

WILLOW TREE
PLANNING

ENVIRONMENTAL IMPACT STATEMENT

Proposed Data Centre

1 Sirius Road, Lane Cove West
(Lot 1 in DP 1151370)

Prepared by Willowtree Planning on behalf of
Greenbox Architecture

April 2019



Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Document Control Table

Document Reference:	Ref: WTJ18-457		
Date	Version	Author	Checked By
20/12/2018	1	T. Lythall	A. Cowan
21/12/2018	2	T. Lythall	A. Cowan
12/02/2019	3	T. Lythall	A. Cowan
28/02/2019	4	T. Lythall	A. Cowan
15/03/2019	5	T. Lythall	A. Cowan
28/03/2019	6	T. Lythall	A. Cowan
09/04/2019	7	T. Lythall	A. Cowan

© 2019 Willowtree Planning Pty Ltd

This document contains material protected under copyright and intellectual property laws and is to be used only by and for the intended client. Any unauthorised reprint or use of this material beyond the purpose for which it was created is prohibited. No part of this work may be copied, reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or by any information storage and retrieval system without express written permission from Willowtree Planning Pty Ltd.

SECTION 4.12 CERTIFICATE

Declaration Form

Submission of Environmental Impact Statement (EIS)
prepared under the *Environmental Planning and Assessment Act 1979 – Part 4, Division 4.3, Section 4.12*

EIS Prepared By

Name	Travis Lythall
Qualifications	Bachelor of Science, UoN
Address	Suite 4, Level 7 100 Walker Street North Sydney, NSW, 2060

In Respect Of

Proposed Data Centre

Development Application

Applicant Name	Greenbox Architecture
Address	Level 25, 25 Bligh Street, Sydney, NSW, 2000

Land to be Developed

1 Sirius Road, Lane Cove West
▪ Lot 1 in Deposited Plan 1151370

EIS

An Environmental Impact Statement (EIS) is attached.

Certificate

I certify that I have prepared the contents of this EIS and to the best of my knowledge:

- it is in accordance with Schedule 2 of the *Environmental Planning and Assessment Regulation 2000*,
- contains all available information that is relevant to the environmental assessment of the development, activity or infrastructure to which the statement relates, and
- that the information contained in the statement is neither false nor misleading.

Signature



Name	Travis Lythall
Qualification	BSc, UoN
Date	09 April 2019

TABLE OF CONTENTS

FIGURES	V
TABLES	VI
APPENDICES	VIII
GLOSSARY OF KEY TERMS	IX
EXECUTIVE SUMMARY	X
PART A PRELIMINARY	12
1.1 INTRODUCTION	12
1.2 PROJECT TEAM	13
1.3 THE PROPONENT	13
1.4 CAPITAL INVESTMENT VALUE	13
1.5 EXISTING ZONING PROVISIONS	13
1.6 SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS	14
PART B SITE ANALYSIS	20
2.1 SITE LOCATION & EXISTING SITE CHARACTERISTICS	20
2.2 LAND OWNERSHIP	24
2.3 SITE CONTEXT	24
2.4 STRATEGIC CONTEXT	24
2.5 DEVELOPMENT AND PLANNING HISTORY	26
2.6 SITE SUITABILITY	26
PART C PROPOSED DEVELOPMENT	27
3.1 OBJECTIVES OF THE PROPOSAL	27
3.2 DESCRIPTION OF THE PROPOSAL	27
3.2.1 DATA CENTRE	27
3.2.2 SITE PREPARATION	32
3.2.3 DANGEROUS GOODS	32
3.2.4 PROJECT DOCUMENTATION	33
3.3 PROJECT NEED	34
3.4 CONSIDERATION OF ALTERNATIVES	34
3.5 PROPOSED DATA CENTRE	35
PART D LEGISLATIVE AND POLICY FRAMEWORK	38
4.1 COMMONWEALTH PLANNING CONTEXT	38
4.1.1 ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999	38

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

4.2	STATE PLANNING CONTEXT	39
4.2.1	ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979	39
4.2.2	ENVIRONMENTAL PLANNING AND ASSESSMENT REGULATION 2000	39
4.2.3	BIODIVERSITY CONSERVATION ACT 2016	39
4.2.4	PROTECTION OF THE ENVIRONMENT OPERATIONS ACT 1979	41
4.2.5	STATE ENVIRONMENTAL PLANNING POLICY (STATE AND REGIONAL DEVELOPMENT) 2011	41
4.2.6	STATE ENVIRONMENTAL PLANNING POLICY (INFRASTRUCTURE) 2007	41
4.2.7	STATE ENVIRONMENTAL PLANNING POLICY NO 19 – BUSHLAND IN URBAN AREAS	42
4.2.8	STATE ENVIRONMENTAL PLANNING POLICY NO. 33 – HAZARDOUS AND OFFENSIVE DEVELOPMENT	42
4.2.9	STATE ENVIRONMENTAL PLANNING POLICY NO. 55 – REMEDIATION OF LAND	42
4.2.10	STATE ENVIRONMENTAL PLANNING POLICY (COASTAL MANAGEMENT) 2018	44
4.2.11	SYDNEY REGIONAL ENVIRONMENTAL PLAN (SYDNEY HARBOUR CATCHMENT) 2005	45
4.3	REGIONAL PLANNING CONTEXT	47
4.3.1	A METROPOLIS OF THREE CITIES – GREATER SYDNEY REGION PLAN	47
4.3.2	NORTH DISTRICT PLAN	48
4.3.3	NSW FUTURE TRANSPORT STRATEGY 2056	50
4.4	LOCAL PLANNING CONTEXT	50
4.4.1	LANE COVE LOCAL ENVIRONMENTAL PLAN 2009	50
4.4.2	DRAFT ENVIRONMENTAL PLANNING INSTRUMENTS	57
4.4.3	LANE COVE DEVELOPMENT CONTROL PLAN 2009	57
4.4.4	LANE COVE DEVELOPMENT CONTRIBUTIONS PLAN	57

PART E CONSULTATION **58**

5.1	SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS	58
5.2	STAKEHOLDER CONSULTATION	75

PART F ENVIRONMENTAL RISK ASSESSMENT **82**

6.1	SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS	82
6.2	STRATEGIC & STATUTORY CONTEXT	82
6.3	URBAN DESIGN AND VISUAL	83
6.4	SAFETY, SECURITY AND CRIME PREVENTION	98
6.5	SOILS AND WATER	99
6.6	TRAFFIC AND TRANSPORT	108
6.7	WASTE	113
6.8	NOISE AND VIBRATION	119
6.9	AIR QUALITY AND ODOUR	131
6.10	HAZARDS AND RISKS	132
6.11	BIODIVERSITY	132
6.12	SOCIO-ECONOMIC IMPACTS	141
6.13	ABORIGINAL CULTURAL HERITAGE	142
6.14	HISTORIC HERITAGE	146
6.15	BUSHFIRE	150
6.16	INFRASTRUCTURE REQUIREMENTS	154
6.17	GREENHOUSE GAS AND ENERGY EFFICIENCY	155
6.18	ECOLOGICALLY SUSTAINABLE DEVELOPMENT	155
6.19	BUILDING CODE OF AUSTRALIA AND FIRE ENGINEERING	156

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

PART G DRAFT MANAGEMENT AND MITIGATION MEASURES 161

PART H PROJECT DEVELOPMENT JUSTIFICATION 167

PART I CONCLUSION 169

Figures

Figure 1 Land Zoning Applicable to the Subject Site under Lane Cove Local Environmental Plan 2009 (Source: NSW Legislation, 2018)	21
Figure 2 Existing Site Context and Surrounding Area (Source: NearMaps, 2018)	22
Figure 3 Cadastral Image of Subject Site and Surrounding Context (Source: SIX Maps, 2018)	23
Figure 4 Land Application Under Lane Cove Local Environmental Plan 2009 (Source: NSW Legislation, 2018)	25
Figure 5 Proposed Development Site Plan (Source: Greenbox Architecture, 2018)	29
Figure 6 Proposed Northern and Southern Elevation Plans (Source: Greenbox Architecture, 2018)	30
Figure 7 Proposed Eastern and Western Elevation Plans (Source: Greenbox Architecture, 2018)	31
Figure 8 Proposed Bulk Earthworks Plan (Source: Van Der Meer, 2018)	32
Figure 9 Data Centre Operations (Source: Greenbox, 2018)	36
Figure 10 Proposed Development Operational Flow Chart (Source: Greenbox, 2018)	37
Figure 11 Subject Site Mapped under the Coastal Management SEPP (Source: DP&E, 2018)	45
Figure 12 Foreshores and Waterways Area Map (Source: NSW DP&E, 2018)	46
Figure 13 Sydney harbor Catchment SREP Zoning Map (Source: NSW DP&E, 2018)	46
Figure 14 Metropolis of 3 Cities A Vision to 2056 (Greater Sydney Commission: Greater Sydney Region Plan, 2018)	48
Figure 15 North District Plan Structure Plan (Source: Greater Sydney Region Plan, 2018)	49
Figure 16 Maximum Building Height of Subject Site and Surrounding Area (Source: NSW Legislation, 2018)	53
Figure 17 Maximum Floor Space Ratio of Subject Site and Surrounding Area (Source: NSW Legislation, 2018)	54
Figure 18 Potential of Acid Sulfate Soils Occurring to the Subject Site and Surrounding Area (Source: NSW Legislation, 2018)	55
Figure 19 Riparian Land Applicable to the Subject Site and Surrounding Area (Source: NSW Legislation, 2018)	56
Figure 20 Proximity for which Landowners were Engaged for Consultation (NearMaps, 2018)	76
Figure 21 North and South Section of the Proposed Development (Source: Geoscapes, 2018)	84
Figure 22 East and West Section of the Proposed Development (Source: Geoscapes, 2018)	84
Figure 23 Viewpoint Locations (Source: Geoscapes, 2018)	87
Figure 24 On-Site at Eye Level (Position 1) Looking North (Source: Geoscapes, 2018)	88
Figure 25 On-Site at Eye Level (Position 1) Looking West (Source: Geoscapes, 2018)	88
Figure 26 On-Site at Eye Level (Position 1) Looking South (Source: Geoscapes, 2018)	88
Figure 27 On-Site at Eye Level (Position 2) Looking North (Source: Geoscapes, 2018)	89
Figure 28 On-Site at Eye Level (Position 2) Looking East (Source: Geoscapes, 2018)	89
Figure 29 On-Site at Eye Level (Position 2) Looking South (Source: Geoscapes, 2018)	89
Figure 30 On-Site at Eye Level (Position 2) Looking West (Source: Geoscapes, 2018)	90
Figure 31 Drone at 40 m RL (Position 1) Looking North (Source: Geoscapes, 2018)	90
Figure 32 Drone at 40 m RL (Position 1) Looking East (Source: Geoscapes, 2018)	91
Figure 33 Drone at 40 m RL (Position 1) Looking South (Source: Geoscapes, 2018)	91
Figure 34 Drone at 40 m RL (Position 1) Looking West (Source: Geoscapes, 2018)	92

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Figure 35 Public Transport Services (Source: ARUP, 2018)	96
Figure 36 Existing Cycle Infrastructure (Source: ARUP, 2018)	97
Figure 37 Lane Cove Bicycle Plan with the Proposed Bicycle Network (Source: ARUP, 2018)	97
Figure 38 Site and Test Pit Locations (Source: Douglas Partners, 2018)	103
Figure 39 Areas of the Subject Site Requiring Remediation (Source: Senversa, 2018)	107
Figure 40 Road Hierarchy (Source: ARUP, 2018)	108
Figure 41 Proposed Site Layout with Regard to Parking and Loading Areas (Source: ARUP, 2018)	109
Figure 42 Proposed Construction Vehicle Routes (Source: ARUP, 2018)	113
Figure 43 Receiver and Noise Monitoring Locations (Source: ARUP, 2018)	119
Figure 44 Cut-away Section (top) and rendered view (bottom) of a proposed chiller enclosure (Source: ARUP, 2019)	126
Figure 45 Cooling Tower with Attenuators Installed (Source: ARUP, 2019)	127
Figure 46 Indicative Generator Enclosure (Source: ARUP, 2019)	128
Figure 47 Locality Map (Source: Ecoplaning, 2018)	133
Figure 48 Vegetation Types (OEH 2016a) (Source: Ecoplaning, 2018)	134
Figure 49 Field Results and Validated Vegetation with the Subject Site (Source: Ecoplaning, 2018)	137
Figure 50 Management Zones Applicable to the Subject Site (Source: Ecoplaning, 2018)	138
Figure 51 Survey Coverage and Results (Source: Biosis, 2018)	143
Figure 52 Location of Heritage Items in the Vicinity of the Study Area (Source: Biosis, 2019)	147
Figure 53 Current Aerial Showing Cleared with No Structures (Source: Biosis, 2019)	148

Tables

Table 1: Proponent Contact Details	13
Table 2: How SEARs have been Satisfied	14
Table 3: Proposed State Significant Development Particulars	27
Table 4: Cut/Fill Balance	32
Table 5: Document Schedule and Consultant Team	33
Table 6: Prescribed Biodiversity Impacts	39
Table 7: Classification of Diesel in Storage	42
Table 8: Lane Cove Local Environmental Plan 2009 (LCLEP2009) – General LEP Clauses	50
Table 9: How SEARs have been Satisfied	58
Table 10: Lane Cove Council's Key Issues for Assessment	63
Table 11: NSW Office of Environment & Heritage Key Issues for Assessment	66
Table 12: Roads and Maritime Services (RMS) Key Issues for Assessment	70
Table 13: Transport for NSW Key Issues for Assessment	70
Table 14: Sydney Water Key Issues for Assessment	72
Table 15: AusGrid Key Issues for Assessment	73
Table 16: Fire & Rescue NSW Key Issues for Assessment	73
Table 17: Department of Industry Key Issues for Assessment	73
Table 18: NSW Environment Protection Authority (EPA) Key Issues for Assessment	74
Table 19: City of Ryde Council Key Issues for Assessment	74
Table 20: Consultation Record	77
Table 21: Consultation Undertaken with Adjoining Landowners	78
Table 22: Indicative Noise Mitigation Measures	94
Table 23: COS Pollution Reduction Targets	99
Table 24: Summary of Treatment Train	100
Table 25: Comparison of Pollutant Reduction Target vs. Achieved	100
Table 26: Flood Levels in Critical Durations for Each Event	101
Table 27: Flood Levels in Critical Durations for Each Event	101
Table 28: Recommended Maximum Batter Slopes for Excavated Slopes	104
Table 29: Suggested Material Parameters for Preliminary Design of Excavation Support Structures	105

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Table 30: Recommended Maximum Batter Slopes for Excavated Slopes	105
Table 31: Trip Generation for the Proposed Development.....	111
Table 32: Forecast Traffic Generation the Proposed Development.....	111
Table 33: Forecast Construction Vehicle Movements	112
Table 34: Potential Waste Types, Classifications and Management Methods – Construction Waste	114
Table 35: Construction Waste Generation Rates.....	116
Table 36: Anticipated Types and Estimated Quantities of Construction Waste	116
Table 37: Potential Waste Types, Classifications and Management Methods – Operational Waste	117
Table 38: Estimated Quantities of Operational Waste and Recycling	118
Table 39: Assessment Locations	119
Table 40: Long-term Noise Monitoring Results (dB(A))	120
Table 41: Short-term Noise Monitoring Results (dB(A))	120
Table 42: NPI RANLs and PANLs	121
Table 43: NPI Project Specific Noise Levels for Residential Receivers.....	121
Table 44: Project Equipment, Quantities and Unmitigated Sound Power Levels (Per Unit)..	122
Table 45: Normal Operations, Standard Meteorological Conditions, Predicted Noise Levels	123
Table 46: Emergency Generator Testing (Single Generator), Predicted Noise Levels.....	123
Table 47: Emergency Operations (All Generators), Predicted Noise Levels – Standard Meteorological Conditions	124
Table 48: Indicative Noise Mitigation Measures	124
Table 49: Project Equipment, Quantities and Mitigated Sound Power Level (Per Unit)	128
Table 50: Normal Operations, Predicted Noise Levels (Mitigated)	129
Table 51: Emergency Generator Testing (Single Generator), Predicted Noise Levels.....	129
Table 52: Emergency Operations (All Generators), Predicted Noise Levels – Standard Meteorological Conditions	130
Table 53: Construction Noise Management Criteria for Residential Premises	131
Table 54: Emission Rate Assessment.....	131
Table 55: Classification of Diesel in Storage	132
Table 56: Details of PCTs within the Subject Site including Area of Vegetation Zones.....	135
Table 57: VIS Plant Community Type Profile (OEH 2018b) – Smooth-barked Apple – Red Bloodwood Open Forest on Enriched Sandstone Slopes Around Sydney and the Central Coast (PCT 1776; HN654).....	135
Table 58: Vegetation Integrity Scores.....	139
Table 59: AHIMS Sites within the Vicinity of the Study Area	142
Table 60: Significance Assessment Criteria	145
Table 61: Assessment of Archaeological Potential	149
Table 62: Bushfire Attack Assessment	151
Table 63: Performance Criteria for Asset Protection Zones (PBP Guidelines (pg. 19))	152
Table 64: NABERS Energy Stars with Permissible PUE	155
Table 65: Relevant Performance Requirements of the BCA – Fire Safety Items	156
Table 66: BCA Access Requirements	157
Table 67: Indicative Noise Mitigation Measures	163

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Appendices

Appendix 1	Secretary's Environmental Assessment Requirements
Appendix 2	Pre-DA (Pre-SEARs) Meeting Minutes
Appendix 3	Quantity Surveyors Report
Appendix 4	Survey Plan
Appendix 5	Architectural Plans
Appendix 6	Landscape Plans
Appendix 7	Landscape Design Report
Appendix 8	Landscape and Visual Impact Assessment
Appendix 9	Water Quality Report
Appendix 10	Flood Assessment Report
Appendix 11	Civil Engineering Drawings and Plans
Appendix 12	Geotechnical Report
Appendix 13	Phase 1 Due Diligence Assessment
Appendix 14	Phase 2 Acquisition Environmental Due Diligence Assessment
Appendix 15	Sampling and Analytical Quality Plan
Appendix 16	Remedial Action Plan
Appendix 17	Traffic Impact Assessment
Appendix 18	Waste Management Plan
Appendix 19	Noise Impact Assessment
Appendix 20	Construction Noise Management Plan
Appendix 21	Air Quality Impact Assessment
Appendix 22	SEPP 33 Report
Appendix 23	Biodiversity Development Assessment Report
Appendix 24	Tree Impact Assessment Report
Appendix 25	Archaeological Report
Appendix 26	Aboriginal Cultural Heritage Assessment Report
Appendix 27	Historic Heritage Impact Statement
Appendix 28	Bushfire Report
Appendix 29	Site Infrastructure Report
Appendix 30	Energy Efficiency Report
Appendix 31	BCA Report
Appendix 32	Fire Engineering Report
Appendix 33	Access Report
Appendix 34	Community Consultation Report
Appendix 35	Clause 4.6 Variation – Height
Appendix 36	Lane Cove Development Control Plan 2009 Compliance Table
Appendix 37	Options Analysis
Appendix 38	Vegetation Management Plan

GLOSSARY OF KEY TERMS

TERM	MEANING
Applicant / Proponent	Greenbox Architecture
AU\$	Australian Dollars
CIV	Capital Investment Value
Council	Lane Cove Council
DA	Development Application
DP&E	Department of Planning and Environment
EIS	Environmental Impact Statement
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i> (as amended)
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
Greater Sydney Region Plan	<i>Greater Sydney Region Plan – A Metropolis of Three Cities</i>
LEP	Local Environmental Plan
OEH	NSW Office of Environment and Heritage
RMS	NSW Roads & Maritime Services
SEARs	Secretary's Environmental Assessment Requirements issued 21 December 2018 (SSD 9741)
SEPP	State Environmental Planning Policy
SRD SEPP	<i>State Environmental Planning Policy (State and Regional Development) 2011</i>
The Site / Subject Site	1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)
Sqm or m²	Square metres
SREP	Sydney Regional Environmental Plan
SSD	State Significant Development
SSDA	State Significant Development Application
Willowtree Planning	Willowtree Planning Pty Ltd

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

EXECUTIVE SUMMARY

This Environmental Impact Statement (EIS) has been prepared by Willowtree Planning Pty Ltd (Willowtree Planning) on behalf of Greenbox Architecture. The Proposed Development seeks consent for the construction and operational use of a Data Centre on the identified land portion – 1 Sirius Road, Lane Cove West (Lot 1 DP 1151370).

The Proposed Development is for the construction of a world-class Data Centre, that provides data storage facilities for the electronic information of large technology companies. The completed facility will deliver the infrastructure to support the growth of cloud services in the region. Unlike other types of warehouses, when operational the facility remains clean and secure, with minimal vehicle traffic and is staffed 24/7.

The Proposed Development will be a low impact addition to the existing Lane Cove West Business Park and will align with the development controls established by Lane Cove Council. It will provide positive social and economic benefits to the area and deliver an increasingly important cloud and data centre service to the broader community. With its light industrial aesthetic, it will complement the area and its adjoining neighbours. The steeply contoured site allows for the majority of the building to be tucked into the hill-side. The materials for the external cladding also ensure integration into the existing landscape.

The Data Centre's state-of-the-art design, equipment and technologies will provide industry-leading energy efficient solutions and the inherent building fabric performance will ensure a sustainable development.

The Subject Site is owned by Rove Estate and is currently an undeveloped land portion. The Subject Site is under the land application of the Lane Cove Local Government Area (LGA), for which it is zoned IN2 Light Industrial under the *Lane Cove Local Environmental Plan 2009* (LCLEP2009). The proposed development is consistent with surrounding land uses to which LCLEP2009 applies; and, would contribute to the efficient use of employment lands for warehousing and distribution purposes, i.e. the proposed Data Centre.

The process of applying for State Significant Development (SSD) requires that the Capital Investment Value (CIV) be greater than AU\$50 Million for proposed Warehouse or Distribution Centres pursuant to *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP), Schedule 1, Part 12. The Proposed Development is considered SSD, for which it would be lodged to and determined by the NSW Department of Planning & Environment (DP&E).

Under the *Environmental Planning and Assessment Act 1979* (EP&A Act) it is required that a formal request for SEARs be made prior to lodgement of an Application seeking approval. SEARs were requested for the proposed SSD (Reference: SSD 9741) and later issued by the NSW DP&E on 21 December 2018 (refer to **Appendix 1** of this Submission).

In addition to the general requirements, the SEARs for the Proposed Development highlights a number of Key Issues, to be addressed as part of the EIS, including:

- Strategic and Statutory Context;
- Urban Design and Visual;
- Suitability of the Site;
- Community and Stakeholder Engagement;
- Soils and Water;
- Traffic and Transport;
- Noise and Vibration;
- Infrastructure Requirements;
- Heritage;

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

- Waste;
- Air Quality;
- Hazards and Risks;
- Bushfire and Incident Management;
- Biodiversity; and,
- Social.

Other areas evaluated throughout this EIS (for added due diligence) include the following:

- Visual Impacts;
- Greenhouse Gas and Energy Efficiency; and,
- Ecologically Sustainable Development (ESD).

Accordingly, the findings of this EIS identify that the Proposed Development can be accommodated without generating impacts that are considered unacceptable, in line with the relevant legislation applicable to the Subject Site. Furthermore, the proposed Data Centre would be consistent with the objectives outlined within the LCLEP2009, *Greater Sydney Region Plan – A Metropolis of Three Cities*, the *North District Plan*; and, remains consistent with the principles of ESD, as part of the overall vision and integrated design.

Based on the findings of this EIS, the Proposed Development supports the development of a Data Centre, providing further employment-generating opportunities in the immediate local communities, as well as to the wider locale of the Metropolitan Sydney Region.

The Proposed Development is deemed suitable for its regional and local context and would not result in any significant environmental impacts, for which it satisfactorily addresses the SEARs (issued 21 December 2018). As such, it is recommended that the Proposed Development be supported by the NSW DP&E.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

PART A PRELIMINARY

1.1 INTRODUCTION

This EIS has been prepared by Willowtree Planning on behalf of the Proponent, Greenbox Architecture, and is submitted to the NSW DP&E in support of the Proposed Development on the land portion described as 1 Sirius Road, Lane Cove West (Lot 1 DP 1151370), for the purpose of a Data Centre.

This State Significant Development Application (SSDA) seeks development consent for the construction and operational use of a proposed Data Centre that would play a vital role in providing an advanced facility to support the growth and development of IT infrastructure across the Metropolitan Sydney region and would contribute to the enhanced promotion and creation of creating employment-generating opportunities. The Proposed Development is summarised below as follows:

- Bulk earthworks across the Site to establish the building pad for the proposed Data Centre building;
- Provision of infrastructure and services (includes provisions for an electrical substation);
- Construction of the Data Centre building (24 m in height) as depicted on the proposed Site Plan (refer to **Appendix 5** of this Submission);
- Construction of the landscaped area.
- There are several stages to the works. Construction jobs generated by the Proposed Development works, is expected to be in the order of approximately 320 construction jobs, including civil works for the construction of the Data Centre building;
- Approximately, 80-100 full-time operational jobs, are estimated to be created as a result of the Proposed Development:
 - From the Proposed Development's operational commencement ('Day 1') there would be approximately 20-30 staff on-site during normal business hours;
 - At full capacity, approximately 50-70 staff would be on-site during normal business hours; and,
 - Overnight and on the weekends, there would be approximately 10-20 staff on-site.
- Car parking rates will be constructed in accordance with the:
 - One (1) space per 300 m² of warehouse GFA;
 - One (1) space per 60 m² of ancillary office GFA; and,
 - One (1) disabled space per 50 car parking spaces (minimum one (1) space).

The Subject Site is currently owned by Rove Estate Pty Ltd (ACN 159 553 652) and is characterized by an undeveloped land portion, zoned for such industrial-related purposes. The ongoing operational use of the Subject Site would be for the purpose of a Data Centre.

As discussed throughout this EIS, the Proposed Development seeks to establish an innovative operation that would benefit the end user on a National; State; Regional; and, Local scale as well as benefitting the immediate community and wider locale through the enhanced promotion of employment opportunities.

This EIS describes the Subject Site and Proposed Development, provides relevant information, responds to the SEARs; and, assesses the Proposed Development in terms of the relevant matters set out in relevant legislation, Environmental Planning Instruments (EPIs) and associated planning policies.

The structure of this EIS is as follows:

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

- **Part A Preliminary**
- **Part B Site Analysis**
- **Part C Proposed Development**
- **Part D Legislative and Policy Framework**
- **Part E Consultation**
- **Part F Environmental Risk Assessment**
- **Part G Management and Mitigation Measures**
- **Part H Project Development Justification**
- **Part I Conclusion**

1.2 PROJECT TEAM

The Project Team involved in the preparation of this SSDA include:

- Greenbox Architecture (Proponent & Architect)
- Willowtree Planning (Planning Consultant)
- Linesight (Quantity Surveyor)
- S.P. Site Setout Pty Ltd (Surveyor)
- Geoscapes (Landscaping and Visual Impact Assessment)
- Van Der Meer (Water Quality & Civil Plans)
- GRC Hydro (Flood Assessment)
- Douglas Partners (Geotechnical)
- Senversa (Contamination)
- ARUP (Traffic, Noise, Air, Site Infrastructure, Energy)
- SLR Consulting (Waste Management, Hazards)
- AW Edwards (CNMP)
- Ecoplanning (Biodiversity)
- Travers Bushfire & Ecology (Tree Assessment and Bushfire)
- Biosis (Aboriginal and Historic Heritage)
- Mckenzie (BCA, Access)
- Scientific Fire Services (Fire Engineering)

1.3 THE PROPONENT

The proponent is Greenbox Architecture. See **Table 1** for contact details.

