GKO
DATE	27/09/2019	APPROVED	GKO
ARCHIVE FILE	SY074794.000.2_DCDB	DATE	27/09/2019

1. EXISTING CECIL HILLS RESERVOIR SUPPLY AREA TO BE RE-ZONED EXPECT WATER SUPPLY FROM ERSKINE PARK ELEVATED SYSTEM

PLAN NUMBER SY074794.000.2\_DCDB Sheet 1 of 1 REV C