Table 1: Proponent Contact Details	
Contact Name	Andrew Owens
Company Details	Greenbox Architecture
Contact Number	0425 354 703

1.4 CAPITAL INVESTMENT VALUE

The CIV of the proposed development is estimated at AU\$216,465,700.00 (including GST) subject to final costing and tender clarifications (**Appendix 3**).

1.5 EXISTING ZONING PROVISIONS

The Site is currently zoned IN2 Light Industrial under the provisions of LCLEP2009.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

1.6 SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS

Prior to obtaining the SEARs, a meeting was held with the NSW DP&E on 11 November 2018, to discuss the Proposed Development and to confirm that the SEARs could be issued accordingly.

Accordingly, application to receive the SEARs was submitted (Reference: SSD 9741). The SEARs were subsequently issued by the NSW DP&E on 21 December 2018 and are satisfactorily addressed throughout the contents of this EIS and complete submission.

The full SEARs, as issued, are annexed in **Appendix 1** of this Submission. An overview of how the Secretary's Requirements have been satisfied by this EIS are also outlined in **Table 2** and further in **Section 5.1** of this EIS. This document is also consistent with the minimum requirements for Environmental Impact Statements, as set out in Clauses 6 & 7 of Schedule 2 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation).

Table 2: How SEARs have been Satisfied	
General Requirements	How Addressed
The EIS for the proposed development must meet the form and content requirements in Clauses 6 & 7 of Schedule 2 of the EP&A Regulation.	This EIS has been prepared in accordance with Clauses 6 & 7 of Schedule 2 of the EP&A Regulation. The structure of this EIS addresses all legislative requirements.
Key Issues	
The EIS must include an assessment of the potential impacts of the proposal (including cumulative impacts) and develop appropriate measures to avoid, mitigate, manage and/or offset these impacts. The EIS must address the following specific matters:	Part F
Statutory and Strategic Context – including: - detailed justification that the proposed land use is permissible with consent; - details of any proposed consolidation or subdivision of land; - demonstration that the proposal is consistent with all relevant planning strategies, environmental planning instruments, adopted precinct plans, draft district plan(s) and adopted management plans and justification for any inconsistencies. This includes, but is not limited to: - State Environmental Planning Policy (Infrastructure) 2007 - State Environmental Planning Policy (State and Regional Development) 2011 - State Environmental Planning Policy (Coastal Management) 2018 - Sydney Regional Environment Plan (Sydney Harbour Catchment) 2005 - Greater Sydney Region Plan: A Metropolis of Three Cities - Our Greater Sydney 2056: North District Plan - Future Transport Strategy 2056.	Refer to Section 2.3 and Part D .

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Suitability of the Site – including: An analysis of site constraints, such as bushfire and flooding impacts.	Refer to Section 2.5, 6.5 & 6.15.
Community and Stakeholder Engagement – including: ▪ a detailed community and stakeholder participation strategy which identifies who in the community has been consulted and a justification for their selection, other stakeholders consulted and the form(s) of consultation, including a justification for this approach; ▪ a report on the results of the implementation of the strategy including issues raised by the community and surrounding land owners and occupiers that may be impacted by the proposal; ▪ details of how issues raised during community and stakeholder consultation have been addressed and whether they have resulted in changes to the proposal; ▪ details of the proposed approach to future community and stakeholder engagement based on the results of consultation.	Refer to Part E and Appendix 34.
Noise and Vibration – including: ▪ a quantitative noise and vibration impact assessment undertaken by a suitably qualified person in accordance with the relevant Environment Protection Authority guidelines and including an assessment of nearby sensitive receivers; ▪ cumulative impacts of other developments ▪ details of proposed mitigation, management and monitoring measures.	Refer to Section 6.8 and Appendix 19 & 20.
Urban Design and Visual – including: ▪ a visual impact assessment (including photomontages and perspectives) of the development layout and design (buildings and storage areas), including staging, site coverage, setbacks, open space, landscaping, height, colour, scale, building materials and finishes, façade design, signage and lighting, particularly in terms of potential impacts on: ○ nearby public and private receivers; and ○ significant vantage points in the broader public domain including Magdala Park ▪ consideration of the layout and design of the development having regard to the surrounding vehicular, pedestrian and cycling networks; and, ▪ detailed plans showing suitable landscaping which incorporates endemic species.	Refer to Section 6.3 and Appendix 6, 8 & 35.
Contamination – including: ▪ a detailed assessment of the extent and nature of any contamination of the soil, groundwater and soil vapour, in accordance with State Environmental Planning Policy No. 55 – Remediation of Land; ▪ an assessment of potential risks to human health and the environmental receptors in the vicinity of the site;	Refer to Section 4.2.9, 6.5 and Appendix 13-16.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

▪ demonstration that the proposal is consistent with site's 'Maintenance of Remediation Order' (Notice No. 28027, dated 27/09/2005); ▪ a description and appraisal of any mitigation and monitoring measures; and, ▪ consideration of whether the site is suitable for the proposed development.	
Biodiversity – including: ▪ an assessment of the proposal's biodiversity impacts in accordance with the Biodiversity Conservation Act 2016, including the preparation of a Biodiversity Development Assessment Report (BDAR) where required under the Act, except where a waiver for preparation of a BDAR has been granted; ▪ as assessment of the proposal's impact upon the adjacent coastal wetland area, in accordance with State Environmental Planning Policy (Coastal Management) 2018; ▪ as assessment of the proposal's impact upon the Lane Cove River and adjacent key fish habitat areas and riparian corridors, in accordance with the relevant Department of Primary Industries guidelines; ▪ describe how impacts upon critical vegetation and endangered species on-site will be avoided and minimised.	Refer to Section 4.2.3, 6.11 and Appendix 23 .
Infrastructure Requirements – including: ▪ a detailed written and/or graphical description of infrastructure required on the site, including the proposed electricity substation; ▪ 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; ▪ 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; ▪ an assessment of the impacts of the development on existing utility infrastructure and service provider assets surrounding the site, and describe how any potential impacts would be avoided and minimised.	Refer to Section 6.16 and Appendix 29 .
Sustainable Development – including: ▪ an assessment of the energy use of the proposal and all reasonable and feasible measures that would be implemented on site to minimise the proposal's greenhouse gas emissions; ▪ a description of how the proposal will incorporate the principles of ecologically sustainable development in the design, construction and ongoing operation of the development; and, ▪ a description of the measures to be implemented to minimise consumption of resources, especially energy and water.	Refer to Section 6.17 & 6.18 and Appendix 30 .

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Traffic and Access – including: ▪ a quantitative Traffic Impact Assessment prepared in accordance with relevant Lane Cove Council, Austroads and Roads and Maritime Services guidelines using current traffic counts and cumulative traffic from surrounding existing and approved development and the proposed development; ▪ details of all daily and peak traffic and transport movements likely to be generated by the development during construction and indicative operation (vehicle type, public transport, pedestrian and bicycle trips) including the impact on the nearby intersections (using SIDRA or similar modelling); ▪ details of the likely arrival and departure times for vehicles for all components of the proposed development; ▪ details of the largest vehicle anticipated to access and move within the site, including swept path analysis; ▪ details and plans of the internal road network, loading dock servicing and provisions, on-site parking provisions, and sufficient pedestrian and cyclist facilities, in accordance with the relevant Australian Standards; ▪ details of road upgrades, new roads or access points required for the development, if necessary.	Refer to Section 6.6 and Appendix 17.
Soils and Water – including: ▪ a description of the catchment and proximity of the site to waterways, including the Lane Cove River; ▪ consideration of potential local and mainstream flooding impacts; ▪ an assessment of potential surface and groundwater impacts associated with the development, including potential impacts on the Lane Cove River, other watercourses, riparian areas, groundwater, and groundwater-dependent communities nearby; ▪ an assessment in accordance with ASSMAC Guidelines for the presence and extent of acid sulfate soils (ASS) and potential acid sulfate soils (PASS) on the site and, where relevant, appropriate mitigation measures; ▪ a description of the surface, stormwater and wastewater management systems, including on site detention, and measures to treat or reuse water; ▪ a detailed water balance including a description of the water demands and breakdown of water supplies; and any water licensing requirements; ▪ description of the measures to minimise water use; and ▪ description of the proposed erosion and sediment controls during construction.	Refer to Section 3.2.2, & 6.5 and Appendix 9-11.
Hazards and Risks – including: a preliminary risk screening completed in accordance with State Environmental Planning Policy No. 33 – Hazardous and Offensive Development and Applying SEPP 33 (DoP, 2011), with a clear indication of class, quantity and location of all dangerous goods and hazardous materials associated with the development. Should the preliminary risk screening indicate that the development is	Refer to Section 3.2.3, 4.2.8 & 6.10 and Appendix 22.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

"potentially hazardous", a Preliminary Hazard Analysis (PHA) must be prepared in accordance with Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis (DoP, 2011) and Multi-Level Risk Assessment (DoP, 2011).	
Bushfire – including: ▪ details of the storage of any flammable materials; ▪ an assessment against the requirements of Planning for Bushfire Protection 2006; ▪ a description of measures to ensure the proposal will not increase the bushfire risk to adjoining lands.	Refer to Section 6.15 and Appendix 28.
Waste – including: ▪ details of the quantities and classification of all waste streams to be generated on site during the development; ▪ details of waste storage, handling and disposal during the development; ▪ details of the measures that would be implemented to ensure that the development is consistent with the aims, objectives and guidance in the NSW Waste Avoidance and Resource Recovery Strategy 2014-2021.	Refer to Section 6.7 and Appendix 18.
Air Quality – including: ▪ an assessment of the air quality impacts (including dust and odour) during the development, in accordance with the relevant Environment Protection Authority guidelines; ▪ details of proposed mitigation, management and monitoring measures.	Refer to Section 6.9 and Appendix 21.
Heritage – including: an assessment of Aboriginal and non-Aboriginal cultural heritage items and values of the site and surrounding area in accordance with the relevant Office of Environment and Heritage guidelines.	Refer to Section 6.13 & 6.14 and Appendix 25-27.
Contributions – including: consideration of the Lane Cove Section 94 Contribution Plan 1996, revised 9 October 2013, and/or details of any Planning Agreement.	Refer to Section 6.12
Consultation	
During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups and affected landowners. In particular you must consult with: ▪ Lane Cove Council ▪ Environment Protection Authority ▪ Ausgrid ▪ Roads and Maritime Services ▪ Transport for NSW ▪ Department of Industry – Crown Lands and Water ▪ Department of Primary Industries – Fisheries ▪ Office of Environment and Heritage ▪ Fire and Rescue NSW ▪ Rural Fire Service ▪ Sydney Water ▪ City of Ryde Council ▪ surrounding local residents and stakeholders	Refer to Section 5.2.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

any other public transport, utilities or community service providers. The EIS must describe the consultation process and the issues raised and identify where the design of the development has been amended in response to these issues. Where amendments have not been made to address an issue, a short explanation should be provided.	
Further Consultation After Two (2) Years	
If you do not lodge an application under Section 4.12(8) of the <i>Environmental Planning and Assessment Act 1979</i> within two (2) years of the issue date of these SEARs, you must consult with the Secretary in relation to any further requirements for lodgement.	Noted.

PART B SITE ANALYSIS

2.1 SITE LOCATION & EXISTING SITE CHARACTERISTICS

The identified land portion that is the subject of this SSDA is legally defined as 1 Sirius Road, Lane Cove West (Lot 1 DP 1151370).

The Subject Site comprises a total site area of approximately 3.59 ha and is subject to applicable provisions outlined within LCLEP2009. Access to the Site is currently obtained via Sirius Road along the eastern perimeter of the Subject Site, which contains proposed entry / exit points along the street interface as well as being accompanied by turning loops within the identified land portion that would control traffic volumes accordingly.

The Site's historical context is best described through its current undeveloped nature, typically interspersed with varied vegetative characteristics. Land surrounding the Site comprises the following land use zoning, including:

- IN2 Light Industrial;
- E2 Environmental Conservation;
- RE1 Public Recreation; and,
- SP2 Infrastructure.

The nearest sensitive land use is within the E2 Environmental Conservation zone (Lane Cove National Park), located to the west of the Subject Site containing bushfire prone land, Riparian Lands and Watercourses and Coastal Wetlands and Proximity Area for Coastal Wetlands, approximately 150 m away. Accordingly, mitigation and protection measures would be accurately and appropriately implemented throughout the Proposed Development of the Subject Site to preserve the natural and ecological amenity. The closest densely populated residential suburbs are approximately 450 m west (East Ryde) and 600 m east (Lane Cove West) of the Subject Site.

It should be further noted that an electricity transmission tower is located in close proximity to the Site, with overhead power lines potentially being over the western boundary of the Subject Site.

The identified land portion is subject to the provisions outlined in the LCLEP2009, as mentioned above. LCLEP2009 is the primary EPI and categorises the Subject Site within the IN2 Light Industrial zone as displayed in **Figure 1** below. The Subject Site and surrounding context are depicted and illustrated in **Figures 2 & 3** below.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

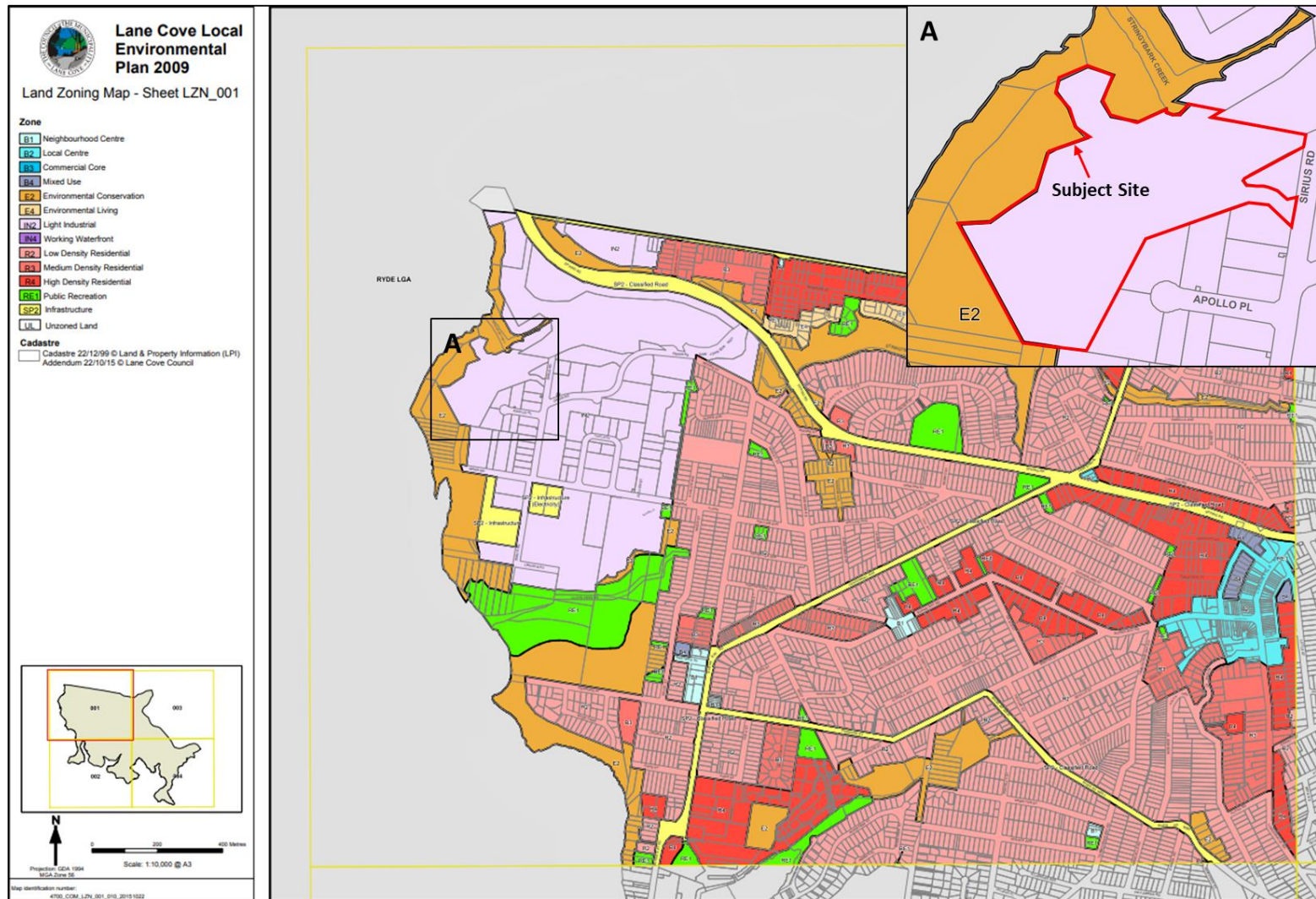


Figure 1 Land Zoning Applicable to the Subject Site under *Lane Cove Local Environmental Plan 2009* (Source: NSW Legislation, 2018)

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)



Figure 2 Existing Site Context and Surrounding Area (Source: NearMaps, 2018)

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

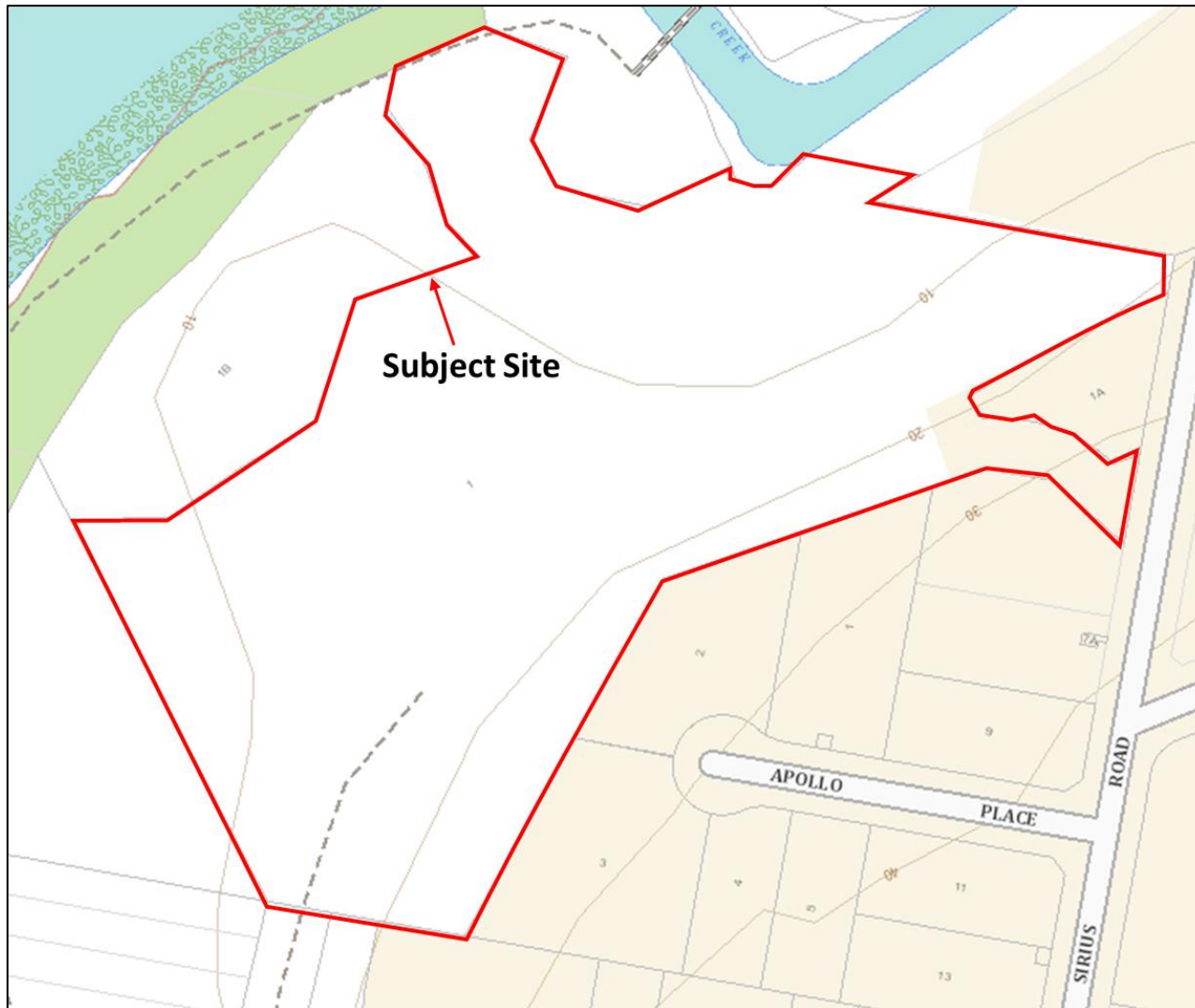


Figure 3 Cadastral Image of Subject Site and Surrounding Context (Source: SIX Maps, 2018)

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

2.2 LAND OWNERSHIP

The land which is the subject of this SSDA is under ownership of Rove Estate Pty Ltd (ACN 159 553 652).

2.3 SITE CONTEXT

Key contextual attributes of the Subject Site are noted as follows:

- The Subject Site is located approximately 9.1 km northwest of the Sydney CBD and 12.4 km east of Parramatta;
- Sirius Road adjoins the Subject Site to the east, linking to the wider Lane Cove West Business Park further east and south;
- Directly to the west of the Subject Site is interspersed vegetation classed as bushfire prone land, whilst further west includes tributaries such as the Lane Cove River and Stringybark Creek, which meander to the north of the Subject Site;
- The Subject Site is wholly located within the Lane Cove LGA;
- LCLEP2009 remains the primary Environmental Planning Instrument (EPI) applicable to the Subject Site;
- Given the strategic location of the Subject Site being positioned within the Lane Cove West Business Park, which is designated for such industrial-related uses, the Proposed Development represents a logical outcome that would provide employment-generating opportunities close to where people live and nearby to available transport infrastructure routes; and,
- The surrounding regional road network is located in close proximity to the Subject Site, which includes the M2 Motorway and Epping Road, providing enhanced connectivity to the Subject Site and surrounding area.

2.4 STRATEGIC CONTEXT

As mentioned above, the Site is included within the Land Application for the Lane Cove LGA (refer to **Figure 4**) and is zoned under the LCLEP2009 (refer to **Figure 1** above). The proposed Data Centre responds accordingly as it seeks to provide an advanced facility to further support the growth and development of IT infrastructure across the wider Metropolitan Sydney area. Additionally, the Proposed Development seeks to provide employment-generating development opportunities that would ultimately contribute to the overall growth and development of the Metropolitan Sydney area.

In addition to the above, the Site is identified within the North District Plan. The Productivity Priorities identified under the Plan, relevant to the Proposed Development, include:

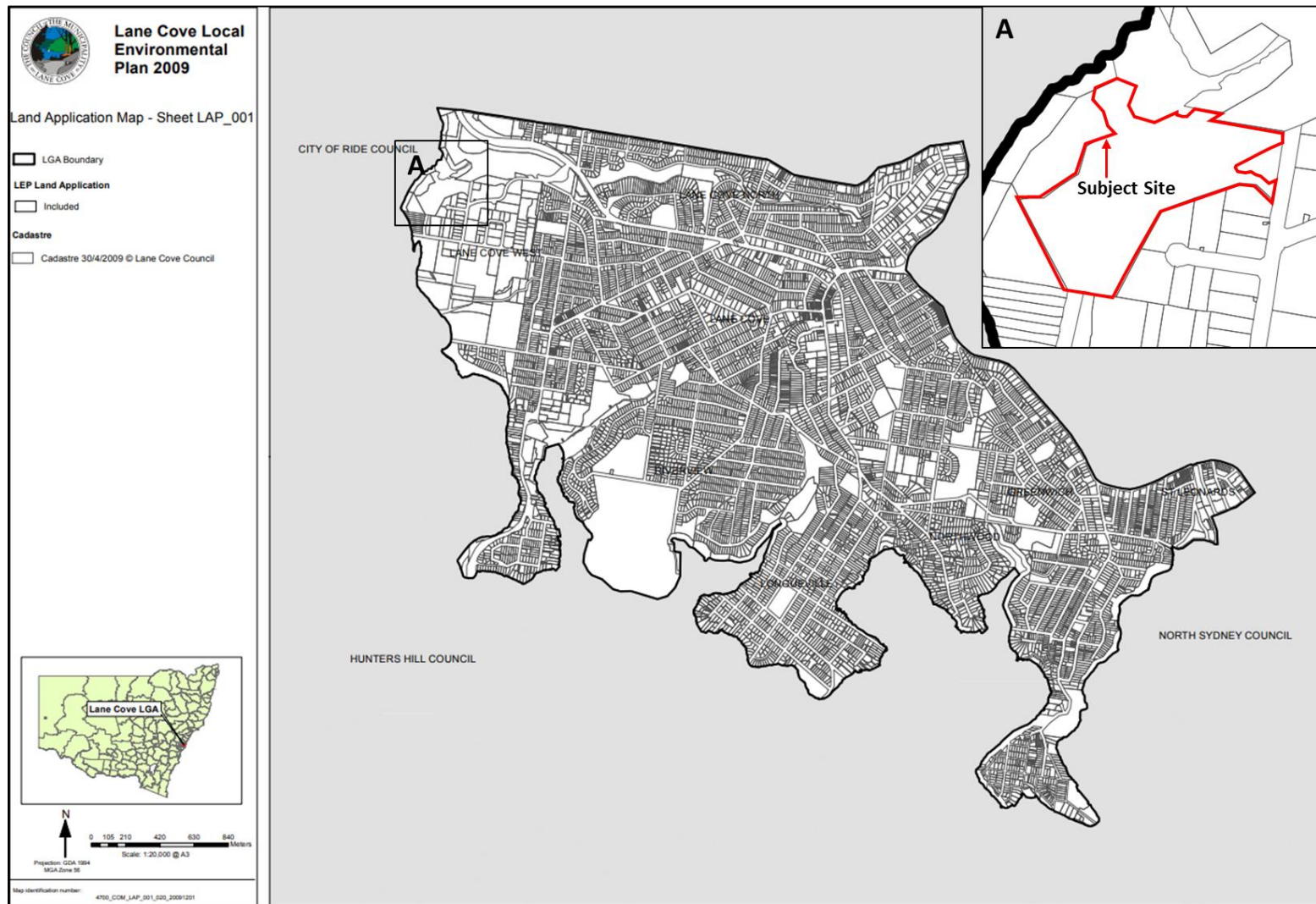
- Planning Priority N1 – Planning for a city supported by infrastructure;
- Planning Priority N10 – Growing investment, business opportunities and jobs in strategic centres;
- Planning Priority N11 – Retaining and managing industrial and urban services land;
- Planning Priority N13 – Supporting growth of targeted industry sectors; and,
- Planning Priority N16 – Protecting and enhancing bushland and biodiversity.

The Proposed Development is considered consistent with and responsive to the above priorities, making a valuable contribution to the Eastern Harbour City, which is earmarked for development and higher and better uses with regard to the Site.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)



Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

2.5 DEVELOPMENT AND PLANNING HISTORY

The Subject Site comprises an undeveloped land portion in its existing state.

2.6 SITE SUITABILITY

The Proposed Development provides for a Data Centre in a location that is suitably located away from sensitive environments. The Site has an obvious advantage, as it represents an undeveloped land portion, providing an unconstrained platform for development. The topography is highly suitable for the intended use. The Site has been identified as bushfire prone land, for which mitigation and management measures would be implemented accordingly, based on the recommendations provided in the Bushfire Assessment report summarised in **Part F** of this EIS. Additionally, as mentioned in **Section 2.1**, to the Site's west lies Riparian Lands and Watercourses and Coastal Wetlands and Proximity Area for Coastal Wetlands, for which the Proposed Development has taken into account accordingly.

Notwithstanding, the Subject Site is deemed highly-suited to accommodate the intended use, for the purposed of a Data Centre, due to the following factors:

- LCLEP2009 allows for the Proposed Development;
- Access to the regional road network;
- Compatibility with surrounding development and the local context;
- The Site represents orderly and sequential development having regard to the proximity to surrounding developments within the Lane Cove West Business Park;
- The Site can be serviced immediately and at no cost to the Government;
- Minimal impact on the environment; and,
- Implementation of suitable mitigation measures where required.

Furthermore, the suitability of the Site is further reinforced in **Part D** of this EIS with regard to the Proposed Developments overall consistency with applicable Regional and Local Strategies; and, in **Part F** of this EIS, via a comprehensive Environmental Assessment, which includes an analysis of the potential impacts as a result of the Proposed Development. Accordingly, the Environmental Assessment prescribes recommendations and mitigation measures (where necessary) to account for any identified potential impacts as a result of the Proposed Development. As mentioned above, the suitability of the Subject Site with regard to the Proposed Development is partially attributed to the minimal impact on the environment it would impose.

PART C PROPOSED DEVELOPMENT

3.1 OBJECTIVES OF THE PROPOSAL

The aim of the proposed development is to provide a Data Centre that is facilitated by applicable objectives, including:

- Design the Site to achieve a viable economic return;
- Ensure minimal environmental and amenity impact;
- Ensure ongoing compliance with all operational legislative requirements;
- Provide for an employment-generating land use; and,
- Ensure development is compatible with surrounding development and the regional and local context.

The Site and proposed design are considered to meet the objectives of the project, as it allows for development on a land portion that has is currently undeveloped in its state, as well as being zoned for such industrial-related purposes.

3.2 DESCRIPTION OF THE PROPOSAL

3.2.1 Data Centre

Consent is sought to develop the Site for the purpose of a Data Centre. Operational use of the Data Centre would be undertaken on a 24-hour, 7-day basis, consistent with surrounding operations. Furthermore, the design for the Site, illustrates the emphasis of the urban design to produce a greater and more pleasant working environment in line with the vision outlined in the *Greater Sydney Region Plan – A Metropolis of Three Cities* and the *North District Plan*.

The Proposed Development relates to earthworks and site infrastructure works across the entire site, in which the building pads and services to the Site could be appropriately constructed and managed. With regard to the built-form, bulk earthworks and infrastructure works, the Proposed Development sets out a series of constructive stages, that develop the 3.95 ha Site into an aesthetically pleasing, state-of-the-art facility as set out below in **Table 3** and **Figure 5** below. The particulars are outlined as follows:

Table 3: Proposed State Significant Development Particulars	
Project Element	Development Particular
Site Area	- 39,453 m ²
Data Centre Building	Basement: 1,412 m ² ; Ground Floor: 14,612 m ² ; Level 1: 13,123 m ² ; Level 2: 5,133 m ² . Total GFA: 34,282 m ²
Car Parking	- Cars Parking Spaces Provided: 76 car parking spaces. - Provisional Car Parking Spaces Provided: 21 car parking spaces.
Building Height	- 24 m
Floor Space Ratio	- 0.87:1
Primary Land Use	Light Industrial Activities: - The Proposed Development would utilise the IN2 Light Industrial zoned land for a proposed Data Centre, which provides secure, reliable and scalable solutions for cloud, content and large enterprise customers to house their high and rapidly growing volumes of data and information.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Bulk Earthworks	Earthworks are proposed on the Site as follows: - Bulk earthworks are proposed to be carried out to establish building pads through cut and fill. - These works are to be carried out in stages upon issue of Development Consent.
Site Access	- Access to the Site would be obtained via Sirius Road via a proposed entry / exit point accompanied by turning loops within the Subject Site.
Infrastructure and Services	- Services to the Site are able to be successfully augmented where necessary, including potable water, electricity, gas, waste water and telecommunications.
Subdivision	- No subdivision is proposed.
Operational & Construction Jobs	- Construction jobs are anticipated to be in the order of approximately 320; and, - Operational jobs are expected to be in the order of 80-100.
Hours of Operation	- 24/7 operational basis.

The Proposed Development Plans are illustrated further in **Figures 5-7**.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

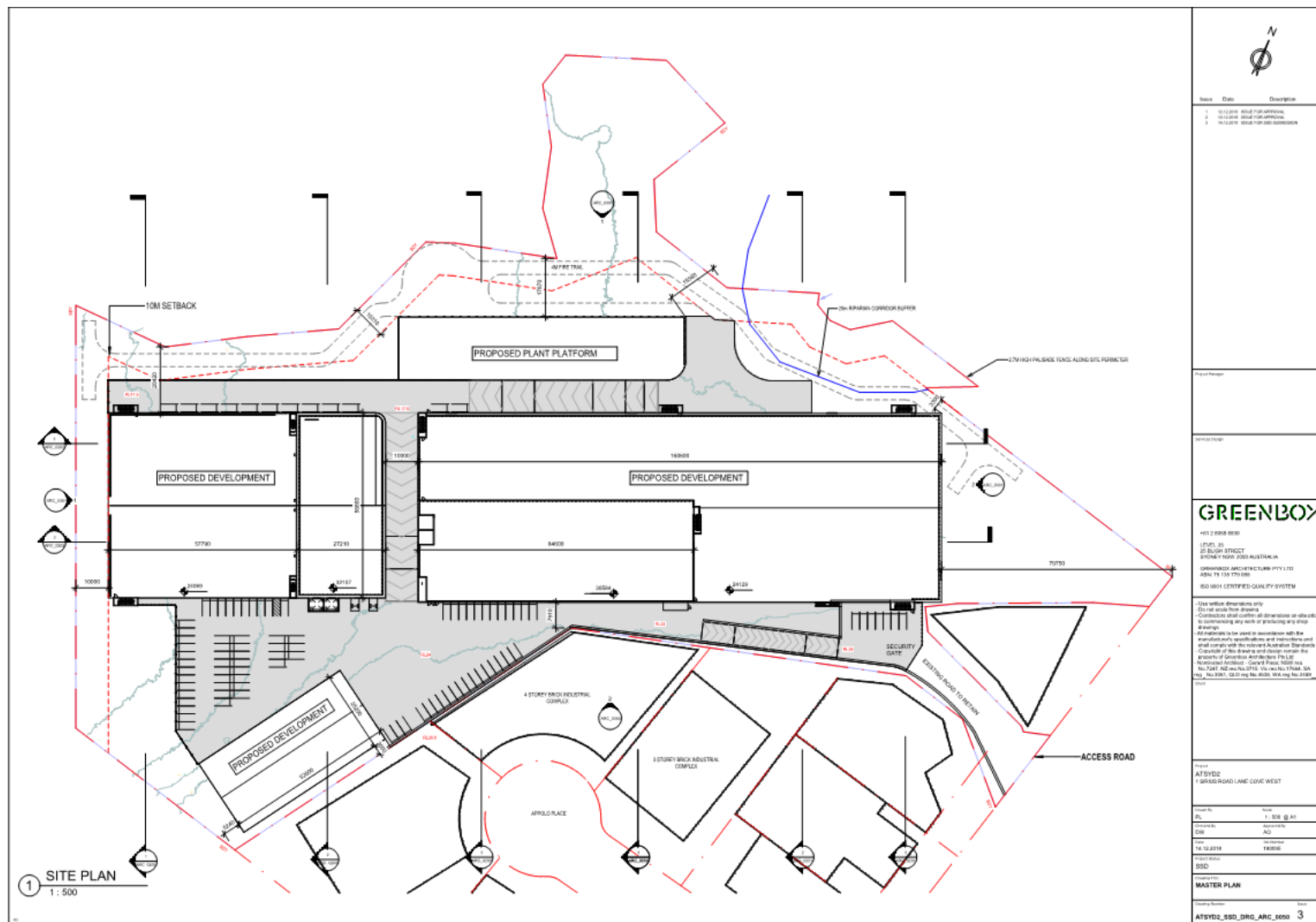


Figure 5 Proposed Development Site Plan (Source: Greenbox Architecture, 2018)

Environmental Impact Statement
Proposed Data Centre
1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

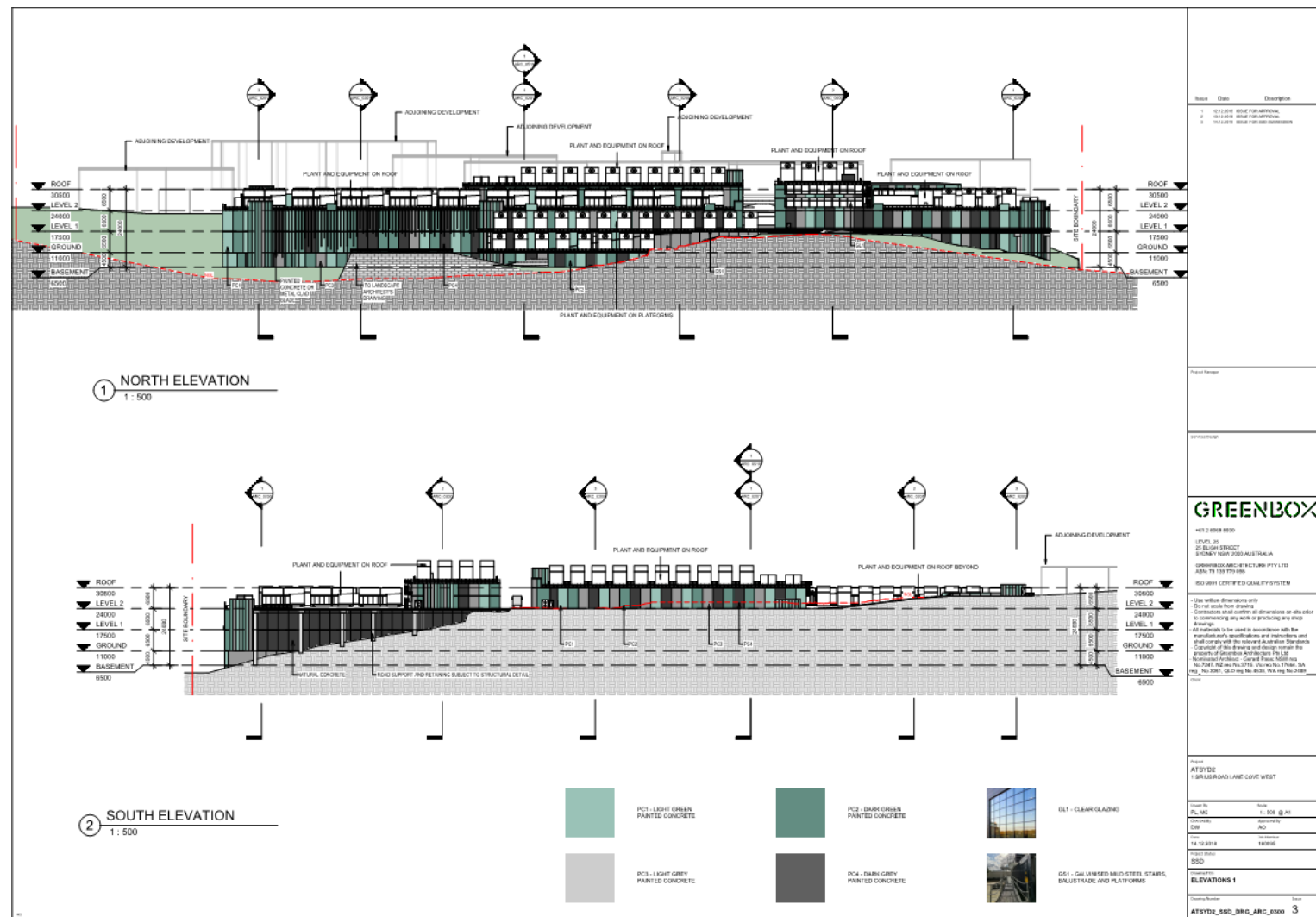


Figure 6 Proposed Northern and Southern Elevation Plans (Source: Greenbox Architecture, 2018)

Environmental Impact Statement
Proposed Data Centre
1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

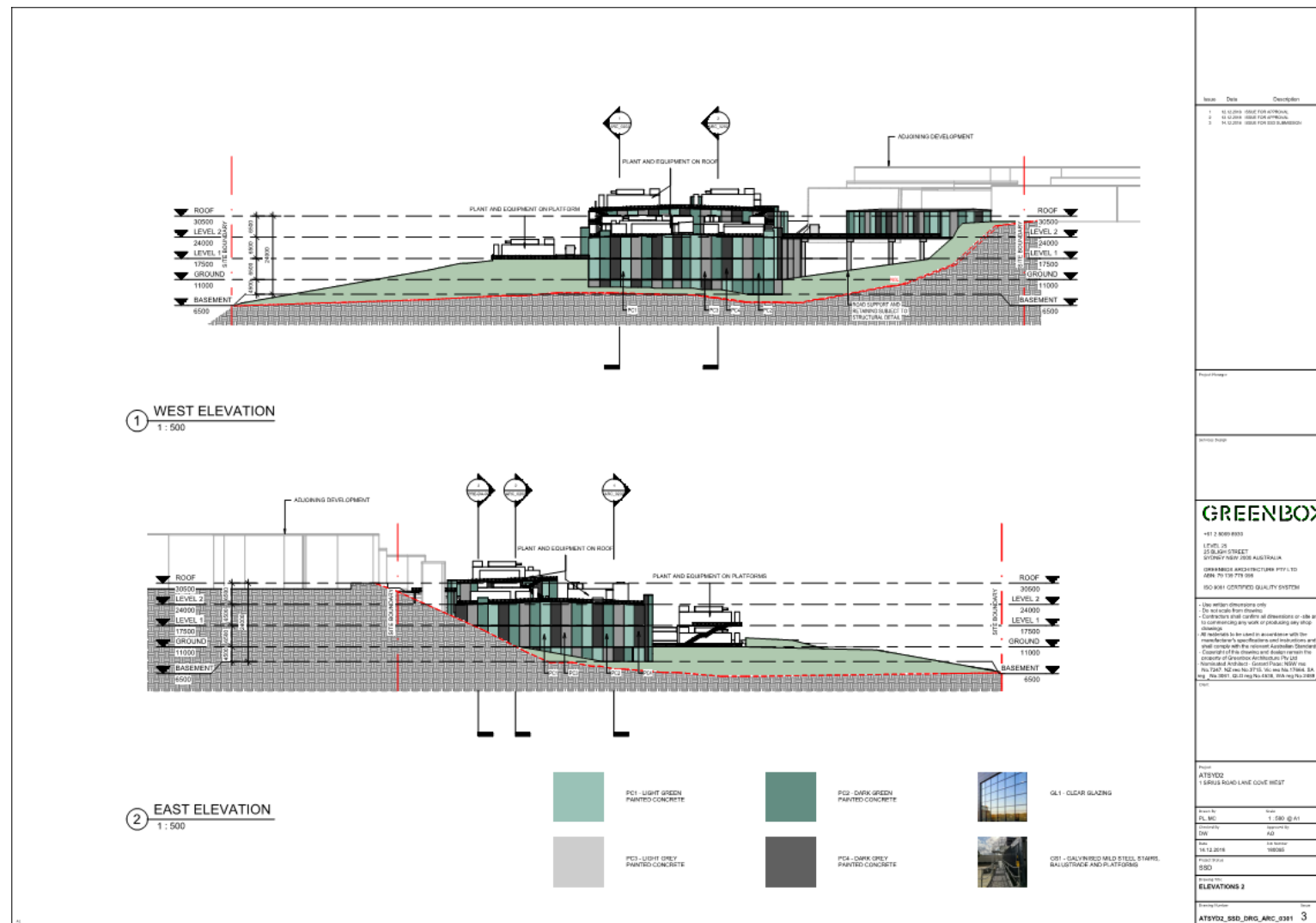


Figure 7 Proposed Eastern and Western Elevation Plans (Source: Greenbox Architecture, 2018)

3.2.2 Site Preparation

Earthworks are proposed across the Site to facilitate development of the developable site area (refer to **Appendix 11**). Cut and fill works are required on-site to facilitate the development. The proposed building Finished Floor Level (FFL), pavement grading and finished levels aim to provide a relatively balanced cut and fill for the Proposed Development, minimising the need to import material and negate the enhanced requirement for retaining walls. A bulk earthwork cut and fill plan has been prepared, that demonstrates the depths of cut and fill across the Site. Detailed analysis is provided of the cut and fill is shown in **Figure 8** below and **Table 4** below. The total quantum of cut and fill proposed, is as follows:

Table 4: Cut/Fill Balance	
Topsoil Volume	
Quantities are to stripped surface (100 mm top soil)	
Earthworks Volume	
Cut	132,200 m ³
Fill	38,520 m ³
Balance	-93,680 m ³

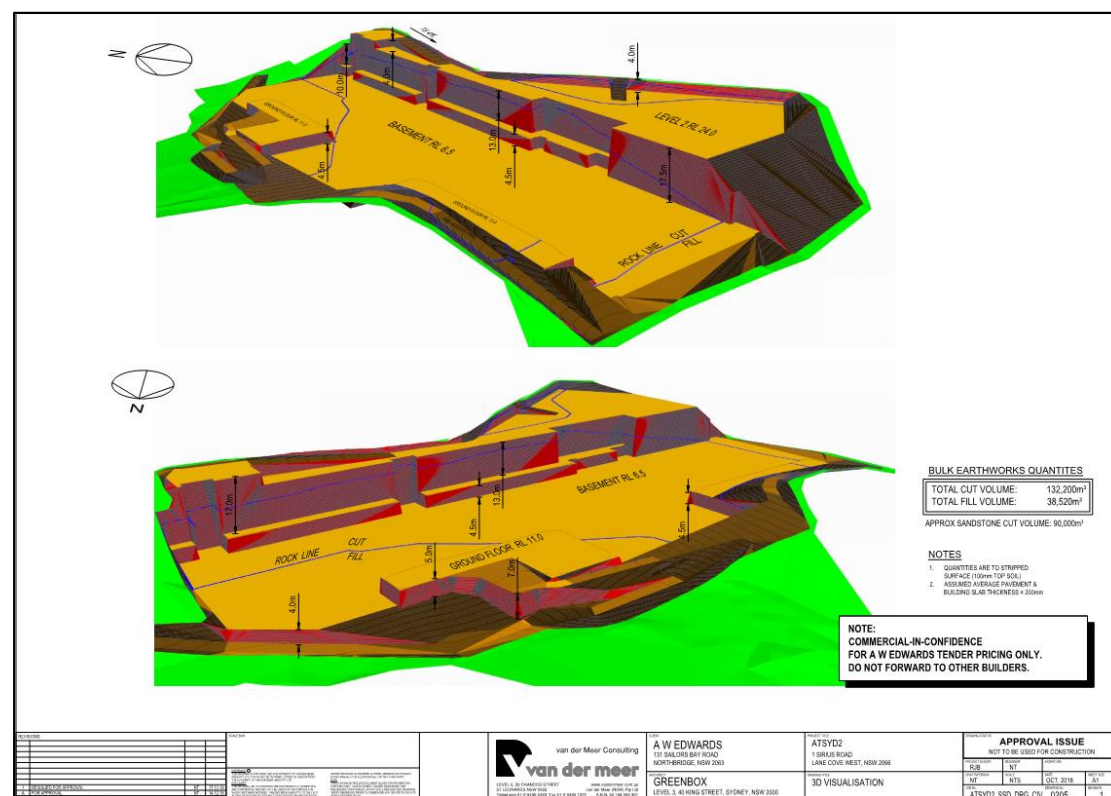


Figure 8 Proposed Bulk Earthworks Plan (Source: Van Der Meer, 2018)

3.2.3 Dangerous Goods

No Dangerous Goods are proposed to be stored on-site which trigger the thresholds of *State Environmental Planning Policy No 33 – Hazardous and Offensive Development* (SEPP 33). Should the Proposed Development ever require the need to store Dangerous Goods on-site, a SEPP 33 Preliminary Hazard Analysis would be undertaken by a suitably qualified specialist, with any recommendations on further approvals required (if any), following all statutory requirements.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

3.2.4 Project Documentation

Documents provided in support of the proposal are outlined in **Table 5**.

Table 5: Document Schedule and Consultant Team		
Appendix No.	Description	Author
Appendix 1	Secretary's Environmental Assessment Requirements	NSW Department of Planning & Environment
Appendix 2	Pre-DA (Pre-SEARs) Meeting Minutes	Lane Cove Council
Appendix 3	Quantity Surveyors Report	Linesight
Appendix 4	Survey Plan	S.P. Site Setout Pty Ltd
Appendix 5	Architectural Plans	Greenbox
Appendix 6	Landscape Plans	Geoscapes
Appendix 7	Landscape Design Report	Geoscapes
Appendix 8	Landscape and Visual Impact Assessment	Geoscapes
Appendix 9	Water Quality Report	Van Der Meer
Appendix 10	Flood Assessment Report	GRC Hydro
Appendix 11	Civil Engineering Drawings and Plans	Van Der Meer
Appendix 12	Geotechnical Report	Douglas Partners
Appendix 13	Phase 1 Due Diligence Assessment	Senversa
Appendix 14	Phase 2 Acquisition Environmental Due Diligence Assessment	Senversa
Appendix 15	Sampling and Analytical Quality Plan	Senversa
Appendix 16	Remedial Action Plan	Senversa
Appendix 17	Traffic Impact Assessment	ARUP
Appendix 18	Waste Management Plan	SLR Consulting
Appendix 19	Noise Impact Assessment	ARUP
Appendix 20	Construction Noise Management Plan	AW Edwards
Appendix 21	Air Quality Impact Assessment	ARUP
Appendix 22	SEPP 33 Report	SLR Consulting
Appendix 23	Biodiversity Development Assessment Report	Ecoplanning
Appendix 24	Tree Impact Assessment Report	Travers Bushfire & Ecology
Appendix 25	Archaeological Report	Biosis
Appendix 26	Aboriginal Cultural Heritage Assessment Report	Biosis
Appendix 27	Historic Heritage Impact Statment	Biosis
Appendix 28	Bushfire Report	Travers Bushfire & Ecology
Appendix 29	Site Infrastructure Report	ARUP
Appendix 30	Energy Efficiency Report	ARUP
Appendix 31	BCA Report	Mckenzie Consulting
Appendix 32	Fire Engineering Report	Scientific Fire Services
Appendix 33	Access Report	Mckenzie Consulting
Appendix 34	Community Consultation Report	Willowtree Planning
Appendix 35	Clause 4.6 Variation – Height	Willowtree Planning
Appendix 36	Lane Cove Development Control Plan 2009 Compliance Table	Willowtree Planning
Appendix 37	Options Analysis	Greenbox
Appendix 38	Vegetation Management Plan	Travers Bushfire & Ecology

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

3.3 PROJECT NEED

The way data and records are stored is considered to be continually evolving. The storage of cloud and electronic data is now a fundamental piece of infrastructure and services for both business and consumer transactions. Data Centres are considered to be critical infrastructure, that not only provide employment-generating opportunities to the Information, Communication and Technology (ICT) sector, but also support the operation of business to business and business to consumer services.

The Proposed Development would assist in providing new employment opportunities and promoting industry diversification (i.e. ICT sector). The SSDA would not alter the quantity or configuration of land currently zoned for light industrial uses.

The Proposed Development, for the purposes of a Data Centre is considered consistent with the strategic direction of both the North District Plan (Greater Sydney Commission, 2018) and Lane Cove Council's – *Lane Cove Community Strategic Plan 2035* (2018) and Delivery Program and Operational Plan 2018-2021 (2018). Additionally, the Proposed Development will further contribute to the growth of knowledge and professional service jobs within the North District; hence, contributing to the North District's economic growth.

Further, the Proposed Development could support the existing Lane Cove West Business Park by maintaining industrial land stocks and employment objectives, whilst promoting industry diversification (and generate new employment sources); and, can generate more employment throughout the planning, construction and maintenance stages.

Additionally, the Proposed Development at the Subject Site would generate a range of community need drivers, in particular the following:

- Reduced travel distances, leading to savings in time and fuel for local working residents, due to a much better access to the employment hub (i.e. Lane Cove West Business Park) at the local level. It is noted, that a reduction in travel times and distances generates related benefits, including reduced vehicle wear and tear, reduced fuel costs, reduced pollution, reduced traffic congestion, reduced risks of car accidents, and more time which can be spent either working, socializing or undertaking other activities;
- New employment opportunities from other industries, such as ICT businesses to operate in Lane Cove; and,
- Providing jobs near people's homes and consequent economic multiplier impacts, which will boost the local economy.

3.4 CONSIDERATION OF ALTERNATIVES

The intention of the Proposed Development is to construct and operate a Data Centre, which provides secure, reliable and scalable solutions for cloud, content and large enterprise customers to house their high and rapidly growing volumes of data and information. The Proposed Development seeks to ensure it:

- Is compatible with surrounding development and the local context;
- Would provide increased operational efficiencies for storage and distribution of data;
- Would result in minimal impact on the environment; and
- Would allow for the implementation of suitable mitigation measures, where required.

Overall, the scale of development proposed is considered suitable, and the built-form changes would enhance and renew the Site completely, given its undeveloped state. Furthermore, this would be achieved by the resultant built-form that would reinforce the working character of the land.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

The options considered, and subsequently dismissed, in arriving to the current proposal included:

(a) 'Do Nothing' Scenario

This option was dismissed as the objectives of the project would not be met. If the Proposed Development was not to proceed, the Site would continue to remain vacant. The topography of the Site is such that it is not suitable for a conventional warehousing and distribution operation, whereas the proposed Data Centre can utilise the gradual slope of the land portion accordingly, resulting in minimal environmental impact. Additionally, if the Proposed Development was not to proceed, the Subject Site would remain vacant and not fulfill its employment generating potential.

(b) Development on an Alternative Site

Consideration was given to carrying out development on alternate sites; however, these were dismissed as the Site resulted in the most beneficial outcomes for the Proposed Development as:

- The Site is suitably located with respect to sensitive land activities including residential development;
- All potential environmental impacts concerning the Proposed Development are able to be suitably mitigated, in particular air and noise;
- The proximity to the regional road network provides accessibility and linkages to the broader metropolitan area and regional areas of NSW;
- The Proposed Development demonstrates the capability for continued employment-generating opportunities, during both the construction and operational phases of development;
- The Proposed Development would not adversely affect any area of heritage or archaeological significance; and,
- The Proposed Development could be developed with the appropriate visual amenity achieved given its surrounding context.

The Proposed Development is justified on the basis it is compatible with the locality in which it is proposed, resulting in economic benefits, while managing and mitigating environmental impacts.

3.5 PROPOSED DATA CENTRE

From an operational perspective (as an owner / operator / landlord), the business (Data Centre) provides a similar service to its tenants as any commercial landlord would. Notwithstanding, the point of difference is, that the tenants of the facilities are focused on the housing and delivery of cloud-based internet to service the global market.

The Data Centre proposed, commits to maintaining high levels of reliability through the provision of the Site's infrastructure, ultimately supporting the tenant's environment. This is accomplished through industry leading redundancy of mechanical cooling and power systems (including emergency backup power generators) serving the Data Centre along with the necessary and vital telecommunications links required for the Site to carry out an efficient and effective operation (refer to **Figure 9** below).

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)



Figure 9 Data Centre Operations (Source: Greenbox, 2018)

In addition to deploying reliable infrastructure in secure facilities the business invests in high performing 24x7 operational teams, whose sole focus is to ensure that the Site is never at risk.

From a locational perspective, 1 Sirius Road, Lane Cove West was chosen as it would be able to accommodate the Proposed Development accordingly. The Site's locality is considered satisfactory from a geotechnical standpoint, pursuant to the relevant recommendations adopted and appropriate cut and fill measures taking place. Additionally, the Site's locality is reinforced by its close proximity to nearby regional road networks such as Epping Road and the M2 Motorway as well as available bus networks in close proximity to the Site, which is considered critical for overall operation. An operational flow diagram is provided below in **Figure 10**.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

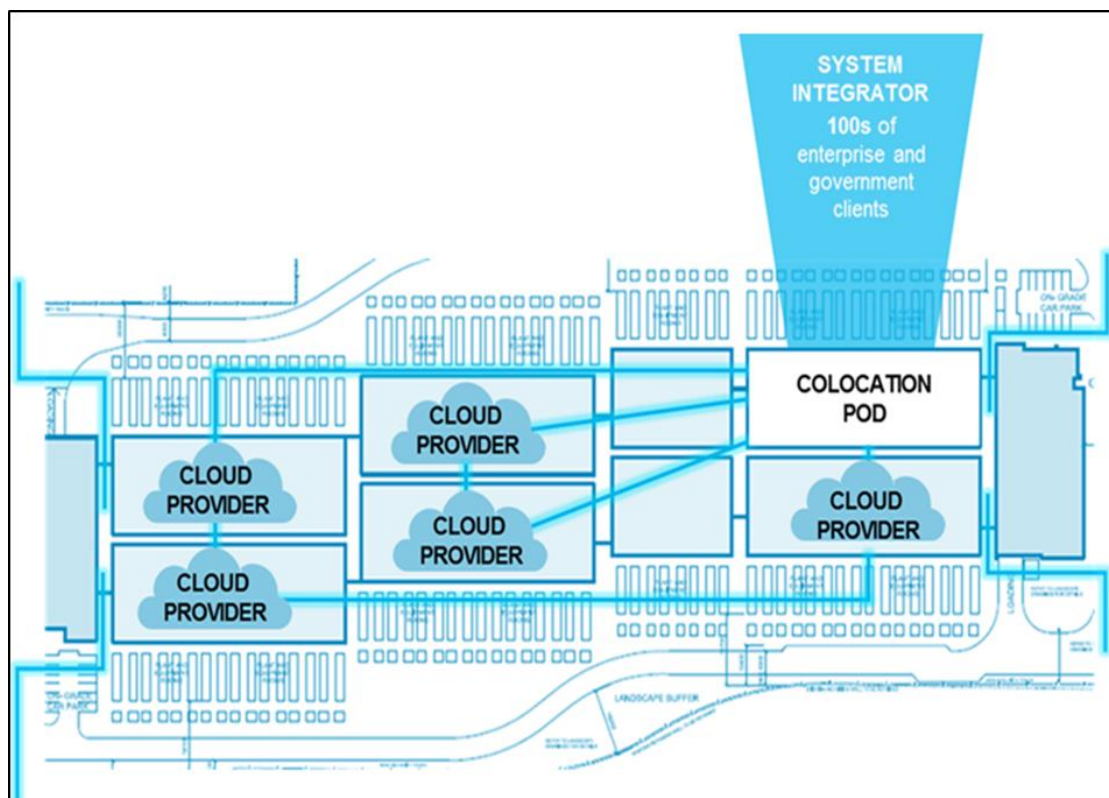


Figure 10 Proposed Development Operational Flow Chart (Source: Greenbox, 2018)

It is noted, that if the Proposed Development did not proceed, the Site would not provide employment opportunities for an employment sector, which is currently in decline. Additionally, it would not provide local employment opportunities, including achieving the 30-minute city (as outlined in the Regional and District Plans) or generate construction jobs.

Upon the Subject Site exhibiting its maximum capacity, the Proposed Development would generate approximately 80-100 full-time operational jobs, including data centre management staff, data centre engineers, maintenance technicians and security personnel. The estimated figure (80-100 operational jobs) also includes customer staff, that are anticipated to be permanently based on-site. Further, it is noted, that the positioned generated by the Proposed Development are all considered to be highly skilled, for which they accrue 'above-average wages'.

Additionally, when the Subject Site is at its maximum capacity, the Site would be staffed 24 hours, 7 days per week, 365 days a year. It is noted, that the peak amount of staff on-site at any given time, during business hours (7am – 7pm), would be approximately 50-70 employees. During the off-peak hours (7pm – 7am & weekends), it is anticipated, that approximately 10-20 personnel would remain on-site.

In light of the above information, which promotes a high-tech industry development, for the purposes of a Data Centre at Lane Cove West Business Park, this would allow for the delivery of more employment space and promotes the supply and competitiveness of the existing employment land floorspace within the precinct.

PART D LEGISLATIVE AND POLICY FRAMEWORK

Controls and Policies

The following current and draft Commonwealth, State, Regional and Local planning controls and policies have been considered in the preparation of this State Significant Development Application:

Commonwealth Planning Context

- *Environment Protection and Biodiversity Conservation Act 1999*

State Planning Context

- *Environmental Planning and Assessment Act 1979*
- *Environmental Planning and Assessment Regulation 2000*
- *Protection of the Environment Operations Act 1979*
- *Biodiversity Conservation Act 2016*
- *State Environmental Planning Policy (State and Regional Development) 2011*
- *State Environmental Planning Policy (Infrastructure) 2007*
- *State Environmental Planning Policy No 19 – Bushland in Urban Areas*
- *State Environmental Planning Policy No 33 – Hazardous and Offensive Development*
- *State Environmental Planning Policy No 55 – Remediation of Land*
- *State Environmental Planning Policy (Coastal Management) 2018*

Regional Planning Context

- *A Metropolis of Three Cities – Greater Sydney Region Plan*
- *North District Plan*
- *Future Transport Strategy 2056*

Local Planning Context

- *Lane Cove Local Environmental Plan 2009*
- *Lane Cove Development Control Plan 2009*
- *Lane Cove Development Contribution Plan*

This planning framework is considered in detail in the following sections:

4.1 COMMONWEALTH PLANNING CONTEXT

4.1.1 Environment Protection and Biodiversity Conservation Act 1999

Under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), any action (which includes a development, project or activity) that is considered likely to have a significant impact on Matters of National Environmental Significance (MNES) (including nationally threatened ecological communities and species and listed migratory species) must be referred to the Commonwealth Minister for the Environment. The purpose of the referral is to allow a decision to be made about whether an action requires approval on a Commonwealth level. If an action is considered likely to have significant impact on MNES, it is declared a “controlled action” and formal Commonwealth approval is required.

Based on preliminary investigations carried out, the proposal does not warrant referral to the Commonwealth Minister for Environment.

4.2 STATE PLANNING CONTEXT

4.2.1 Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act) is the overarching governing statute for all development in NSW and pursuant to Section 4.36(2) provides that:

A State environmental planning policy may declare any development, or any class or description of development, to be State significant development.

The proposed development has been identified as State Significant Development under the SRD SEPP as outlined below in **Section 4.2.5**.

4.2.2 Environmental Planning and Assessment Regulation 2000

In accordance with the EP&A Regulation, the Proposed Development is not classified as Designated Development.

Section 4(1) – Designated Development

Section 4(1) of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation) states that development described in Part 1 of Schedule 3 is declared to be Designated Development for the purposes of the Act.

Therefore, the Proposed Development being for a proposed Data Centre, does not trigger the Designated Development thresholds under Part 1 of Schedule 3 of the EP&A Regulation.

4.2.3 Biodiversity Conservation Act 2016

The *Biodiversity Conservation Act 2016* (BC Act) is the key piece of legislation in NSW relating to the protection and management of biodiversity and threatened species. The purpose of the BC Act is to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development. The BC Act is supported by a number of regulations, including the Biodiversity Conservation Regulation 2017 (BC Regulation).

The BC Act requires consideration of whether a development or an activity is likely to significantly affect threatened species. Preliminary studies have been undertaken to assess the overall ecological context of the Subject Site; however, further studies would be undertaken and addressed within the EIS regarding potential impacts to flora and fauna species.

Prescribed biodiversity impacts are defined under Clause 6.1 of the BC Reg and include impacts on biodiversity values in addition to, or instead of, impacts from clearing vegetation and / or loss of habitat. Prescribed biodiversity impacts are outlined within **Table 6** below, including their relevance to the Proposed Development, for the purposes of a Data Centre.

Table 6: Prescribed Biodiversity Impacts		
Prescribed Biodiversity Impacts	Presence within the Subject Site	Additional Comments
(a) the impacts of development on the following habitat of threatened species or ecological communities: i. karst, caves, crevices, cliffs	The subject land contains areas of cliffs, crevices, rocks and other geological areas of significance.	The subject land contains exposed Hawkesbury Sandstone outcropping, boulders and minor cliff development (Figure 5.1 and Figure 5.2 of the Report) in the south east and north

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

and other geological features of significance, ii. rocks, iii. human made structures, iv. non-native vegetation,		east of the subject land. These features do not support threatened species or ecological communities, hence do not constitute a prescribed biodiversity impact.
(b) the impacts of development on the connectivity of different areas of habitat of threatened species that facilitates the movement of those species across their range,	The subject land has not been identified as providing connectivity between areas of habitat for threatened species that facilitates the movement of that threatened species across its range.	The native vegetation in the subject land provides some connectivity between Lane Cove National Park and land to the south. However, the areas of habitat in the subject land are confined to the south western and north eastern portions of the subject land, hence occur at the edge of a larger expanse of bushland. The patches of vegetation in the subject land are poorly connected and are separated by a large expanse of cleared land.
(c) the impacts of development on movement of threatened species that maintains their lifecycle,	The subject land has not been identified as providing movement of threatened species that maintains their lifecycle.	
(d) the impacts of development on water quality, water bodies and hydrological processes that sustain threatened species and threatened ecological communities (including from subsidence or upsidence resulting from underground mining or other development),	Potential Impacts.	Stringybark Creek is situated to the north of the subject land and flows in a north easterly direction, where it subsequently joins with the Lane Cove River. Stringybark Creek and the Lane Cove River sustain threatened species and threatened ecological communities. Consequently, impacts to water quality and hydrological process of Stringybark Creek and Lane Cove River could constitute a prescribed impact. However, these impacts would be mitigated through the implementation of a Construction Environmental Plan (CEMP) to avoid potential indirect offsite impacts during construction.
(e) the impacts of wind turbine strikes on protected animals,	N/A	-
(f) the impacts of vehicle strikes on threatened species of animals or on animals that are part of a	N/A	-

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

threatened community.	ecological		
--------------------------	------------	--	--

Accordingly, no such prescribed biodiversity impacts are anticipated from the Proposed Development.

4.2.4 Protection of the Environment Operations Act 1979

Schedule 1 of the *Protection of the Environment Operations Act 1979* (POEO Act) contains a core list of activities that require a licence before they may be undertaken or carried out. The definition of an 'activity' for the purposes of the POEO Act is:

"an industrial, agricultural or commercial activity or an activity of any other nature whatever (including the keeping of a substance or an animal)."

The Proposed Development as submitted to the NSW DP&E does not trigger any thresholds in respect of this legislation, for which an Environmental Protection Licence would be required. Therefore, further consideration with regard to the POEO Act is not considered warranted.

4.2.5 State Environmental Planning Policy (State and Regional Development) 2011

Proposed developments involving activities that are listed in Schedule 1 of SRD SEPP are identified as being State Significant Development. Clause 12 of Schedule 1 states:

12 Warehouses or Distribution Centres

- (1) Development that has a capital investment value of more than \$50 million for the purpose of warehouses or distribution centres (including container storage facilities) at one location and related to the same operation.*
- (2) This clause does not apply to development for the purposes of warehouses or distribution centres to which clause 18 or 19 applies.*

The proposed development relates to the development of a Data Centre. The proposed development has a CIV over \$50M, thus the SSD provisions apply. This EIS has been prepared based on the SEARs issued on 21 December 2018.

4.2.6 State Environmental Planning Policy (Infrastructure) 2007

State Environmental Planning Policy (Infrastructure) 2007 (ISEPP) repeals the former *State Environmental Planning Policy No. 11 – Traffic Generating Development* and, pursuant to Clause 104 and provides for certain proposed developments known as Traffic Generating Development, to be referred to NSW Roads and Maritime Services (RMS) for concurrence.

Schedule 3 lists the types of development that are defined as Traffic Generating Development. The referral thresholds for 'Industry' development include:

- *20,000m² or more in area with site access to any road; or*
- *5,000m² or more in area where the site has access to a classified road or to a road that connects to a classified road (if access is within 90 metres of connection, measured along the alignment of the connecting road).*

As the proposed development seeks consent for more than 20,000 m² (34,282 m²) GFA, referral to RMS is required under the SEPP.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

4.2.7 State Environmental Planning Policy No 19 – Bushland in Urban Areas

The Subject Site does not contain land zoned or reserved for public open spaces purposes, rather has been designated for light industrial purposes, similar to the surrounding Lane Cove West Business Park, which serves an employment-generating function to the Lane Cove LGA. It is noted, that the northern boundary of the Subject Site is traversed by identified Bushland; therefore, the provisions of *State Environmental Planning Policy No 19 – Bushland in Urban Areas* (SEPP 19) are relevant to the Proposed Development.

The implications of SEPP 19 are considered further in **Section 6.15** of this EIS, which assesses the potential impacts of the Proposed Development on surrounding bushland as well as bushfire hazards.

4.2.8 State Environmental Planning Policy No. 33 – Hazardous and Offensive Development

To facilitate the intended operation of the Data Centre, there will be some small portions of diesel fuel stored on-site to service the back-up generators; however, there are no combustibles proposed to be stored, thus *State Environmental Planning Policy No 33 – Hazardous and Offensive Development* (SEPP 33) is not triggered. The *SEPP 33 – Preliminary Risk Screen* (SLR Consulting, 2018) notes, that diesel fuel to be stored on-site, is not classed as Dangerous Goods, but is classed as a C1 Combustible Liquid (refer to **Appendix 22**).

The proposed inventory of diesel (and classification), is provided in **Table 7** below.

Table 7: Classification of Diesel in Storage						
Substance	Hazardous Class	Packaging Group	Combustible Liquid Class	Total Storage On-Site	Threshold Quantity	SEPP 33 Threshold Level Findings
Diesel	N/A	-	C1	510,000 L	N/A	N/A

Additionally, there will be no transport of Dangerous Goods associated with the facility.

The Report notes, that the SEPP 33 screenings for storage of Dangerous Goods indicate, that the Proposed Development is not classified as a hazardous or offensive industry.

4.2.9 State Environmental Planning Policy No. 55 – Remediation of Land

Under the provisions of *State Environmental Planning Policy No. 55 – Remediation of Land* (SEPP 55), where a Development Application is made concerning land that is contaminated, the consent authority must not grant consent unless:

- (a) it has considered whether the land is contaminated, and
- (b) if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and
- (c) if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose.

A Phase 2 Acquisition Environmental Due Diligence Assessment was undertaken (Senversa, 2018) to assess the potential distribution / extent of contamination in soil and groundwater identified on-site (refer to **Appendix 13-16**).

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Field observations made during investigation works identified fill materials within the following areas:

- Approximately 1,000 m³ of illegally dumped materials stockpiled within the central portion and northern portions of the Site.
- Fill materials were observed to a depth of 1 m Below Ground Level (BGL) in TP107, within the central portion of the Site. The Report notes, that natural sandstone outcrops were observed throughout the central portion of the Site and as such fill materials identified with TP107 are likely to be isolated in extent.
- The inferred capped area (subject to the NSW EPA maintenance order) is located in the northern portion of the Site and has an approximate total 12,000 m³ of fill material.
- Fill materials were also observed in the south-western portion of the Site in the vicinity of TP101 and TP102. Based on the topography and sandstone outcroppings within close proximity to this area, Senversa considers, that fill material within this portion of the Site is likely to be isolated in extent.

Field observations made during the works did not identify any areas of staining / odours with the exception of isolated fill materials that appeared to be crystallised molasses located at a depth of approximately 1.5 m BGL within SB05 in the north west of the Site near the former molasses tanks and at a depth of approximately 3.0 m BGL within SB03, located within the central portion of the capped area.

Additionally, field screening for landfill gases did not detect significant concentrations of the ground gas methane; however, potentially significant concentrations of carbon dioxide were detected.

Sandstone was found to be outcropping naturally in the central and northern portions of the Subject Site, as bedrock underlying fill materials in the majority of test pit / drilling locations. Laboratory analysis of collected soil samples returned concentrations of contaminants of potential concern (CoPCs) less than the adopted assessment criteria with the exception of:

- Heavy metals (zinc, copper and nickel) exceeding ecological criteria in fill materials.
- Asbestos and hydrocarbons in fill materials located within illegally stockpiled surface materials and fill materials located within and adjacent to the inferred capped area.
- Laboratory analysis for Acid Sulfate Soils (ASS) indicated the potential for ASS to be present. An Acid Sulfate Soil Management Plan will be required for the Proposed Development.

Groundwater was identified at depths ranging from 4 m to 14 m below the surface and was inferred to be flowing in a north westerly direction towards the Lane Cove River, which meanders the northern boundary of the Subject Site. Furthermore, laboratory analysis of collected groundwater samples collected, reported concentrations of all CoPCs less than the adopted health assessment criteria, with the exception of the following:

- PFOS and sum of PFHxS and PFOS exceeded the ecological criteria in MW05 (in the central portion of the inferred capped area).
 - PFHxS concentrations also exceeded the adopted drinking water criteria in MW05. Senversa notes that the use of groundwater for drinking is unlikely.
- Heavy metals (copper, zinc and nickel) exceeded the adopted ecological assessment criteria in MW03, MW04 and MW05. Nickel exceeded the drinking water criteria in MW04.
- Ammonia exceeded the adopted ecological assessment criteria in MW03 and MW05 in the inferred capped area.

The Report notes, that fill materials were found to be contaminated with Asbestos Containing Materials (ACM) and require remediation prior to redevelopment of the Subject Site. If

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

remediation requires fill material to be disposed of offsite it should be pre-classified as 'Special Waste (Asbestos)' unless further testing indicates otherwise.

Based on the results of the investigation undertaken, Senversa considers that the Subject Site can be made suitable for the Proposed Development and recommends that a Remedial Action Plan (RAP) be developed accordingly. Notwithstanding, the following requirements should be adopted during and / or prior to remediation, including:

- *Specific requirements for any works that impact the portion of the Site, subject to the 'NSW EPA Notice Maintaining Remediation' (No.28027, 27 September 2005).*
- *Additional groundwater monitoring to assess identified PFAS within fill and groundwater within the vicinity of the inferred capped area.*
- *Additional ground gas monitoring to assess whether carbon dioxide issues may have a potentially significant impact on the Proposed Development.*
- *An Acid Sulfate Soils Management Plan.*

4.2.10 State Environmental Planning Policy (Coastal Management) 2018

The Subject Site is positioned within an area mapped as containing 'Coastal Wetlands' and 'Proximity Areas for Coastal Wetlands' (refer to **Figure 11**). The aim of *State Environmental Planning Policy (Coastal Management) 2018* (Coastal Management SEPP) *is to promote an integrated and co-ordinated approach to land use planning in the coastal zone in a manner consistent with the objects of the Coastal Management Act 2016, including the management objectives for each coastal management area, by:*

- (a) managing development in the coastal zone and protecting the environmental assets of the coast, and*
- (b) establishing a framework for land use planning to guide decision-making in the coastal zone, and*
- (c) mapping the 4 coastal management areas that comprise the NSW coastal zone for the purpose of the definitions in the Coastal Management Act 2016.*

Under the Schedule 1, Part 2 of the *Coast Management Act 2016*, the Lane Cove River is identified as an estuary, for which Lane Cove Council has implemented the Coastal Zone Management Plan, that guides development on, or near an identified coastal zone. As mentioned above, the Subject Site is positioned adjacent to an identified coastal zone, identified as the Lane Cove River, for which coastal management and protection measures would be adhered to accordingly.

The Proposed Development would ensure that the following criterion are met, namely:

- The biophysical, hydrological or ecological integrity of the adjacent coastal wetland or littoral rainforest; or
- The quantity and quality of surface and ground water flows to and from the adjacent coastal wetland or littoral rainforest.

Furthermore, the land identified and mapped as wetland, would remain undisturbed; however, development would be carried out adjoining and adjacent to the identified portion of land. Additionally, the extent of setbacks achieved would ensure that impacts associated with the Proposed Development are suitably mitigated.

It is noted, that the Proposed Development would constitute Integrated Development requiring referral under Section 4.46 of the EP&A Act; however, it is important to note, that Integrated Development does not apply to State Significant Development. Notwithstanding, the corrective mitigation measures would be adopted and implemented into the proposed scheme

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

[illegible]

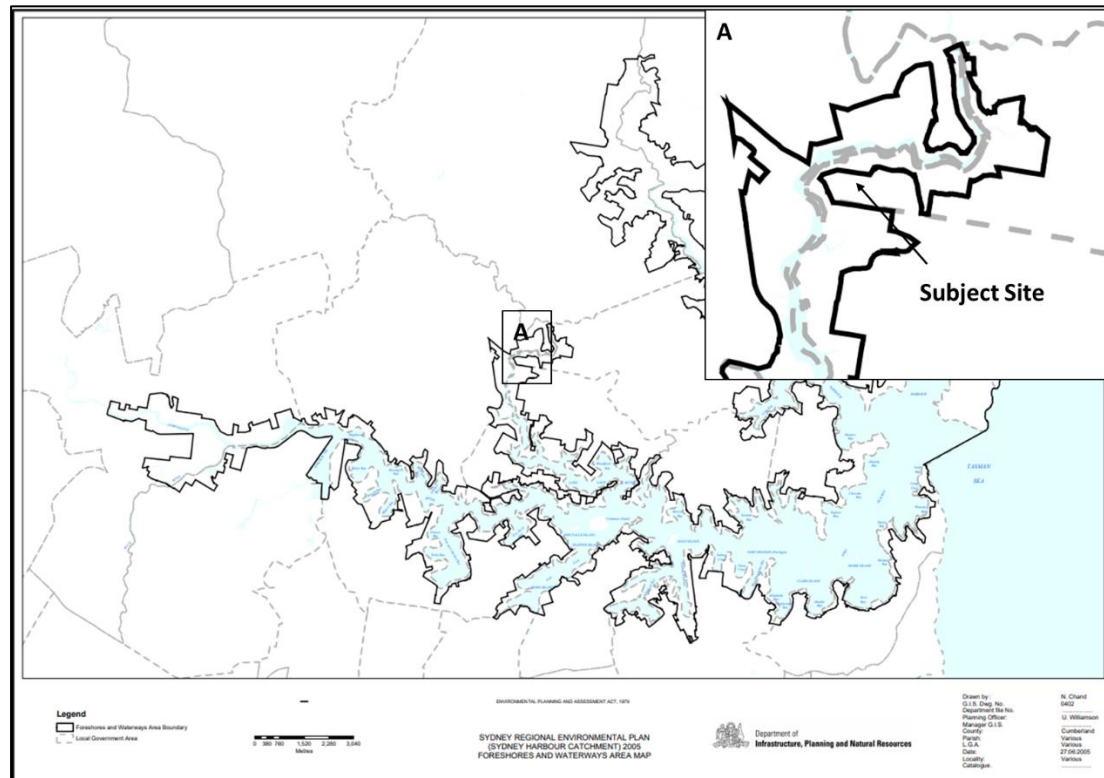


Figure 12 Foreshores and Waterways Area Map (Source: NSW DP&E, 2018)

For the purpose of the Sydney Harbour Catchment SREP, land adjacent to the north-western Site boundary is zoned W2 Environmental Protection (**Figure 13**).

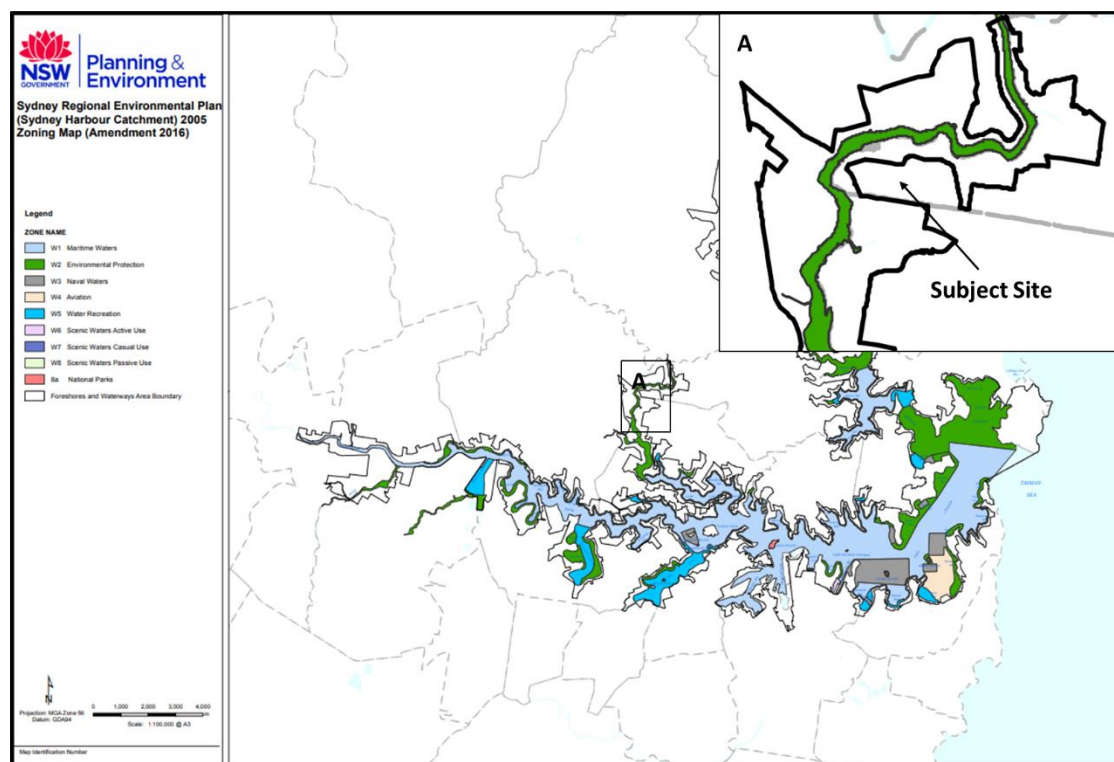


Figure 13 Sydney harbor Catchment SREP Zoning Map (Source: NSW DP&E, 2018)

The objectives of the W2 zone are as follows:

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

- (a) to protect the natural and cultural values of waters in this zone,*
- (b) to prevent damage or the possibility of longer term detrimental impacts to the natural and cultural values of waters in this zone and adjoining foreshores,*
- (c) to give preference to enhancing and rehabilitating the natural and cultural values of waters in this zone and adjoining foreshores,*
- (d) to provide for the long-term management of the natural and cultural values of waters in this zone and adjoining foreshores.*

It should be formally noted, that the Subject Site is located only adjacent and not within the identified W2 zone; however, pursuant to Part 3 Division 2 of the SREP, matters to be taken into consideration by the consent authority before granting consent to development under Part 4 of the Act relate to:

- *Biodiversity, ecology and environment protection*
- *Public access to, and use of, foreshores and waterways*
- *Maintenance of a working harbor*
- *Interrelationship of waterway and foreshore uses*
- *Foreshore and waterways scenic quality*
- *Maintenance, protection and enhancement of views*
- *Boat storage facilities*

This EIS (particularly **Part F**) responds accordingly to the matters to be taken into consideration within the subsequent sections of this EIS and the relevant consultant reports. Additionally, it is not considered likely that the Proposed Development constitutes being referred to the Foreshores and Waterways Planning and Development Advisory Committee; therefore, further consideration in this respect is not considered warranted.

4.3 REGIONAL PLANNING CONTEXT

4.3.1 A Metropolis of Three Cities – Greater Sydney Region Plan

The *A Metropolis of Three Cities – Greater Sydney Region Plan* (Greater Sydney Commission, 2018) divides the Sydney Region into three (3) Cities, with a vision of growth until 2056 (refer to **Figure 14** below). The Plan aims to anticipate the housing and employment needs of a growing and vastly changing population. The overall vision pursues an objective of transforming 'Greater Sydney' into a Metropolis of Three Cities, including:

- The Western Parkland City;
- The Central River City; and,
- The Eastern Harbour City

The division into three (3) cities puts workers and the wider community closer to an array of characteristics such as, intensive jobs, 'city-scale' infrastructure & services, entertainment and cultural facilities. By managing and retaining industrial land close to city centres and transport, this will ensure critical and essential services are readily available to support local businesses and community members and residents. The Proposed Development would not only achieve economic growth and prosperity but would encourage employment-generating opportunities that are considered relatively close in conjunction with residential communities, for ease of commute.

The proposed development also contributes to the four (4) standardised elements communicated across for all three (3) cities, including:

- Infrastructure and collaboration – once in operation, the Proposed Development would be able to provide secure, reliable and scalable solutions for cloud, content and large

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

enterprise customers to house their high and rapidly growing volumes of data and information;

- Liveability – the Proposed Development encourages employment-generating opportunities and economic prosperity, which would have positive influences on the wider locality;
- Productivity – the Proposed Development would be situated within the North District Plan (**section 4.3.2**); and,
- Sustainability – the Proposed Development would not cause any detrimental impacts to its wider ecological surroundings as identified in **Part F** of this EIS.

In summary, the Proposed Development would contribute to the objectives set out in the *A Metropolis of Three Cities – Greater Sydney Region Plan* by promoting minor environmental impacts and the further promotion of employment-generating opportunities to the wider locality and community, positioned within the Lane Cove LGA.

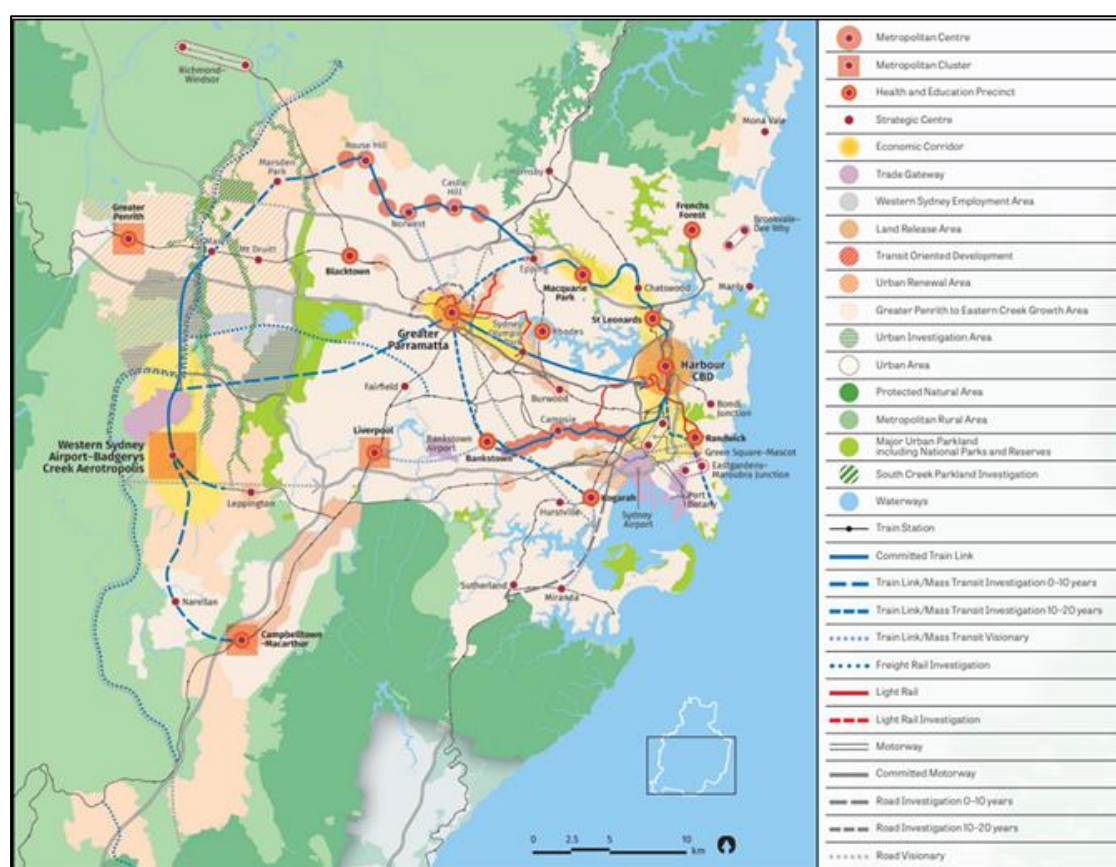


Figure 14 Metropolis of 3 Cities A Vision to 2056 (Greater Sydney Commission: Greater Sydney Region Plan, 2018)

4.3.2 North District Plan

The *North District Plan* covers the Lane Cove LGA. The Plan encourages a twenty-year plan to help encourage and establish goals set out in the *Greater Sydney Region Plan – A Metropolis of Three Cities*, mentioned above. The Plan is considered a 'bridge' between Regional and Local planning.

The Subject Site – 1 Sirius Road, Lane Cove West, is situated within the *North District Plan*, which falls within the Eastern Harbour City (refer to **Figure 15** below).

Environmental Impact Statement
Proposed Data Centre
1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

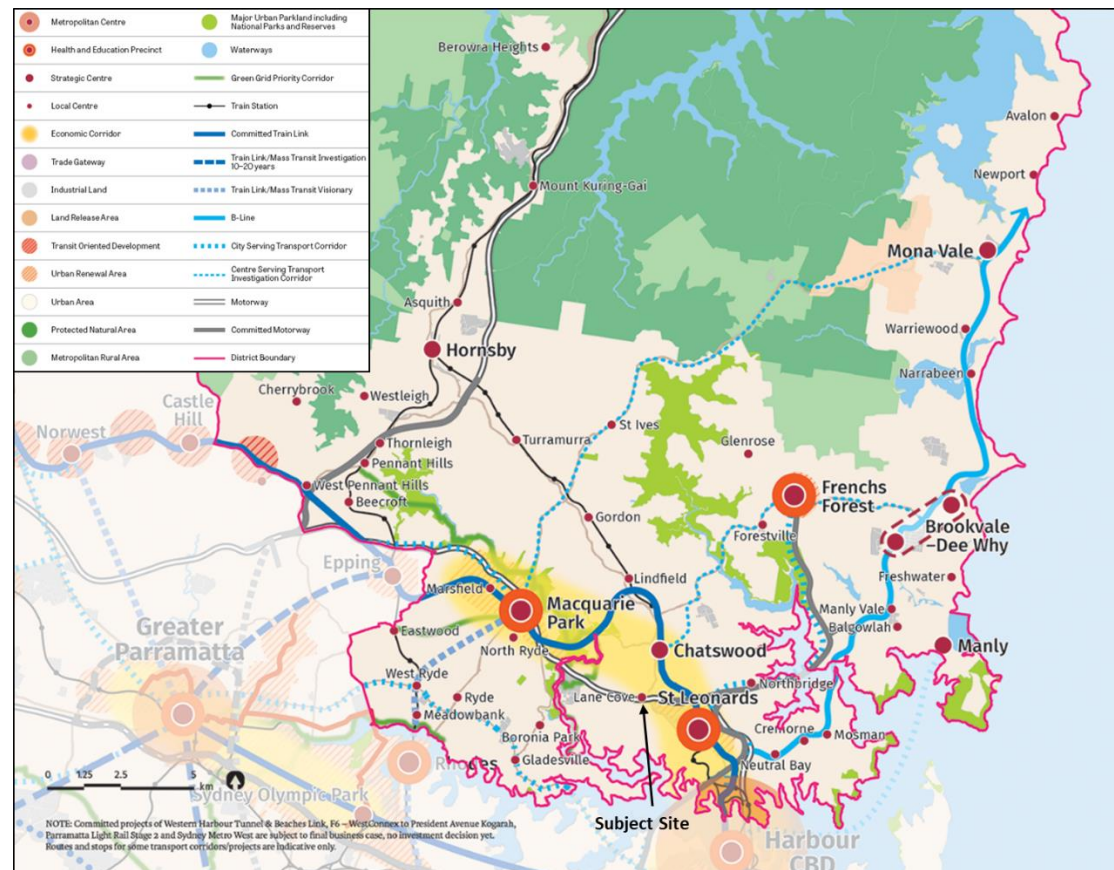


Figure 15 North District Plan Structure Plan (Source: Greater Sydney Region Plan, 2018)

The *North District Plan* reinforces the four (4) planning priorities of the GSC. The Plan establishes a number of priorities and actions to guide growth, development and change, relating to infrastructure & collaboration, liveability, productivity and sustainability.

The Greater Sydney Commission's mission statement further reinforces the Plan's concentrated aims by outlining its main strategies, namely:

- *Enhancing the role of the Eastern Economic Corridor, including North Sydney as part of the Harbour CBD;*
- *Supporting jobs growth in strategic centres, including health and education precincts and facilitating innovation;*
- *Sustaining local centres to provide jobs, services and amenity;*
- *Providing fast and efficient transport connections to achieve a 30-minute city;*
- *Retaining and managing industrial and urban services land;*
- *Creating and renewing great places while protecting heritage and local character and improving places for people;*
- *Improving walking and safe cycling ways;*
- *Enhancing foreshore access to Sydney Harbour and the District's waterways;*
- *Enhancing the quality and improving access to open space, and increasing urban tree canopy;*
- *Retaining the environmental, social and economic values of the Metropolitan Rural Areas; and*
- *Protecting and enhancing the District's unique natural assets including waterways, coastlines and bushland.*

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

The Proposed Development would contribute to the objectives set out in the *North District Plan* by promoting a greater range of land uses of benefit to the community including the proposed Data Centre and other commensurate land uses; facilitating the provision of greater and improved infrastructure; and, promoting additional employment-generating opportunities (relevant to the proposed development) to the wider locality and community closer to home, whilst supporting an economically and environmentally sustainable proposed development.

4.3.3 NSW Future Transport Strategy 2056

Future Transport 2056 presents an integrated 40-year vision and guide for transport investment in NSW. As an update of NSW's *Long Term Transport Master Plan*, *Future Transport 2056* has been developed in concert with the Greater Sydney Commissions, *Greater Sydney Region Plan*, Infrastructure NSW's State Infrastructure Strategy and the NSW DP&E's Regional Plans. The Strategy is underpinned by a suite of supporting plans.

The Strategy seeks to support a productive economy, through the delivery of transport that enables business to reach new markets, attract new investment, while presenting more jobs and training opportunities. Transport is also recognised as a significant importance in the creation of liveable communities in association with its ability to transform the public domain, activate centres and unlock new commercial and housing developments, renewing existing neighbourhoods and spaces. Ensuring the efficiency of transport investments, both with respect to environmental performance and budget, is key to obtaining sustainability objectives. Additionally, productivity, liveability and sustainability are sought to be achieved by the Strategy through the mobilisation of emerging technologies and innovation, for which the Proposed Development, for the purposes of a Data Centre will facilitate accordingly.

Representing the efficient use of existing and planned transport networks, the strategic siting of a Data Centre, with respect to the Sydney Metropolitan Region, is considered conducive with regard to the supply and demand for IT infrastructure, such as cloud storage, ultimately enabling the Data Centre to be accessed via sustainable and active modes of travel.

4.4 LOCAL PLANNING CONTEXT

4.4.1 Lane Cove Local Environmental Plan 2009

LCLEP2009 is the principal EPI applicable to the Site. The Site is zoned as follows:

- IN2 Light Industrial.

Table 8 outlines the relevant planning controls applicable to the Site, as stated within LCLEP2009.

Table 8: Lane Cove Local Environmental Plan 2009 (LCLEP2009) – General LEP Clauses	
Requirement	Application to Proposed Development
Clause 2.3 – Zone Objectives and Land Use Table	(2) <i>The consent authority must have regard to the objectives for development in a zone when determining a development application in respect of land within the zone.</i>
IN2 Light Industrial Zone	
IN2 Light Industrial – Objectives of Zone	- <i>To provide a wide range of light industrial, warehouse and related land uses.</i> - <i>To encourage employment opportunities and to support the viability of centres.</i> - <i>To minimise any adverse effect of industry on other land uses.</i>

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

	- To enable other land uses that provide facilities or services to meet the day to day needs of workers in the area. - To support and protect industrial land for industrial uses. - To ensure that landscaping is a significant element in development viewed from the public domain and neighbouring properties. - To recognise the close proximity of this zone to adjoining residential areas and seek to mitigate potential conflict between industrial and residential uses.
Permitted without Consent	<i>Nil.</i>
Permitted with Consent	<i>Car parks; Centre-based child care facilities; Community facilities; Depots; Food and drink premises; Garden centres; Hardware and building supplies; Industrial training facilities; Light industries; Medical centres; Neighbourhood shops; Places of public worship; Recreation areas; Recreation facilities (indoor); Respite day care centres; Roads; Self-storage units; Sex services premises; Signage; Vehicle body repair workshops; Vehicle repair stations; Vehicle sales or hire premises; Warehouse or distribution centres.</i>
Prohibited	<i>Any development not specified in item 2 or 3.</i>
LEP Clauses	
Clause 4.1 – Minimum Subdivisions Lot Size	The Site is not subject to a minimum lot size pursuant to LCLEP2009.
Clause 4.3 – Height of Buildings	The Site is subject to a maximum building height of approximately 18 m under Clause 4.3 of LCLEP2009 (refer to Figure 16). A Clause 4.6 variation is proposed to be submitted as part of this SSDA (refer to Appendix 34).
Clause 4.4 – Floor Space Ratio	The Site is subject to a maximum Floor Space Ratio (FSR) of 1:1 under Clause 4.4 of LCLEP2009 (refer to Figure 17). The Proposed Development entails an FSR of approximately 0.9:1 complying with Clause 4.4.
Clause 4.6 – Exceptions to Development Standards	The proposed Data Centre would exhibit a proposed maximum height of approximately 24 m. This is a 6 m deficit with regard to compliance concerning the maximum building height (18 m) permitted under LCLEP2009. For further information, refer to the Clause 4.6 variation provided within Appendix 34 .
Clause 5.10 – Heritage Conservation	The Subject Site has not been identified as containing any Heritage items of significance. Additionally, there are no impacts anticipated to Aboriginal and / or Historic Heritage items in close proximity to the Subject Site as confirmed within Appendix 25 & 26 .
Clause 6.1 – Acid Sulfate Soils	The Site is subject to Acid Sulfate Soils under LCLEP2009 categorised as Class 2 & 5 potential for Acid Sulfate Soils to occur (refer to Figure 18). Further analysis is provided within the Contamination Report summarised in Part F of this EIS.
Clause 6.1A – Earthworks	Bulk earthworks are proposed to be carried out, to establish the building pads on the Subject Site for the relevant components of the Proposed Development. Additionally, proposed earthworks would balance any cut and fill accordingly.
Clause 6.2 – Foreshore Building Line	The Site is not mapped as being part of the foreshore building line.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Clause 6.3 – Riparian Land	The northern boundary of the Subject Site is intersected by Riparian Land, mapped under Clause 6.3 of LCLEP2009 (refer to Figure 19). The Ecological Report identified in Part F of this EIS considers the Proposed Development's potential ecological impacts on identified riparian vegetation intersecting the Subject Site.
----------------------------	--

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

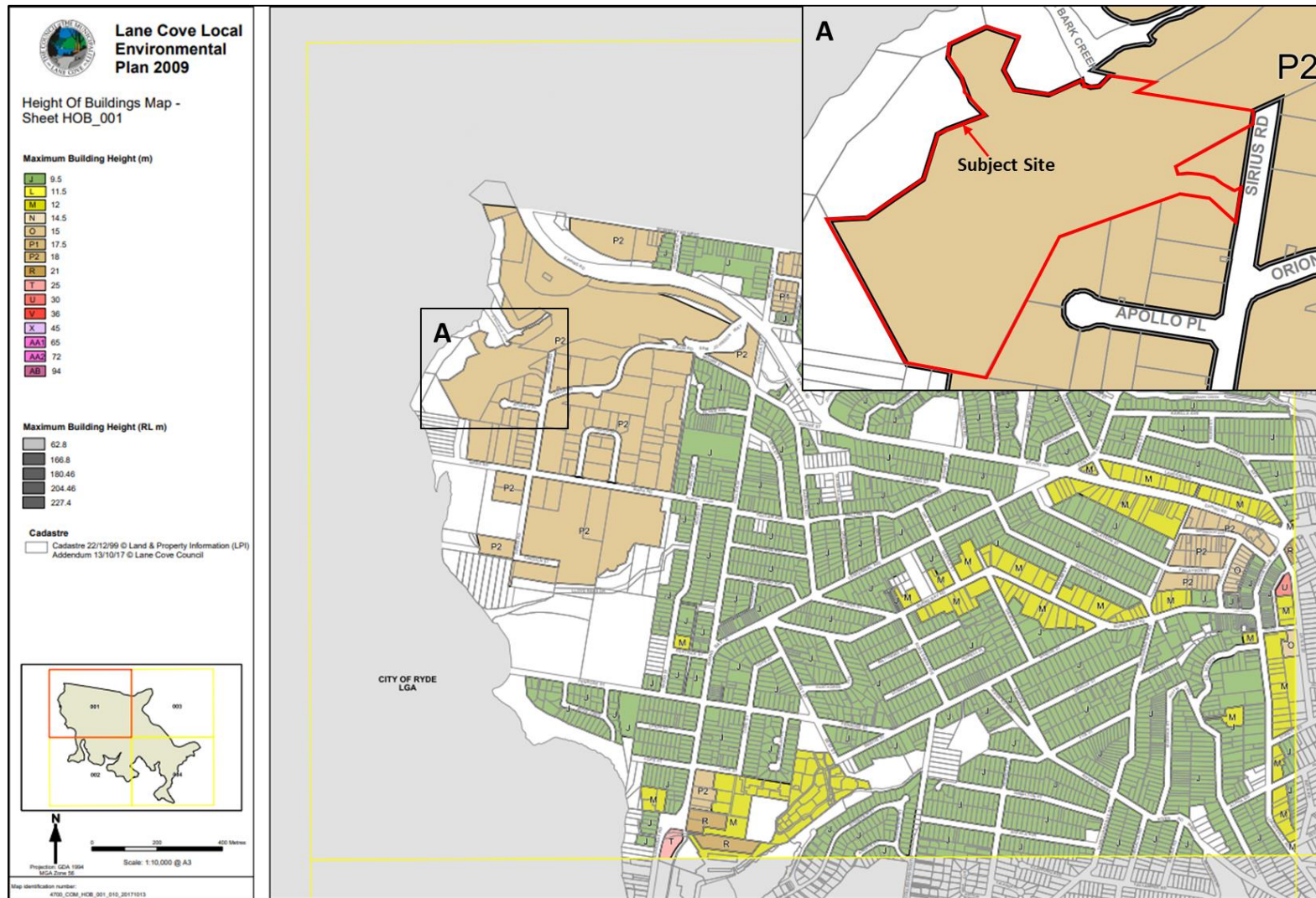


Figure 16 Maximum Building Height of Subject Site and Surrounding Area (Source: NSW Legislation, 2018)

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

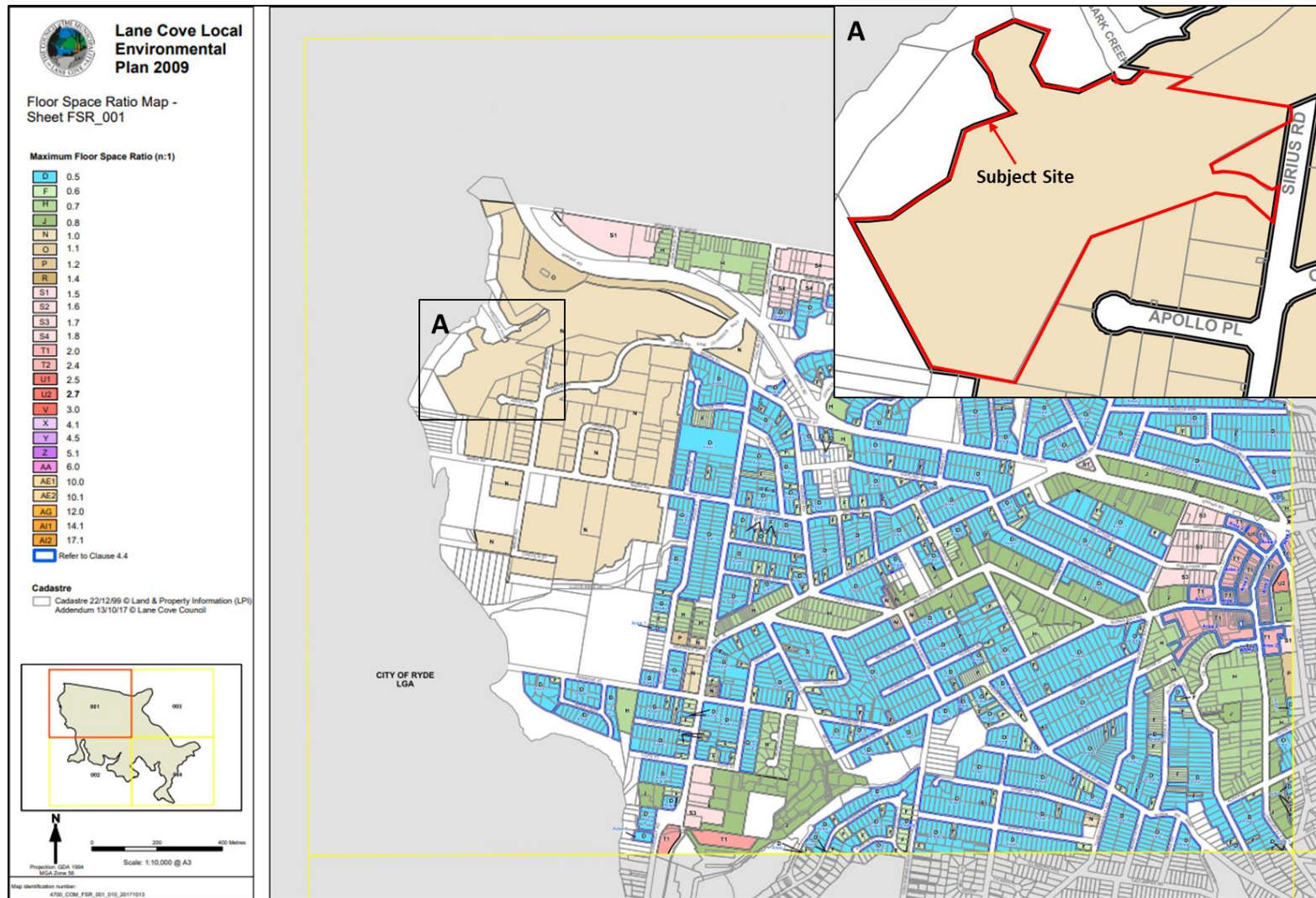
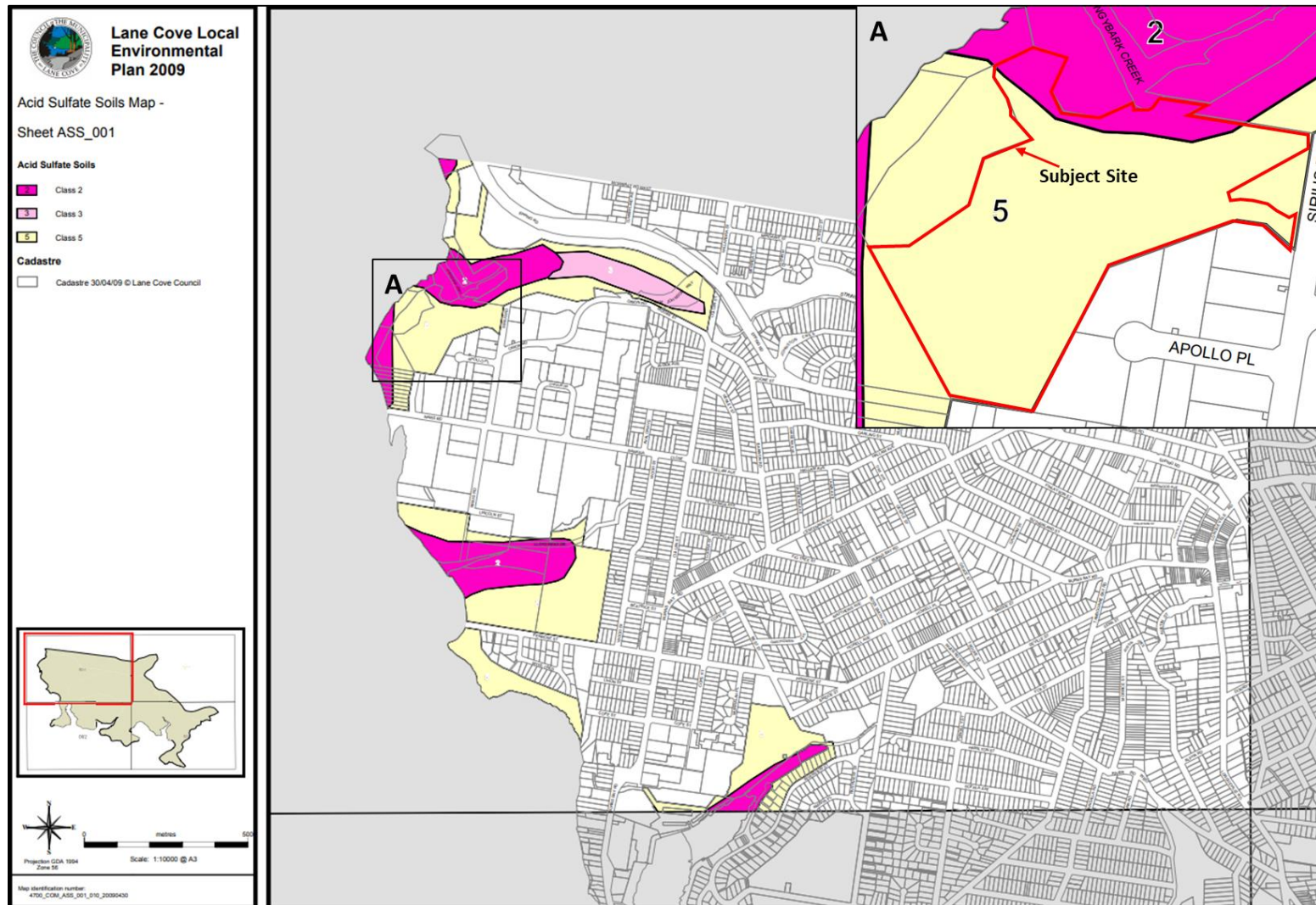


Figure 17 Maximum Floor Space Ratio of Subject Site and Surrounding Area (Source: NSW Legislation, 2018)

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)



Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

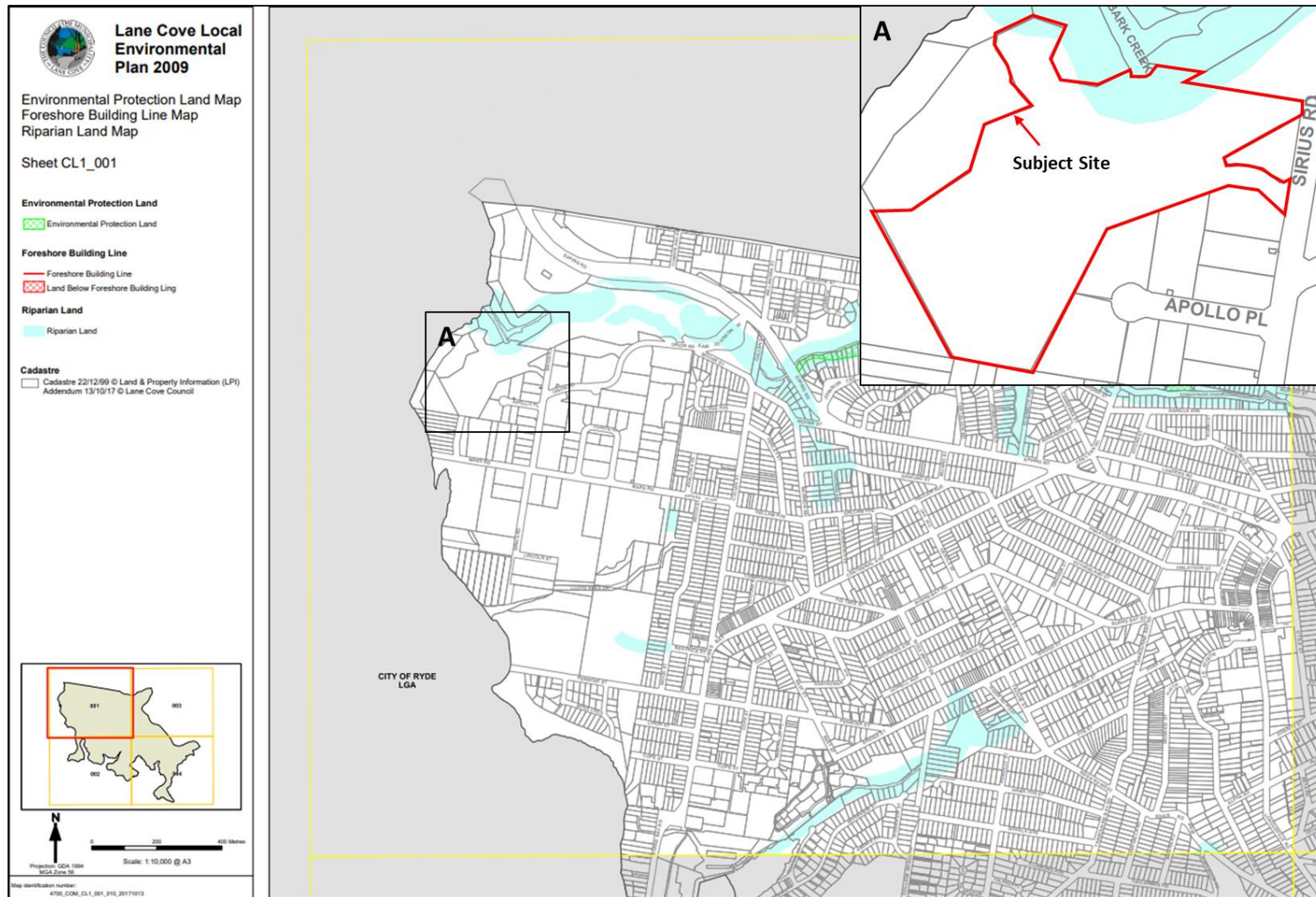


Figure 19 Riparian Land Applicable to the Subject Site and Surrounding Area (Source: NSW Legislation, 2018)

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

4.4.2 Draft Environmental Planning Instruments

No Draft Environmental Planning Instruments apply to the Proposed Development.

4.4.3 Lane Cove Development Control Plan 2009

The *Lane Cove Development Control Plan 2009* (LCDCP2009) was formally adopted by Council on 19 October 2009 and came into regulatory effect as of 22 February 2010. The LCDCP2009 is to be read and applied in retrospect to the LCLEP2009, for which, if there is an inconsistency between the two (2), the LEP would prevail over the DCP.

The aims and objectives of the LCDCP2009 are as follows:

- *Provide detailed planning provisions supplementing the Lane Cove LEP 2009.*
- *Support the locality's sustainability in environmental, social and economic terms.*
- *Conserve, protect and enhance the environmental and built heritage of Lane Cove.*
- *Contribute to effective management of biodiversity.*
- *To protect the quality of water catchments, encourage the use of water sensitive urban design and promote the adoption of whole of water cycle management principles.*
- *Minimise any impacts of transition to higher residential and employment density zones.*
- *Minimise any impacts of the redevelopment of uses not conforming to the zone they are in, by having regard to the scale and character of the surrounding neighbourhood.*
- *Balance individual and community interests to preserve and, where appropriate, improve the existing character and amenity of the municipality.*
- *Enhance the visual quality and functionality of the public and private domain interrelationship.*
- *Achieve an overall character for neighbourhoods that enhance s their sense of identity and place.*
- *Provide a context for the economic vitality of centres.*
- *To promote use of public transport, walking and cycling as the main forms of access, particularly within commercial centres.*
- *Regulate the visual impact of all development within foreshore areas.*
- *Further the goal of equal access for all residents and visitors.*
- *Enhance opportunities for cultural experiences throughout the natural and built environment by promoting public art.*

It is noted, that DCPs do not apply to State Significant Development Applications under the SRD SEPP. Notwithstanding, a review of the core controls applicable to the proposed industrial development, for the purposes of a proposed Data Centre with regard to the Subject Site can be found in **Appendix 35**.

4.4.4 Lane Cove Development Contributions Plan

Lane Cove Council has adopted the Lane Cove Section 94 Contribution Plan (Section 7.11 as per the EP&A Act amendments). The Section 7.11 Contribution Plans would be applicable to the Proposed Development made under Part 4 of the EP&A Act.

The Proposed Development would incur a contribution rate of approximately \$42 per m². Accordingly, as the Proposed Development is not proposed to be staged, the payment would be required for the Proposed Development at the issue of the first Construction Certificate, as confirmed within the Pre-DA Meeting Minutes (refer to **Appendix 2**).

PART E CONSULTATION

5.1 SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS

An application to receive SEARs was submitted to the NSW DP&E (Reference No. SSD 9429). The SEARs were subsequently issued on 2 August 2018.

The SEARs are annexed as **Appendix 1**. An overview of how the requirements have been satisfied within the EIS is outline further in **Table 9** below. This document is also consistent with the minimum requirements for an EIS in Clauses 6 & 7 of Schedule 2 of the EP&A Regulation.

Table 9: How SEARs have been Satisfied	
General Requirements	How Addressed
The EIS for the proposed development must meet the form and content requirements in Clauses 6 & 7 of Schedule 2 of the EP&A Regulation.	This EIS has been prepared in accordance with Clauses 6 & 7 of Schedule 2 of the EP&A Regulation. The structure of this EIS addresses all legislative requirements.
Key Issues	
The EIS must include an assessment of the potential impacts of the proposal (including cumulative impacts) and develop appropriate measures to avoid, mitigate, manage and/or offset these impacts. The EIS must address the following specific matters:	Part F
Statutory and Strategic Context – including: - detailed justification that the proposed land use is permissible with consent; - details of any proposed consolidation or subdivision of land; - demonstration that the proposal is consistent with all relevant planning strategies, environmental planning instruments, adopted precinct plans, draft district plan(s) and adopted management plans and justification for any inconsistencies. This includes, but is not limited to: - State Environmental Planning Policy (Infrastructure) 2007 - State Environmental Planning Policy (State and Regional Development) 2011 - State Environmental Planning Policy (Coastal Management) 2018 - Sydney Regional Environment Plan (Sydney Harbour Catchment) 2005 - Greater Sydney Region Plan: A Metropolis of Three Cities - Our Greater Sydney 2056: North District Plan - Future Transport Strategy 2056.	Refer to Section 2.3 and Part D .
Suitability of the Site – including: An analysis of site constraints, such as bushfire and flooding impacts.	Refer to Section 2.5, 6.5 & 6.15 .

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Community and Stakeholder Engagement – including: ▪ a detailed community and stakeholder participation strategy which identifies who in the community has been consulted and a justification for their selection, other stakeholders consulted and the form(s) of consultation, including a justification for this approach; ▪ a report on the results of the implementation of the strategy including issues raised by the community and surrounding land owners and occupiers that may be impacted by the proposal; ▪ details of how issues raised during community and stakeholder consultation have been addressed and whether they have resulted in changes to the proposal; ▪ details of the proposed approach to future community and stakeholder engagement based on the results of consultation.	Refer to Part E and Appendix 33 .
Noise and Vibration – including: ▪ a quantitative noise and vibration impact assessment undertaken by a suitably qualified person in accordance with the relevant Environment Protection Authority guidelines and including an assessment of nearby sensitive receivers; ▪ cumulative impacts of other developments ▪ details of proposed mitigation, management and monitoring measures.	Refer to Section 6.8 and Appendix 19 & 20 .
Urban Design and Visual – including: ▪ a visual impact assessment (including photomontages and perspectives) of the development layout and design (buildings and storage areas), including staging, site coverage, setbacks, open space, landscaping, height, colour, scale, building materials and finishes, façade design, signage and lighting, particularly in terms of potential impacts on: ○ nearby public and private receivers; and ○ significant vantage points in the broader public domain including Magdala Park ▪ consideration of the layout and design of the development having regard to the surrounding vehicular, pedestrian and cycling networks; and, ▪ detailed plans showing suitable landscaping which incorporates endemic species.	Refer to Section 6.3 and Appendix 6, 8 & 34 .
Contamination – including: ▪ a detailed assessment of the extent and nature of any contamination of the soil, groundwater and soil vapour, in accordance with State Environmental Planning Policy No. 55 – Remediation of Land; ▪ an assessment of potential risks to human health and the environmental receptors in the vicinity of the site; ▪ demonstration that the proposal is consistent with site's 'Maintenance of Remediation Order' (Notice No. 28027, dated 27/09/2005);	Refer to Section 4.2.9, 6.5 and Appendix 13-16 .

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

- a description and appraisal of any mitigation and monitoring measures; and, - consideration of whether the site is suitable for the proposed development.	
Biodiversity – including: - an assessment of the proposal's biodiversity impacts in accordance with the Biodiversity Conservation Act 2016, including the preparation of a Biodiversity Development Assessment Report (BDAR) where required under the Act, except where a waiver for preparation of a BDAR has been granted; - an assessment of the proposal's impact upon the adjacent coastal wetland area, in accordance with State Environmental Planning Policy (Coastal Management) 2018; - an assessment of the proposal's impact upon the Lane Cove River and adjacent key fish habitat areas and riparian corridors, in accordance with the relevant Department of Primary Industries guidelines; - describe how impacts upon critical vegetation and endangered species on-site will be avoided and minimised.	Refer to Section 4.2.3, 6.11 and Appendix 23 .
Infrastructure Requirements – including: - a detailed written and/or graphical description of infrastructure required on the site, including the proposed electricity substation; - 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; - 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; - an assessment of the impacts of the development on existing utility infrastructure and service provider assets surrounding the site, and describe how any potential impacts would be avoided and minimised.	Refer to Section 6.16 and Appendix 28 .
Sustainable Development – including: - an assessment of the energy use of the proposal and all reasonable and feasible measures that would be implemented on site to minimise the proposal's greenhouse gas emissions; - a description of how the proposal will incorporate the principles of ecologically sustainable development in the design, construction and ongoing operation of the development; and, - a description of the measures to be implemented to minimise consumption of resources, especially energy and water.	Refer to Section 6.17 & 6.18 and Appendix 29 .
Traffic and Access – including:	Refer to Section 6.6 and Appendix 17 .

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

▪ a quantitative Traffic Impact Assessment prepared in accordance with relevant Lane Cove Council, Austroads and Roads and Maritime Services guidelines using current traffic counts and cumulative traffic from surrounding existing and approved development and the proposed development; ▪ details of all daily and peak traffic and transport movements likely to be generated by the development during construction and indicative operation (vehicle type, public transport, pedestrian and bicycle trips) including the impact on the nearby intersections (using SIDRA or similar modelling); ▪ details of the likely arrival and departure times for vehicles for all components of the proposed development; ▪ details of the largest vehicle anticipated to access and move within the site, including swept path analysis; ▪ details and plans of the internal road network, loading dock servicing and provisions, on-site parking provisions, and sufficient pedestrian and cyclist facilities, in accordance with the relevant Australian Standards; ▪ details of road upgrades, new roads or access points required for the development, if necessary.	
Soils and Water – including: ▪ a description of the catchment and proximity of the site to waterways, including the Lane Cove River; ▪ consideration of potential local and mainstream flooding impacts; ▪ an assessment of potential surface and groundwater impacts associated with the development, including potential impacts on the Lane Cove River, other watercourses, riparian areas, groundwater, and groundwater-dependent communities nearby; ▪ an assessment in accordance with ASSMAC Guidelines for the presence and extent of acid sulfate soils (ASS) and potential acid sulfate soils (PASS) on the site and, where relevant, appropriate mitigation measures; ▪ a description of the surface, stormwater and wastewater management systems, including on site detention, and measures to treat or reuse water; ▪ a detailed water balance including a description of the water demands and breakdown of water supplies; and any water licensing requirements; ▪ description of the measures to minimise water use; and ▪ description of the proposed erosion and sediment controls during construction.	Refer to Section 3.2.2, & 6.5 and Appendix 9-11.
Hazards and Risks – including: a preliminary risk screening completed in accordance with State Environmental Planning Policy No. 33 – Hazardous and Offensive Development and Applying SEPP 33 (DoP, 2011), with a clear indication of class, quantity and location of all dangerous goods and hazardous materials associated with the development. Should the preliminary risk screening indicate that the development is "potentially hazardous", a Preliminary Hazard Analysis (PHA) must be prepared in accordance with Hazardous Industry Planning	Refer to Section 3.2.3, 4.2.8 & 6.10 and Appendix 22.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Advisory Paper No. 6 – Guidelines for Hazard Analysis (DoP, 2011) and Multi-Level Risk Assessment (DoP, 2011).	
Bushfire – including: ▪ details of the storage of any flammable materials; ▪ an assessment against the requirements of Planning for Bushfire Protection 2006; ▪ a description of measures to ensure the proposal will not increase the bushfire risk to adjoining lands.	Refer to Section 6.15 and Appendix 27 .
Waste – including: ▪ details of the quantities and classification of all waste streams to be generated on site during the development; ▪ details of waste storage, handling and disposal during the development; ▪ details of the measures that would be implemented to ensure that the development is consistent with the aims, objectives and guidance in the NSW Waste Avoidance and Resource Recovery Strategy 2014-2021.	Refer to Section 6.7 and Appendix 18 .
Air Quality – including: ▪ an assessment of the air quality impacts (including dust and odour) during the development, in accordance with the relevant Environment Protection Authority guidelines; ▪ details of proposed mitigation, management and monitoring measures.	Refer to Section 6.9 and Appendix 21 .
Heritage – including: an assessment of Aboriginal and non-Aboriginal cultural heritage items and values of the site and surrounding area in accordance with the relevant Office of Environment and Heritage guidelines.	Refer to Section 6.13 & 6.14 and Appendix 25-27 .
Contributions – including: consideration of the Lane Cove Section 94 Contribution Plan 1996, revised 9 October 2013, and/or details of any Planning Agreement.	Refer to Section 6.12
Consultation	
During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups and affected landowners. In particular you must consult with: ▪ Lane Cove Council ▪ Environment Protection Authority ▪ Ausgrid ▪ Roads and Maritime Services ▪ Transport for NSW ▪ Department of Industry – Crown Lands and Water ▪ Department of Primary Industries – Fisheries ▪ Office of Environment and Heritage ▪ Fire and Rescue NSW ▪ Rural Fire Service ▪ Sydney Water ▪ City of Ryde Council ▪ surrounding local residents and stakeholders ▪ any other public transport, utilities or community service providers.	Refer to Section 5.2 .

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

The EIS must describe the consultation process and the issues raised and identify where the design of the development has been amended in response to these issues. Where amendments have not been made to address an issue, a short explanation should be provided.	
Further Consultation After Two (2) Years	
If you do not lodge an application under Section 4.12(8) of the <i>Environmental Planning and Assessment Act 1979</i> within two (2) years of the issue date of these SEARs, you must consult with the Secretary in relation to any further requirements for lodgement.	Noted.

During the preparation of the SEARs, the NSW DP&E also consulted with stakeholders, and in the process obtained a list of their Key Issues for the proponent to assess throughout this EIS. These Key Issues are contained in **Table 10 - 19** below. Please note, Consultation Letters have been sent to the parties listed above.

Table 10: Lane Cove Council's Key Issues for Assessment	
Key Issues	How Addressed
General Requirements	
Section 4.14 – Development on Bush Fire Prone Land The provisions of Section 4.14 apply to the development and are to be addressed. Any APZ is to have regard to ecology. It may be warranted to provide an RDA for bushland protection before the APZ starts within the subject site. Further, the APZ should be wholly contained within the subject site boundary and is not to extent onto public land. The bushfire consultant and ecologist should consult in this regard. Further, Planning for Bushfire Protection identifies that a "The public road system in a bush fire prone area should provide alternative access and egress for firefighters and residents during a bush fire emergency if part of the road system is cut off by fire." (p22). Only one access/egress route appears possible for the site, and as a consequence the site may not fulfil access requirements for emergency services.	Section 6.15
Section 4.15 – Evaluation The matters for consideration in Section 4.15(1)(a)(i)-(iii) are addressed in Part 3(b)-(j) of these notes (or highlighted in the preceeding table of relevant legislation and codes where a draft EPI).	Noted. See contents of this EIS.
Section 7.11 – Local Infrastructure Contribution The site is subject to the Lane Cove Development Contributions Plan which requires a contribution on a square metre rate for industrial development. The current contribution rate can be found in Council's Fees and Charges (\$42 per m ² – 2018/2019). As the proposal is not proposed to be staged, the payment would be required on the development at the issue of the first Construction Certificate.	Refer to Section 4.4.4
Integrated Development	Section 4.2.10

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

A control activity approval is considered to be required under the Water Management Act 2000 (with the exception being if the proposal is considered State Significant Development). This would result in the proposal being nominated integrated development.	
Biodiversity Conservation Act 2016 The applicant indicated during the pre-DA that a biodiversity development assessment report was being prepared. It is assumed this is being prepared to accompany a State Significant Development Application to the Minister of Planning for consideration of the proposals impacts on biodiversity values under Clause 7.14 of the Act. Any BDAR should have regard to the mapped biodiversity and ecological significance of the site and areas adjoining the site. While the mapping in some instances is historic, the site has been the subject of unauthorised activity and man-made (as opposed to natural) degradation, and may require rehabilitation. Consideration should be given to a better building design before offsetting is pursued in order to retain vegetation and provide for a suitable buffer between the built form and areas of importance in relation to biodiversity. Any offsetting should be in the vicinity of the site having regard to the objectives in promoting biodiversity, a buffer to bushland and rehabilitating the site within the other legislation/codes detailed in these notes. Further detailed discussion about the importance of this buffer and the mapped ecology is contained later within these notes in parts 3(d), (g), (h), (i) and (j).	Refer to Section 4.2.3
SEPP (State and Regional Development 2011) The proposal seeks classification under Schedule 1 Clause 13 of the SEPP. Consideration is to be given to whether proposal falls within the definition of a warehouse or distribution centre. The initial view is that a high technology industry is a more appropriate definition which would preclude the application being considered as state significant development as a high technology industry or light industry is not listed within Schedule 1. However, the ultimate definition of the use is at the discretion of those determining whether the proposal meets the criteria for SSD.	Refer to Section 4.2.5
SEPP No 19 (Bushland in Urban Areas) The subject site adjoins bushland (areas adjoining mapped in yellow) and accordingly the provisions Clause 9 of the SEPP apply to the proposal.	Refer to Section 4.2.7
SEPP No 33 (Hazardous and Offensive Development) A preliminary hazard analysis would be required given the likely volume (indicatively stated as 1 million litres) of fuel stored for back-up power supply to the data centre. Consideration should be given to the ecological impact of a fuel spill or overflow of firefighting waters in the marine environment. Measures should be employed to protect the environment in the event of a failure or fire event.	Refer to Section 4.2.8

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

SEPP No 55 (Remediation of Land) Council's Environmental Health Manager indicated there is known contamination on the site subject to an EPA investigation. Any Development Application is to be accompanied by a contamination report satisfying the provisions of SEPP No. 55 and the EPA Guidelines.	Refer to Section 4.2.9
SEPP (Coastal Management) 2016 The subject site is subject to SEPP (Coastal Management) 2018. The SEPP aims to protect and improve the biophysical, hydrological and ecological integrity of coastal zones. As shown in Figure 4 below the site contains Coastal Wetlands (blue) and is within the proximity area for the wetlands (dashed). Detailed GIS/survey analysis needs to be undertaken as to whether the site contains coastal wetlands, or is only subject to the buffer under the Coastal Wetlands and Littoral Rainforests Maps. The following Clauses are of relevance depending on the outcome of the above analysis: ▪ Clause 10 – Development on certain land within coastal wetlands and littoral rainforests area; or ▪ Clause 11 – Development on land in proximity to coastal wetlands or littoral rainforest. An initial analysis considers there may be some Coastal Wetland within the north-eastern edge of the site at the mouth of Stringy Bark Creek. If this is the case the proposal may be classified as designated development and will require an EIS. In any event SEPP (Coastal Management) 2018 applies to the site and is to be addressed in detail with any application made.	Refer to Section 4.2.10
SREP (Sydney Harbour Catchment) 2005 The proposal is subject to SREP (Sydney Harbour Catchment) 2005 and Sydney Harbour Foreshores and Waterways Area Development Control Plan 2005. Any application is to demonstrate compliance with the provisions of the SEPP and supporting DCP within a Statement of Environmental Effects. The site is mapped within Map 5 (Ecological Communities and Landscape Characters) and is adjacent to or contains: ▪ Mudflats and Mangroves; ▪ Open Forest (Type A); and ▪ Open Forest (Type B).	Noted.
SEPP (Infrastructure) 2007 The proposal is traffic-generating development under Schedule 3 of State Environmental Planning Policy (Infrastructure) 2007. Written notice will be required to be given to the RMS under Clause 104 of the SEPP.	Refer to Section 4.2.6

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Consideration is to be given to as to whether Clause 45 of SEPP (Infrastructure) 2007 applies in this instance for works adjacent or near to electricity infrastructure.	
--	--

Table 11: NSW Office of Environment & Heritage Key Issues for Assessment

Key Issues	How Addressed
General Requirements	
Biodiversity: 1. Biodiversity impacts related to the proposed development are to be assessed in accordance with Section 7.9 of the Biodiversity Conservation Act 2017 using the Biodiversity Assessment Method and documented in a Biodiversity Development Assessment Report (BDAR). The BDAR must include information in the form detailed in the Biodiversity Conservation Act 2016 (s6.12), Biodiversity Conservation Regulation 2017 (s6.8) and Biodiversity Assessment Method, unless OEH and DPE determine that the proposed development is not likely to have any significant impacts on biodiversity values. 2. The BDAR must document the application of the avoid, minimise and offset framework including assessing all direct, indirect and prescribed impacts in accordance with the Biodiversity Assessment Method. 3. The BDAR must include details of the measures proposed to address the offset obligation as follows: ▪ The total number and classes of biodiversity credits required to be retired for the development/project; ▪ The number and classes of like-for-like biodiversity credits proposed to be retired; ▪ The number and classes of biodiversity credits proposed to be retired in accordance with the variation rules; ▪ Any proposal to fund a biodiversity conservation action; ▪ Any proposal to conduct ecological rehabilitation (if a mining project); ▪ Any proposal to make a payment to the Biodiversity Conservation Fund. If seeking approval to use the variation rules, the BOAR must contain details of the reasonable steps that have been taken to obtain requisite like-for-like biodiversity credits. 4. The BDAR must be submitted with all spatial data associated with the survey and assessment as per Appendix 10 of the BAM. 5. The BDAR must be prepared by a person accredited in accordance with the Accreditation Scheme for the Application of the Biodiversity Assessment Method Order 2017 under s6.10 of the <i>Biodiversity Conservation Act 2016</i>.	Refer to Section 4.2.3, 6.11 and Appendix 23.
Aboriginal Cultural Heritage: 6. The EIS must identify and describe the Aboriginal cultural heritage values that exist across the whole area that will be affected by the development and document these in an Aboriginal Cultural Heritage Assessment Report (ACHAR). This may include the need for surface survey and test excavation. The identification of cultural heritage values must be	Refer to Section 6.13 & 6.14 and Appendix 25-27.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

conducted in accordance with the Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW (DECC 201 0), and guided by the Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (OEH. 2011). 7. Consultation with Aboriginal people must be undertaken and documented in accordance with the Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW). The significance of cultural heritage values for Aboriginal people who have a cultural association with the land must be documented in the ACHAR. 8. Impacts on Aboriginal cultural heritage values are to be assessed and documented in the ACHAR. The ACHAR must demonstrate attempts to avoid impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the ACHAR must outline measures proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to OEH. 9. The ACHAR must outline procedures to be followed if Aboriginal objects are found at any stage of the life of the [development/project] to formulate appropriate measures to manage unforeseen impacts. Note that a due diligence report is not acceptable, an ACHAR must be prepared.	
Water and Soils: 10. The EIS must map the following features relevant to water and soils including: a. Acid sulfate soils (Class 1, 2, 3 or 4 on the Acid Sulfate Soil Planning Map). b. Rivers, streams, wetlands, estuaries (as described in s4.2 of the Biodiversity Assessment Method). c. Wetlands as described in s4.2 of the Biodiversity Assessment Method. d. Groundwater. e. Groundwater dependent ecosystems. f. Proposed intake and discharge locations. 11. The EIS must describe background conditions for any water resource likely to be affected by the development, including: a. Existing surface and groundwater. b. Hydrology, including volume, frequency and quality of discharges at proposed intake and discharge locations. c. Water Quality Objectives (as endorsed by the NSW Government http://www.environment.nsw.gov.au/ieo/index.htm) including groundwater as appropriate that represent the community's uses and values for the receiving waters. d. Indicators and trigger values/criteria for the environmental values identified at (c) in accordance with the ANZECC (2000) Guidelines for Fresh and Marine Water Quality and/or local objectives, criteria or targets endorsed by the NSW Government. e. Risk-based Framework for Considering Waterway Health Outcomes in Strategic Land-use Planning Decisions http://www.environment.nsw.gov.au/research-and-publications/publications-search/risk-based-framework-	Refer to Section 3.2.2, & 6.5 and Appendix 9-11.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

for-considering-waterway-health-outcomes-in-strategic-land-use-planning 12. The EIS must assess the impacts of the development on water quality, including: a. The nature and degree of impact on receiving waters for both surface and groundwater, demonstrating how the development/project protects the Water Quality Objectives where they are currently being achieved, and contributes towards achievement of the Water Quality Objectives over time where they are currently not being achieved. This should include an assessment of the mitigating effects of proposed stormwater and wastewater management during and after construction. b. Identification of proposed monitoring of water quality. c. Consistency with any relevant certified Coastal Management Program (or Coastal Zone Management Plan) 13. The EIS must assess the impact of the development on hydrology, including: a. Water balance including quantity, quality and source. b. Effects to downstream rivers, wetlands, estuaries, marine waters and flood plain areas. c. Effects to downstream water-dependent fauna and flora including groundwater dependent ecosystems. d. Impacts to natural processes and functions within rivers, wetlands, estuaries and floodplains that affect river system and landscape health such as nutrient flow, aquatic connectivity and access to habitat for spawning and refuge (e.g. river benches). e. Changes to environmental water availability, both regulated/licensed and unregulated/rules - based sources of such water. f. Mitigating effects of proposed stormwater and wastewater management during and after construction on hydrological attributes such as volumes, flow rates, management methods and re-use options. g. Identification of proposed monitoring of hydrological attributes.	
Flooding and Coastal Hazards: 14. The EIS must map the following features relevant to flooding as described in the Floodplain Development Manual 2005 (NSW Government 2005) including: a. Flood prone land b. Flood planning area, the area below the flood planning level c. Hydraulic categorisation (floodways and flood storage areas) d. Flood hazard. 15. The EIS must describe flood assessment and modelling undertaken in determining the design flood levels for events, including a minimum of the 5% Annual Exceedance Probability (AEP), 1% AEP, flood levels and the probable maximum flood, or an equivalent extreme event. 16. The EIS must model the effect of the proposed development (including fill) on the current flood behaviour for a range of design events as identified above. This includes the 0.5% and 0.2% AEP year flood events as proxies for assessing sensitivity	Refer to Section 3.2.2, & 6.5 and Appendix 9-11.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

to an increase in rainfall intensity of flood producing rainfall events due to climate change. 17. Modelling in the EIS must consider and document: ▪ Existing council flood studies in the area and examine consistency to the flood behaviour documented in these studies. ▪ The impact on existing flood behaviour for a full range of flood events including up to the probable maximum flood, or an equivalent extreme flood. ▪ Impacts of the development on flood behaviour resulting in detrimental changes in potential flood affection of other developments or land. This may include redirection of flow, flow velocities, flood levels, hazard categories and hydraulic categories. ▪ Relevant provisions of the NSW Floodplain Development Manual 2005. 18. The EIS must assess the impacts on the proposed development on flood behaviour, including: a. Whether there will be detrimental increases in the potential flood affectation of other properties, assets and infrastructure. b. Consistency with Council flood plain risk management plans. c. Consistency with any Rural Flood plain Management Plans. d. Compatibility with the flood hazard of the land. e. Compatibility with the hydraulic functions of flow conveyance in floodways and storage in flood storage areas of the land. f. Whether there will be adverse effect to beneficial inundation of the flood plain environment, on, adjacent to or downstream of the site. g. Whether there will be direct or indirect increase in erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses. h. Any impacts the development may have upon existing community emergency management arrangements for flooding. These matters are to be discussed with the NSW SES and Council. i. Impacts the development may have upon managing risk to life, existing community emergency management arrangements, evacuation and access, and contingency measures for the full range of flood risk (based upon the probable maximum flood or an equivalent extreme flood event). These matters must be discussed with the State Emergency Services and Council. j. Any impacts the development may have on the social and economic costs to the community as consequence of flooding.	
OEH Estate: 19. The EIS must identify: a. In the case of a development that adjoins, is in the immediate vicinity of a park or upstream, the assessment of impacts must address the matters to be considered outlined in the Guidelines for developments adjoining land managed by the Office of Environment and Heritage (OEH 2013) and include:	Refer to Section 3.2.2, & 6.5 and Appendix 9-11.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

▪ The nature of the impacts, including direct and indirect impacts. ▪ The extent of the direct and indirect impacts. ▪ The duration of the direct and indirect impacts. ▪ The objectives of the reservation of the land. b. Measures proposed to prevent, control, abate, minimise and manage the direct and indirect impacts including an evaluation of the effectiveness and reliability of the proposed measures. c. Residual impacts.	
--	--

Table 12: Roads and Maritime Services (RMS) Key Issues for Assessment

Key Issues	How Addressed
General Requirements	
Daily and peak traffic movements likely to be generated by the proposed development including the impact on nearby intersections and the need/associated funding for upgrading or road improvement works (if required).	Refer to Section 6.6
Details of the proposed accesses and the parking provisions associated with the proposed development including compliance with the requirements of the relevant Australian Standards (i.e.; turn paths, sight distance requirements, aisle widths, etc.).	Refer to Section 6.6
Proposed number of car parking spaces and compliance with the appropriate parking codes.	Refer to Section 6.6
Details of service vehicle movements (including vehicle type and likely arrival and departure times).	Refer to Section 6.6
Roads and Maritime requires the EA report to assess the implications of the proposed development for non-car travel modes (including public transport use, walking and cycling); the potential for implementing a location-specific sustainable travel plan (e.g.; Green Travel Plan, 'Travelsmart' or other travel behaviour change initiative); and the provision of facilities to increase the non-car mode share for travel to and from the site. This will entail an assessment of the accessibility of the development site by public transport.	Refer to Section 6.6
Roads and Maritime requires an assessment of the likely toxicity levels of loads transported on arterial and local roads to / from the site and, consequently, the preparation of an incident management strategy for crashes involving such loads, if relevant.	Refer to Section 6.6
Roads and Maritime will require in due course the provision of a traffic management plan for all demolition/construction activities, detailing vehicle routes, number of trucks, hours of operation, access arrangements and traffic control measures.	Refer to Section 6.6

Table 13: Transport for NSW Key Issues for Assessment

Key Issues	How Addressed
General Requirements	
Details all daily and peak traffic and transport movements likely to be generated (light and heavy vehicle, public transport, pedestrian and cycle trips) during construction and operation of the development.	Refer to Section 6.6
Details of the current daily and peak hour vehicle, public transport, pedestrian and bicycle movements and existing traffic and transport facilities provided on the road network located adjacent to the proposed development.	Refer to Section 6.6

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

An assessment of the operation of existing and future transport networks including public transport, pedestrian and bicycle provisions and their ability to accommodate the forecast number of trips to and from the development.	Refer to Section 6.6
Details the type of heavy vehicles likely to be used (e.g. B-doubles) during the operation of the development and the impacts of heavy vehicles on nearby intersections.	Refer to Section 6.6
Details of access to, from and within the site to/from the local road and strategic (motorway) network including intersection location, design and sight distance (i.e. turning lanes, swept paths, sight distance requirements).	Refer to Section 6.6
Impact of the proposed development on existing and future public transport and walking and cycling infrastructure within and surrounding the site.	Refer to Section 6.3 & 6.6
An assessment of the existing and future performance of key intersections providing access to the site and any upgrades (road/intersections) required as a result of the development.	Refer to Section 6.6
An assessment of predicted impacts on road safety and the capacity of the road network to accommodate the development.	Refer to Section 6.6
Demonstrate the measures to be implemented to encourage employees of the development to make sustainable travel choices, including walking, cycling, public transport and car sharing.	Refer to Section 6.6
Appropriate provision, design and location of on-site bicycle parking, and how bicycle provision will be integrated with the existing bicycle network.	Refer to Section 6.6
Details of the proposed number of car parking spaces and compliance with appropriate parking codes and justify the level of car parking provided on the site.	Refer to Section 6.6
Details of access and parking arrangements for emergency vehicles.	Refer to Section 6.6
Detailed plans of the proposed layout of the internal road network and parking provision on-site in accordance with the relevant Australian Standards.	Refer to Section 6.6
The existing and proposed pedestrian and bicycle routes and end of trip facilities within the vicinity of and surrounding the site and to public transport facilities as well as measures to maintain road and personal safety in line with CPTED principles.	Refer to Section 6.3 & 6.6
Preparation of a draft Construction Traffic Management Plan which includes: ▪ details of vehicle routes, number of trucks, hours of operation, access management and traffic control measures for all stages of construction; ▪ assessment of cumulative impacts associated with other construction activities; ▪ an assessment of road safety at key intersections; ▪ details of anticipated peak hour and daily truck movements to and from the site; ▪ details of access arrangements for workers to/from the site, emergency vehicles and service vehicle movements; ▪ details of temporary cycling and pedestrian access during constructions; ▪ an assessment of traffic and transport impacts during construction and how these impacts will be mitigated for any associated traffic, pedestrians, cyclists and public transport operations.	Refer to Section 6.6

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Relevant policies and guidelines that could assist with the preparation of the Traffic and Transport Impact Assessment include: ▪ Guide to Traffic Generating Development (Roads and Maritime Services) ▪ Road Design Guide (Roads and Maritime Services) ▪ Austroads Guide to Traffic Management – Part 12: Traffic Impacts of Development ▪ Austroads Guidelines for Planning and Assessment of Road Freight Access in Industrial Areas ▪ Cycling Aspects of Austroads Guides ▪ Australia Standards AS2890.3 (Bicycle Parking Facilities) ▪ Integrated Public Transport Service Planning Guidelines: Sydney Metropolitan Area 2013 (TfNSW)	Refer to Section 6.6
The EIS should detail how the proposed development will be consistent and align with the objectives, goals and directions of the following: ▪ Greater Sydney Region Plan ▪ Western City District Plan ▪ Future Transport Strategy 2056 ▪ Future Transport – Greater Sydney Services and Infrastructure Plan ▪ NSW Freight & Ports Plan 2018-2023	Noted throughout the EIS.

Table 14: Sydney Water Key Issues for Assessment

Key Issues	How Addressed
General Requirements	
The proponent of development should determine service demands following servicing investigations and demonstrate that satisfactory arrangements for drinking water, wastewater, and recycled water (if required) services have been made.	Refer to Section 6.16
The proponent must obtain endorsement and/or approval from Sydney Water to ensure that the proposed development does not adversely impact on any existing water, wastewater or stormwater main, or other Sydney Water asset, including any easement or property. When determining landscaping options, the proponent should take into account that certain tree species can cause cracking or blockage of Sydney Water pipes and therefore should be avoided.	Refer to Section 6.16
Strict requirements for Sydney Water's stormwater assets (for certain types of development) may apply to this site. The proponent should ensure that satisfactory steps/measures been taken to protect existing stormwater assets, such as avoiding building over and/or adjacent to stormwater assets and building bridges over stormwater assets. The proponent should consider taking measures to minimise or eliminate potential flooding, degradation of water quality, and avoid adverse impacts on any heritage items, and create pipeline easements where required.	Refer to Section 6.16
The proponent should outline any sustainability initiatives that will minimise/reduce the demand for drinking water, including any alternative water supply and end uses of drinking and non-drinking water that may be proposed, and demonstrate water sensitive urban design (principles are used), and any water conservation measures that are likely to be proposed. This will	Refer to Section 6.16

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

allow Sydney Water to determine the impact of the proposed development on our existing services and required system capacity to service the development.	
--	--

Table 15: AusGrid Key Issues for Assessment

Key Issues	How Addressed
General Requirements	
Prepare an Infrastructure Management Plan in consultation with relevant agencies, detailing information on the existing capacity and any augmentation and easement requirements of the development for the provision of utilities including staging of infrastructure.	Refer to Section 6.16
Identify any potential impacts of the proposed construction and operation on the existing utility infrastructure and service provider assets and demonstrate how these will be protected or impacts mitigated.	Refer to Section 6.16

Table 16: Fire & Rescue NSW Key Issues for Assessment

Key Issues	How Addressed
General Requirements	
As additional details become available Fire & Rescue NSW requests to be consulted with respect to the proposed fire and life safety systems and their configuration at the project's preliminary and final design phases, particularly surrounding the on-site diesel storage (page 18).	Noted.
While there is currently no requirement for a fire safety study, FRNSW may request one be undertaken at a later stage should information be provided such it is deemed that the development poses unique challenges to the response to and management of an incident.	Noted.

Table 17: Department of Industry Key Issues for Assessment

Key Issues	How Addressed
General Requirements	
<u>DoI – Water and Natural Resources Access Regulator</u> ▪ The identification of an adequate and secure water supply for the life of the project. This includes confirmation that water can be sourced from an appropriately authorised and reliable supply. This is also to include an assessment of the current market depth where water entitlement is required to be purchased. ▪ A detailed and consolidated site water balance. ▪ Assessment of impacts on surface and ground water sources (both quality and quantity), related infrastructure, adjacent licensed water users, basic landholder rights, watercourses, riparian land, and groundwater dependent ecosystems, and measures proposed to reduce and mitigate these impacts. ▪ Proposed surface and groundwater monitoring activities and methodologies. ▪ Consideration of relevant legislation, policies and guidelines, including the NSW Aquifer Interference Policy (2012), the Guidelines for Controlled Activities on Waterfront Land (2018) and the relevant Water Sharing	Refer to Section 6.16

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Plans (available at https://www.industry.nsw.gov.au/water).	
DPI – Fisheries - The Lane Cove River is important key fish habitat within Sydney. DPI Fisheries recommends that the project is designed to: - Protect a minimum 40m wide vegetated riparian buffer zone from the top of bank of the river. - Reduce impacts to water quality during construction and from stormwater flows from the proposal. The use of water sensitive urban design measures as part of the proposal is recommended to treat and reduce the quantity of stormwater flows from this site. - Avoid or minimise the harm of marine vegetation. - Proposed measures to avoid the impact to aquatic habitat are to be clearly outlined in the environmental assessment. These are to include the use of best practice erosion and sediment control measures. - Any offsets for the loss of marine vegetation are to be undertaken in accordance with Section 3.3.3 of DPI Fisheries Policy and Guidelines for Fish Habitat Conservation and Management.	Refer to Section 6.5& 6.16

Table 18: NSW Environment Protection Authority (EPA) Key Issues for Assessment

Key Issues	How Addressed
General Requirements	
Under the terms of the notice, written approval from the EPA must be obtained to undertake works at the site, including: - The approval to disturb the site surface is limited to the works proposed by the consultants. - All persons undertaking excavation works at the site must undergo a safety induction prior to commencement of works. - Site security must ensure all access to the site by unauthorised personnel during the investigation works is prevented. - All excavated material and wastewater generated during the investigation works must be classified, handled, transported and disposed of offsite at a licensed facility that is authorised to accept the material in accordance with the Protection of the Environment Operations (Waste) Regulation 2014. - A report of the works undertaken is to be provided to the EPA of the completion of the works. The report must identify any issues encountered during the works, including all waste disposal certificates for the excavated material and certificates for any material received as imported fill used in site surface reinstatement. - Where conditions of approval differ from the scope of works outlined in the development proposal, then additional approval from the EPA is required.	Refer to Section 4.2.4

Table 19: City of Ryde Council Key Issues for Assessment

Key Issues	How Addressed
General Requirements	

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Council has a concern regarding potential glare caused from the building to the Magdala Park. Could you please request that the façade details are provided and ensure that it is non-reflective or not white or reflective material.

Refer to **Section 6.3** and **Appendix 8**.

5.2 STAKEHOLDER CONSULTATION

Table 10 in **Section 5.1** lists the stakeholders which were required to be consulted with as per the SEARs issued by the NSW DP&E. These include:

- Lane Cove Council;
- Environment Protection Authority;
- Ausgrid;
- Roads and Maritime Services;
- Transport for NSW;
- Department of Industry – Crown Lands and Water;
- Department of Primary Industries – Fisheries;
- Office of Environment and Heritage;
- Fire and Rescue NSW;
- Rural Fire Service;
- Sydney Water;
- City of Ryde Council;
- Surrounding local residents and stakeholders; and
- Any other public transport, utilities or community service providers.

Ongoing consultation has occurred to date, forming part of the overall community and stakeholder participation strategy. The matters discussed are summarised below (refer to **Table 20**) and discussed further in the Community Consultation Report (Willowtree Planning) found in **Appendix 33**, which have been collated in accordance with the requirements of the SEARs. The information provided hereunder demonstrates that legitimate consultation has taken place to ensure that all stakeholders are informed, and the Proposed Development is considered with respect to their requirements.

Furthermore, consultation with adjoining landowners was chosen based on the proximity (750 m radius) to the Proposed Development, as well as the potential visual impact of the Proposed Development on nearby premises. **Figure 20** accurately illustrates a polygon determining whom was engaged with.

Additionally, stakeholders and adjoining landowners were issued with consultation letters, which summarise the Proposed Development from an informative perspective, allowing for any questions or issues that arose, to be dealt with respectively in an according manner. **Table 21** below details which landowners were liaised with.

The consultation letters provided to relevant entities / stakeholders and adjoining landowners constituted a two (2) week turn around time for a response to be received from either an applicable agency and / or adjoining landowner. **Tables 20 & 21** below depict any responses received from various parties involved.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)



Figure 20 Proximity for which Landowners were Engaged for Consultation (NearMaps, 2018)

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Table 20: Consultation Record	
Stakeholder	Consultation Notes
Lane Cove Council	A Pre-DA (Pre-SEARs) Meeting was held at Lane Cove Council on 26 November 2018. Attendees included: Visitors: - Paul Slaven - Brendan Homer - Luke Puckeridge - Andrew Cowan - Dino Di Paolo - Andrew Owens Council Officers: - Henry Burnett (Senior Town Planner) - David Wilson (Manager Environmental Health) - Ted Webster (Manager – Open Space) - Jeff Culleton (Coordinator Bushland) - Maran Muthiah (Development Engineer) The matters discussed at the meeting are further detailed in Appendix 2 and considered throughout this EIS in further detail.
Roads and Maritime Services (RMS)	No formal responses have been received at the time of finalizing this EIS pursuant to a consultation letter issued 29 November 2018 (refer to Appendix E of Appendix 34); however, responses from RMS received as part of the SEARs (Table 13) are addressed accordingly throughout the contents of this EIS.
Transport for NSW (TfNSW)	No formal responses have been received at the time of finalizing this EIS pursuant to a consultation letter issued 29 November 2018 (refer to Appendix E of Appendix 34); however, responses from TfNSW received as part of the SEARs (Table 15) are addressed accordingly throughout the contents of this EIS.
Office of Environment & Heritage (OEH)	No formal responses have been received at the time of finalizing this EIS pursuant to a consultation letter issued 29 November 2018 (refer to Appendix E of Appendix 34); however, responses from OEH received as part of the SEARs (Table 12) are addressed accordingly throughout the contents of this EIS.
NSW Rural Fire Service (RFS)	No formal responses have been received at the time of finalising this EIS pursuant to a consultation letter 29 November 2018 (refer to Appendix E of Appendix 34).

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Fire and Rescue NSW	No formal responses have been received at the time of finalising this EIS pursuant to a consultation letter issued 29 November 2018 (refer to Appendix E of Appendix 34).
Endeavour Energy	No formal responses have been received at the time of finalising this EIS pursuant to a consultation letter issued 29 November 2018 (refer to Appendix E of Appendix 34).
Crown Lands	No formal responses have been received at the time of finalising this EIS pursuant to a consultation letter issued 29 November 2018 (refer to Appendix E of Appendix 34).
Department of Industry (DoI) – Water	No formal responses have been received at the time of finalising this EIS pursuant to a consultation letter issued 29 November 2018 (refer to Appendix E of Appendix 34).
NSW Aboriginal Land Council	No formal responses have been received at the time of finalising this EIS pursuant to a consultation letter issued 29 November 2018 (refer to Appendix E of Appendix 34).
NSW Environment Protection Authority (EPA)	No formal responses have been received at the time of finalizing this EIS pursuant to a consultation letter issued 29 November 2018 (refer to Appendix E of Appendix 34); however, responses from the EPA received as part of the SEARs (Table 18) are addressed accordingly throughout the contents of this EIS.

Table 21: Consultation Undertaken with Adjoining Landowners		
Address	Letter Box Drop	Contact Date
Epping Road		
63 Epping Road, Lane Cove West, NSW, 2066	YES	30/11/2018
150 Epping Road, Lane Cove West, NSW, 2066	YES	30/11/2018
160 Epping Road, Lane Cove West, NSW, 2066	YES	30/11/2018
166 Epping Road, Lane Cove West, NSW, 2066	YES	30/11/2018
170 Epping Road, Lane Cove West, NSW, 2066	YES	30/11/2018
Mowbray Road West		
694 Mowbray Road West, Lane Cove North, NSW, 2066	YES	30/11/2018
696 Mowbray Road West, Lane Cove North, NSW, 2066	YES	30/11/2018
698 Mowbray Road West, Lane Cove North, NSW, 2066	YES	30/11/2018
700-704 Mowbray Road West, Lane Cove North, NSW, 2066	YES	30/11/2018
706 Mowbray Road West, Lane Cove North, NSW, 2066	YES	30/11/2018
706a Mowbray Road West, Lane Cove North, NSW, 2066	YES	30/11/2018
Magdala Road		
14 Magdala Road, North Ryde, NSW, 2113	YES	30/11/2018
16 Magdala Road, North Ryde, NSW, 2113	YES	30/11/2018
18 Magdala Road, North Ryde, NSW, 2113	YES	30/11/2018

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

20 Magdala Road, North Ryde, NSW, 2113	YES	30/11/2018
47 Magdala Road, North Ryde, NSW, 2113	YES	30/11/2018
47a Magdala Road, North Ryde, NSW, 2113	YES	30/11/2018
49 Magdala Road, North Ryde, NSW, 2113	YES	30/11/2018
51 Magdala Road, North Ryde, NSW, 2113	YES	30/11/2018
53 Magdala Road, North Ryde, NSW, 2113	YES	30/11/2018
55 Magdala Road, North Ryde, NSW, 2113	YES	30/11/2018
57 Magdala Road, North Ryde, NSW, 2113	YES	30/11/2018
59 Magdala Road, North Ryde, NSW, 2113	YES	30/11/2018
61 Magdala Road, North Ryde, NSW, 2113	YES	30/11/2018
63 Magdala Road, North Ryde, NSW, 2113	YES	30/11/2018
65 Magdala Road, North Ryde, NSW, 2113	YES	30/11/2018
27-41 Magdala Road, North Ryde, NSW, 2113	YES	30/11/2018
Apollo Place		
1 Apollo Place, Lane Cove West, NSW, 2066	YES	30/11/2018
2 Apollo Place, Lane Cove West, NSW, 2066	YES	30/11/2018
3 Apollo Place, Lane Cove West, NSW, 2066	YES	30/11/2018
4 Apollo Place, Lane Cove West, NSW, 2066	YES	30/11/2018
5 Apollo Place, Lane Cove West, NSW, 2066	YES	30/11/2018
Sirius Road		
1a Sirius Road, Lane Cove West, NSW, 2066	YES	30/11/2018
2 Sirius Road, Lane Cove West, NSW, 2066	YES	30/11/2018
3 Sirius Road, Lane Cove West, NSW, 2066	YES	30/11/2018
7d Sirius Road, Lane Cove West, NSW, 2066	YES	30/11/2018
9 Sirius Road, Lane Cove West, NSW, 2066	YES	30/11/2018
11 Sirius Road, Lane Cove West, NSW, 2066	YES	30/11/2018
13 Sirius Road, Lane Cove West, NSW, 2066	YES	30/11/2018
15 Sirius Road, Lane Cove West, NSW, 2066	YES	30/11/2018
17 Sirius Road, Lane Cove West, NSW, 2066	YES	30/11/2018
19 Sirius Road, Lane Cove West, NSW, 2066	YES	30/11/2018
21 Sirius Road, Lane Cove West, NSW, 2066	YES	30/11/2018
23 Sirius Road, Lane Cove West, NSW, 2066	YES	30/11/2018

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

25 Sirius Road, Lane Cove West, NSW, 2066	YES	30/11/2018
27 Sirius Road, Lane Cove West, NSW, 2066	YES	30/11/2018
29 Sirius Road, Lane Cove West, NSW, 2066	YES	30/11/2018
31-33 Sirius Road, Lane Cove West, NSW, 2066	YES	30/11/2018
Mars Road		
12 Mars Road, Lane Cove West, NSW, 2066	YES	30/11/2018
14 Mars Road, Lane Cove West, NSW, 2066	YES	30/11/2018
16 Mars Road, Lane Cove West, NSW, 2066	YES	30/11/2018
19 Mars Road, Lane Cove West, NSW, 2066	YES	30/11/2018
20 Mars Road, Lane Cove West, NSW, 2066	YES	30/11/2018
21 Mars Road, Lane Cove West, NSW, 2066	YES	30/11/2018
23 Mars Road, Lane Cove West, NSW, 2066	YES	30/11/2018
23a Mars Road, Lane Cove West, NSW, 2066	YES	30/11/2018
27 Mars Road, Lane Cove West, NSW, 2066	YES	30/11/2018
67 Mars Road, Lane Cove West, NSW, 2066	YES	30/11/2018
77 Mars Road, Lane Cove West, NSW, 2066	YES	30/11/2018
79-85 Mars Road, Lane Cove West, NSW, 2066	YES	30/11/2018
87 Mars Road, Lane Cove West, NSW, 2066	YES	30/11/2018
91 Mars Road, Lane Cove West, NSW, 2066	YES	30/11/2018
Orion Road		
5 Orion Road, Lane Cove West, NSW, 2066	YES	30/11/2018
5-7 Orion Road, Lane Cove West, NSW, 2066	YES	30/11/2018
9 Orion Road, Lane Cove West, NSW, 2066	YES	30/11/2018
11-13 Orion Road, Lane Cove West, NSW, 2066	YES	30/11/2018
15 Orion Road, Lane Cove West, NSW, 2066	YES	30/11/2018
17-19 Orion Road, Lane Cove West, NSW, 2066	YES	30/11/2018
Chaplin Drive		
1 Chaplin Drive, Lane Cove West, NSW, 2066	YES	30/11/2018
1a Chaplin Drive, Lane Cove West, NSW, 2066	YES	30/11/2018
2 Chaplin Drive, Lane Cove West, NSW, 2066	YES	30/11/2018
3 Chaplin Drive, Lane Cove West, NSW, 2066	YES	30/11/2018
4-6 Chaplin Drive, Lane Cove West, NSW, 2066	YES	30/11/2018

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

5 Chaplin Drive, Lane Cove West, NSW, 2066	YES	30/11/2018
7 Chaplin Drive, Lane Cove West, NSW, 2066	YES	30/11/2018
8 Chaplin Drive, Lane Cove West, NSW, 2066	YES	30/11/2018
9-11 Chaplin Drive, Lane Cove West, NSW, 2066	YES	30/11/2018
12 Chaplin Drive, Lane Cove West, NSW, 2066	YES	30/11/2018
13 Chaplin Drive, Lane Cove West, NSW, 2066	YES	30/11/2018
15-17 Chaplin Drive, Lane Cove West, NSW, 2066	YES	30/11/2018
19 Chaplin Drive, Lane Cove West, NSW, 2066	YES	30/11/2018
21 Chaplin Drive, Lane Cove West, NSW, 2066	YES	30/11/2018
23-27 Chaplin Drive, Lane Cove West, NSW, 2066	YES	30/11/2018
29 Chaplin Drive, Lane Cove West, NSW, 2066	YES	30/11/2018
31-33 Chaplin Drive, Lane Cove West, NSW, 2066	YES	30/11/2018

PART F ENVIRONMENTAL RISK ASSESSMENT

6.1 SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS

The SEARs were issued on 21 December 2018. The Key Issues include:

- Strategic Context;
- Urban Design and Visual;
- Suitability of the Site;
- Community and Stakeholder Engagement;
- Soils and Water;
- Traffic and Transport;
- Noise and Vibration;
- Contamination;
- Heritage;
- Waste;
- Air Quality;
- Hazards and Risks;
- Bushfire;
- Socio-Economic Impacts; and,
- Biodiversity.

The above matters are satisfactorily addressed in the sections detailed below.

6.2 STRATEGIC & STATUTORY CONTEXT

Sections 2.3 and **4.2** above have previously considered the Proposed Development's strategic and statutory context.

Furthermore, the Proposed Development, for the purposes of Data Centre is considered consistent with the intended development of industrial land within the Lane Cove LGA. The Proposed Development would enable the efficient and sustainable use of such designated industrial land via adherence to the provisions, and overarching aims, and objectives set out within LCLEP2009 that allows for the construction and operation of Data Centres. The Proposed Development would beneficially contribute to the regional and local economies, and population groups positioned in the wider locality.

The Proposed Development is considered compatible with surrounding industrial land uses (southern and eastern interfaces), including warehouses and industrial facilities alike, that are designated for such employment-generating land uses of similar and parallel nature within the Lane Cove West Business Park. The Subject Site is not located in proximity of any residential development (~550 m west along Pittwater Road, East Ryde) or other sensitive land uses; therefore, would not exhibit any adverse environment or amenity impacts. It is noted, that to the north of the Site there is identified bushfire prone land and ecological communities for which are further analysed in the respective consultant reports in **Sections 6.11 & 6.15** of this EIS. Accordingly, any recommendations drawn from these reports would be adopted and adhered to.

The proposed site layout and building design would ensure the functional operation of the Data Centre in accordance with the needs of the end user, whilst not impacting on any other operations. Similarly, the Site and built-form have been designed in respect of the planned / existing road infrastructure, noting its direct linkages to the wider regional road network, including the M2 Motorway and Epping Road.

As mentioned above, the Proposed Development would not exhibit any significant environmental impacts and would not adversely impact on the amenity or operations of any

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

adjoining sites within close proximity to the Subject Site. Therefore, the Proposed Development would be considered compatible with the Site's strategic and statutory context.

6.3 URBAN DESIGN AND VISUAL

This part of the EIS takes into account the SEARs, specifically addressing the Urban Design and Visual assessment items.

The layout and design of site features and built form have been considered in terms of the visual amenity of the Proposed Development, with respect to the broader area in order to facilitate a positive visual outcome. Specifically, the visual impact of the proposal is informed by the following:

Site Layout including Landscaping

The proposed site layout has been designed to ensure the efficient use of the land and the functionality of the proposed Data Centre meets the operational requirements of the end-user. The overall site layout is configured in a sense, to provide fluid access to and from the facilities provided on-site, whilst offering a sense of safety and continuity concerning circulation of vehicle and pedestrian movement on-site.

The precise siting of the various structures and hardstand areas of the Site including buildings, offices, loading docks, car parks and landscaping, has been strategically coordinated to provide a functional layout and coherent visual outcome. Where feasible offices have been positioned and orientated to address the street frontage and loading docks located away from the street frontage.

Soft landscaping around the perimeter of the Site and in the building separation zones would soften the appearance of the built form and contribute to an attractive streetscape characterised by native vegetation planting and green verges. Vegetation planting would provide a natural buffer between the Site and surrounding allotments to define the separate buildings and ensure views to and from the Site take in high quality landscaping. Additionally, setbacks allow for landscape buffer planting to help screen the Proposed Development and integrate the Site within its broader environment.

The Subject Site contains access from Sirius Road to identified car parking areas and applicable loading docks for the proposed Data Centre. This has been designed in accordance with Australian Standards.

To comply with the LCDCP2009, bushfire requirements and the VMP, the landscaping design aims to provide the following:

- Adhering to the bushfire requirements as set out in the Bushfire Report (refer to **Section 6.15 & Appendix 27**);
- Adhering to the VMP requirements as set out by Travers Ecology;
- Preservation and retention of existing trees where possible on the advice of the project Arborist;
- Strengthen the local character with the use of local indigenous species. These are to be selected predominantly from the LCDCP2009;
- Provision of 10% of the Site for Landscape Amenity for workers;
- Provision of 33% Landscape Area;
- To help screen and filter views of the development for users of the adjacent bushland and visual receptors within the wider context with tree and shrub planting.

The following aspects have been designed accordingly as follows:

North

Turf is intended to be regularly mowed to a height of 40 mm so that workers can sit and enjoy breaks. Park shelters and seating are also proposed to provide additional shade amenity and passive relaxation. Planting of indigenous trees and shrubs and groundcovers are proposed as per the VMP to complement the existing backdrop of adjoining bushland. Furthermore, a 4 m fire trail is required to comply with RFS requirements. This is proposed to be a reinforced grid structure with seeding over the top and is to be regularly maintained to prevent windborne seeds taking root.

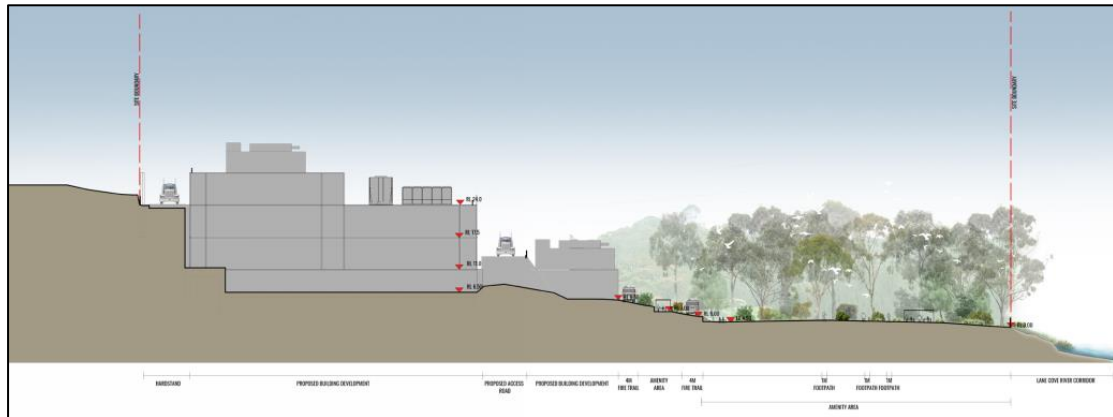


Figure 21 North and South Section of the Proposed Development (Source: Geoscapes, 2018)

East and West

An indigenous seed mix of local grasses is proposed to help prevent soil erosion and enable regular slashing / mowing to a height of 100 mm. Existing trees are retained where possible and additional planting is provided in the form of scattered trees and shrubs. Smooth barked species and evergreen trees and shrubs are preferred.

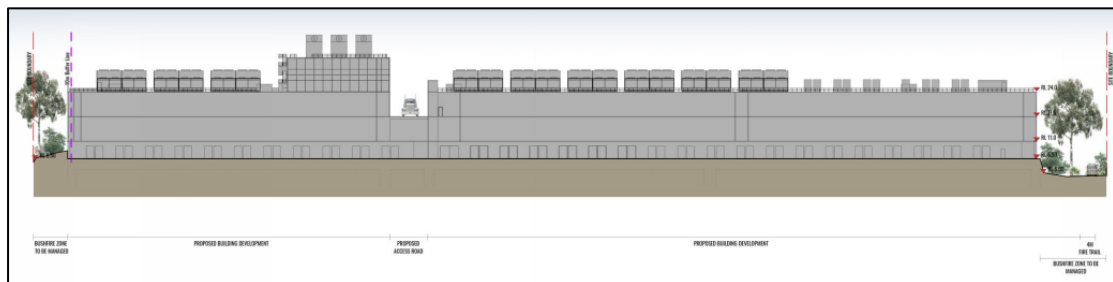


Figure 22 East and West Section of the Proposed Development (Source: Geoscapes, 2018)

South

This area contains the entry approach from Sirius Road. On the eastern side, existing landscaping associated with the Harley Davidson development is proposed to be retained. On the western side, landscape areas exist along the verge and have also been incorporated between the proposed retaining wall and the adjoining development. Native trees, shrubs and mass planted groundcovers have been proposed in these areas.

Furthermore, the proposed landscape design will create an indigenous rich environment that will be cohesive with the natural character of the Lane Cove River corridor and bushland. It will also help to mitigate the Proposed Development from visual receptors by filtering views through

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

vegetation. This will be especially important for those receptors in close proximity to the Proposed Development, whilst still complying with the specific bushfire and VMP requirements. A low maintenance and low water use approach is to be adopted across the landscape design.

The Landscape Plan and Landscape Design Report are annexed to this EIS at **Appendix 6 & 7** of this EIS, which include a range of endemic and exotic species selections creating an indigenous rich environment, as mentioned above. It is considered that the species selected are suitable for the soil and climatic conditions and would therefore serve the intended purpose addressing the landscaping aims as addressed above.

Design of Built Form

The proposed built form incorporates high quality design and fabric to ensure a positive visual outcome and sustainable development.

The bulk and scale of the proposed built form is typical of similar industrial developments throughout the Lane Cove West Business Park and is therefore considered highly appropriate for the Site. The proposed Data Centre buildings would exhibit a consistent design, which would be considered transitional and complementary given the context of the broader area in direct proximity of the Site.

The positioning of the built-form is considered transitional to the adjoining industrial premises surrounding the Subject Site, which allows the proposed height of the Proposed Development to be broken down accordingly via the gradual transition that would be experienced with regard to height. Proposed planting along Sirius Road and the northern boundary would help create another buffer level to help conceal and reduce the scale of the Proposed Development furthermore.

The proposed building bulk and scale would not cause any undesirable visual impact, view obstruction, privacy intrusion or loss of solar access owing to the provision of adequate setbacks, building separation and deep-soil landscaping. It is noted that the Data Centre would ascertain a height of approximately 24.0 m (forming a non-compliance with Clause 4.3 of LCLEP2009); however, the pertained height in contrast to the overall site area would be further justified by the architecturally pleasing design, maintaining the aesthetic quality of the Lane Cove West Business Park, achieving a gradual transition between buildings surrounding the Subject Site, whilst not impinging and compromising any existing views and vistas.

The proposed development would be expressed in simple volumetric forms, which would display the functional aspect of the Site operations, reflecting flexibility for any future expansion intended. The hardstand zone is located at the southern aspect of the Subject Site, which serves a function of accommodating parking and any deliveries.

The proposed site layout has been designed to address the street frontage through the positioning and orientation of offices at the forefront of the Site where feasible. This would provide additional façade articulation as-well-as opportunities for passive surveillance of the street and car park in accordance with the principles of CPTED. To a similar effect loading and service areas have been located away from the street frontage and naturally screened by vegetation to mitigate an adverse visual impact.

Additionally, the functionality of building type is architecturally articulated through language of simple contrast, with the solid volume of data storage space fronting the corner of Sirius Road and the adjoining industrial developments along the southern and eastern interfaces. Façade articulation is incorporated in building design through a complementary variety of materials, colours design features and openings, which would create visual interest and prevent the presentation of large expanses of blank wall with positive connotations for views towards the Site.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Height, Scale, Materials and Colours

The Proposed Development considered six (6) varied schemes (refer to **Appendix 36**) prior to deciding on the proposed Masterplan for the Subject Site. It is important to note, that all of the schemes drafted, formed non-compliances (particularly regarding height). The preferred scheme was 'Scheme 6', which the final design, represented in the Architectural Plans (refer to **Appendix 5**) has been designed with similarities drawn.

Further reinforcing the Landscape Design Report (refer to **Appendix 7**), the *Landscape and Visual Impact Assessment Report* (Geoscapes, 2018) considers the potential visual impact on visual receptors that were perceived to potentially have the highest sensitivity to the Proposed Development (refer to **Appendix 8**). These visual receptors include:

- Lane Cove Bush Walk, Lane Cove West (VP1);
- Arise Meriton, Lane Cove West (VP2); and,
- Lane Cove Valley Walk, Lane Cove North (VP3).

Receptors which are regarded to have less sensitivity but have also been assessed are:

- Magdala Park, North Ryde (VP4);
- Honeywell Office, North Ryde (VP5);
- Ryde Gardens (VP6);
- 44 Cox Road, East Ryde (VP7);
- 282 Pittwater Road, East Ryde (VP8); and,
- 102 Melba Drive, East Ryde (VP9).

It is important to note, that immediately adjacent to the east of the Proposed Development include several commercial and industrial buildings that are identified at higher topographical elevations than the Site, for which the Proposed Development would be screened by these existing developments. Furthermore, significant vegetation along either side of the Lane Cove River to the north, west and south is also present, which provides screening for many potential visual receivers.



Figure 23 Viewpoint Locations (Source: Geoscapes, 2018)

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)



Figure 24 On-Site at Eye Level (Position 1) Looking North (Source: Geoscapes, 2018)



Figure 25 On-Site at Eye Level (Position 1) Looking West (Source: Geoscapes, 2018)



Figure 26 On-Site at Eye Level (Position 1) Looking South (Source: Geoscapes, 2018)

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)



Figure 27 On-Site at Eye Level (Position 2) Looking North (Source: Geoscapes, 2018)

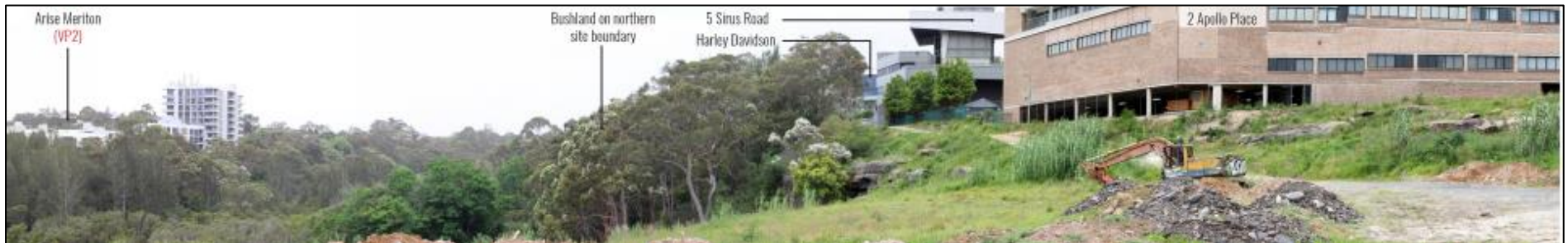


Figure 28 On-Site at Eye Level (Position 2) Looking East (Source: Geoscapes, 2018)



Figure 29 On-Site at Eye Level (Position 2) Looking South (Source: Geoscapes, 2018)

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)



Figure 30 On-Site at Eye Level (Position 2) Looking West (Source: Geoscapes, 2018)



Figure 31 Drone at 40 m RL (Position 1) Looking North (Source: Geoscapes, 2018)

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)



Figure 32 Drone at 40 m RL (Position 1) Looking East (Source: Geoscapes, 2018)



Figure 33 Drone at 40 m RL (Position 1) Looking South (Source: Geoscapes, 2018)

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

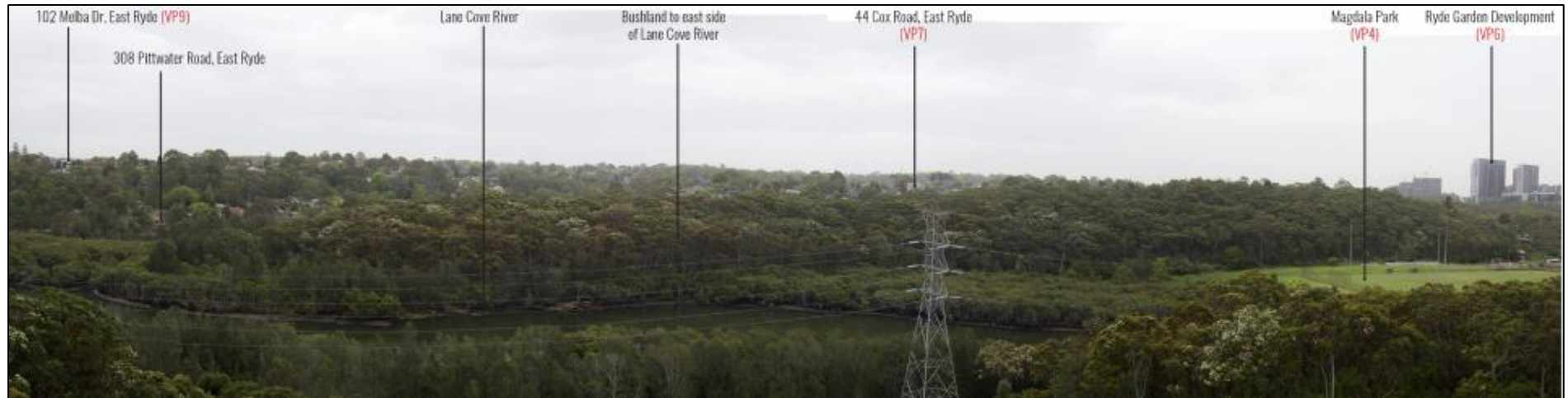


Figure 34 Drone at 40 m RL (Position 1) Looking West (Source: Geoscapes, 2018)

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

The Proposed Development has been designed to work with the natural topography of the Site. By setting the Proposed Development down into the Subject Site, this ensures that the maximum height of built elements does not protrude higher than the adjacent existing building of 1 Apollo Place. 1 Apollo Place has a roof height of 39 m AHD and other similar types of building further to the southeast are taller.

Additionally, the colours, materials and finishes have been selected to consider the surrounding bushland in which the Proposed Development will be situated. Building facades contain four (4) colours

As previously suggested, many tall canopy trees would be planted within all designated landscape areas. Almost all planting within the development is proposed to be native with a substantial proportion of endemic species too, creating an indigenous rich environment. This would ultimately increase the vegetated area and surrounds of the Site from the existing condition and further complement the densely populated vegetative zones adjoining the Subject Site to the north.

The design concept for the Proposed Development was based on a vision to provide quality functional building design solutions, that respond to the Site and wider surroundings accordingly, by providing a flexible working environment appropriate for end users and visitors alike, relevant to the current nature of industrial development practices.

As mentioned in **Section 3.5** of this EIS, the Subject Site was chosen as it would be able to accommodate the Proposed Development both commercially and from an operational standpoint.

Land Use Conflict

The Subject Site is located within Lane Cove West Business Park, which comprises a versatile range of industrial land uses pursuant to its IN2 Light Industrial zoning. Accordingly, the Site context may be described as part of an employment-generating industrial precinct (Lane Cove West Business Park), which the proposed Data Centre would positively contribute to. Given the existing industrial character of the Site's surrounds, no land use conflict is expected to occur.

There are a range of land uses which surround the Subject Site, all of which have been given due consideration in the design of the Subject Site. Of particular relevance, the following land uses are noted within the vicinity of the Site:

- **East** – Lane Cove West Business Park, which contains various industrial-related developments of similar nature and scale to that of the Proposed Development. Due consideration has been given to this area; hence, the Subject Site being chosen based on its compatibility with the surrounding land uses.

Further to the east include other residential and educational (Lane Cove West Public School) land uses. It is considered that the separation distance between the Subject Site and the above land uses would be sufficient to ensure there would not be any unacceptable, visual, noise, air or traffic impacts.

- **North** – Comprises bushland identified as bushfire prone land. The Subject Site would retain identified bushland where possible, as well as integrate an aesthetically pleasing architectural landscaped design.
- **South** – Contains various industrial-related developments of similar nature and scale to that of the Proposed Development. The southern interface is reflective to that of the eastern interface providing a gradual transition of industrial development towards the Subject Site.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

- **West** – Comprises bushland identified as bushfire prone land. The Subject Site would retain identified bushland where possible, as well as integrate an aesthetically pleasing architectural landscaped design. Additionally, further west comprises the Lane Cove River, which is identified as a 'Coastal Wetland' under the Coastal Management SEPP. The Proposed Development would not compromise the identified land portion in any way, for which a controlled activity approval would be required. Notwithstanding, the Proposed Development would incorporate mitigation measures (where considered necessary) in the form of an erosion and sediment control plan to limit any potential runoff from occurring.

In terms of the public domain, Sirius Road and Apollo Place (and potentially driving along Epping Road) are the main vantage points which afford a direct view to the Site. These roads presently have limited capacity for pedestrian movement and experience relatively low traffic volumes (besides Epping Road). Vehicles passing the Site would afford a direct view of the proposed Data Centre; however, given the proposed architectural articulation and deep soil landscaping, the visual impact would be considered acceptable.

It is noted, that in the Noise Impact Assessment (**Appendix 19**), the following recommendations must be adhered to accordingly prior to the issuance of a Construction Certificate (refer to **Table 22** below), including:

Table 22: Indicative Noise Mitigation Measures		
Item	Location	Attenuation Details
Water-cooled Chillers	Enclosure	Enclosure achieving 15-20 dB noise level reduction.
Cooling Towers	Intake / discharge / equipment reselection	A collective noise level reduction of 25-30 dB is required which is likely to require a reselection of the cooling tower type along with intake/discharge attenuators.
Diesel Generators (backup power only)	Inlet / Discharge	Gensets recommended to be specified with a maximum emission of 72 dB(A) @ 1m. Discussed further below.
	Exhaust	
	Enclosure	
Building Envelope	Walls	Precast concrete ~150 mm Doors may need to be acoustically rated dependant on location.
	Roof	Recommend concrete ~150 mm.
Transformers	Enclosure	Enclosure achieving 10-15 dB noise level reduction.

The Visual Impact Assessment (refer to **Appendix 8**) concludes, that the Proposed Development will create visual impacts for several user groups that are in close proximity to the Proposed Development site. The following residential locations are judged to receive moderate¹ visual impacts from the proposed Data Centre. These include:

- Lane Cove Bush Walk, Lane Cove West (VP1);
- Arise Meriton, Lane Cove West (VP2);
- Lane Cove Valley Walk Bridge (VP3).

The following locations are judged to have moderate minor impacts:

- 282 Pittwater Road, East Ryde (VP8);
- 102 Melba Drive, East Ryde (VP9).

¹ The sensitivity of the location is combined with the predicted magnitude of change to determine the level of effect on any particular receptor (Geoscapes, 2018).

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

The following locations are judged to have minor visual impacts:

- Magdala Park, North Ryde (VP4);

The following locations are judged to have minor negligible visual impacts:

- Honeywell Office (VP5);
- Ryde Gardens, North Ryde (VP6).

The following locations are judged to have negligible visual impacts:

- 44 Cox Road, East Ryde (VP7).

The locations with moderate visual impacts anticipated are based on their proximity to residential properties or locations to the Site and the extent of the view being affected. Overall it is judged that the architectural design and treatment of the Proposed Development considers the surrounding context (including land use) and landscape.

Geotechnical Assessment

It is noted from the Phase 2 Investigation (Senversa), that at least some of the contaminated material has been recommended for removal offsite as part of the works; however, the removal of the material within the footprint of the building is not required from a geotechnical perspective, as confirmed in the Geotechnical Report undertaken by Douglas Partners (refer to **Appendix 12**).

The geotechnical issues considered relevant to the proposed development include excavation and associated vibration, stress relief, excavation support, earthworks, groundwater, settlement, foundations and earthquake provisions. These issues are discussed further below in **Section 6.5** of this EIS.

Development Control Plan

It is noted, that Development Controls Plans do not apply to SSDAs under the SRD SEPP. Notwithstanding, the LCDCP2009 is addressed in **Section 4.4.3** and **Appendix 35**, having regard to the specific controls which apply to the Subject Site, and the level of compliance achieved with regard to the proposed development. As noted in **Section 4.4.2 & 4.4.3**, there are no numerical non-compliances with the proposed development – despite the increased height, which has been strategically justified (refer to Clause 4.6 Variation in **Appendix 34**); therefore, the subject scheme is considered consistent with the objectives of the DCP which are:

- *Provide detailed planning provisions supplementing the Lane Cove LEP 2009.*
- *Support the locality's sustainability in environmental, social and economic terms.*
- *Conserve, protect and enhance the environmental and built heritage of Lane Cove.*
- *Contribute to effective management of biodiversity.*
- *To protect the quality of water catchments, encourage the use of water sensitive urban design and promote the adoption of whole of water cycle management principles.*
- *Minimise any impacts of transition to higher residential and employment density zones.*
- *Minimise any impacts of the redevelopment of uses not conforming to the zone they are in, by having regard to the scale and character of the surrounding neighbourhood.*
- *Balance individual and community interests to preserve and, where appropriate, improve the existing character and amenity of the municipality.*
- *Enhance the visual quality and functionality of the public and private domain interrelationship.*

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

- *Achieve an overall character for neighbourhoods that enhance s their sense of identity and place.*
- *Provide a context for the economic vitality of centres.*
- *To promote use of public transport, walking and cycling as the main forms of access, particularly within commercial centres.*
- *Regulate the visual impact of all development within foreshore areas.*
- *Further the goal of equal access for all residents and visitors.*
- *Enhance opportunities for cultural experiences throughout the natural and built environment by promoting public art.*

Surrounding Vehicular, Pedestrian and Cycling Networks

The Subject Site is well serviced by the bus network, for which the existing services are shown in **Figure 35** below.



Figure 35 Public Transport Services (Source: ARUP, 2018)

Additionally, the Subject Site can be accessed by cyclists from the north (via Epping Road) connecting to Mars Road. Dedicated bicycle lanes are provided on both Epping Road and Mars Road, which provide safe and convenient access from the Subject Site through to the surrounding area (refer to **Figure 36** below). Furthermore, the Lane Cove Bicycle Plan has also been included for reference (refer to **Figure 37** below).

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

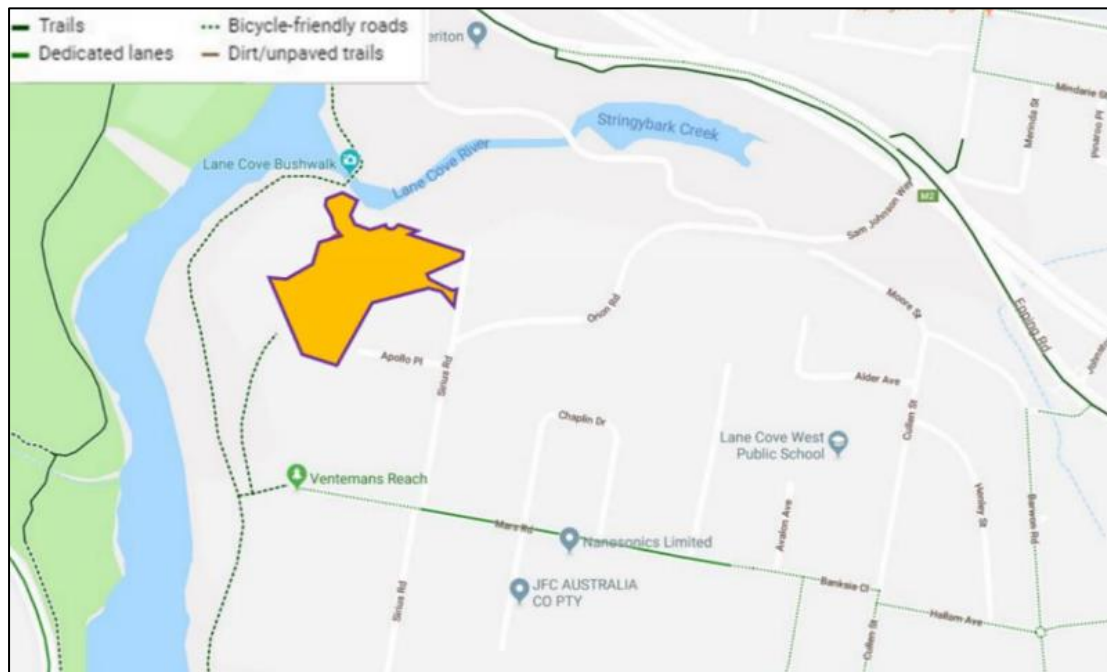


Figure 36 Existing Cycle Infrastructure (Source: ARUP, 2018)



Figure 37 Lane Cove Bicycle Plan with the Proposed Bicycle Network (Source: ARUP, 2018)

Signage

Signage would not form a large or dominate component of the Proposed Development. Any signs would be subtle and would not be visually obtrusive in any such way. Additionally, any signage would most likely represent the style of other signage within the area.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Lighting

Lighting would be provided with a combination of light poles and building mounted lighting around the Site for on-site security and safety. Lighting would be strategically positioned to shine inward towards the Proposed Development to minimise any anticipated light spillage onto adjoining properties. The layout of the buildings, internal roads and loading areas would ensure that neighbouring properties would not be affected by light spillage.

Additionally, lighting would be restricted to allow access at night, for which this would comprise general lighting to the identified car parking areas and entry points to the Data Centre building.

6.4 SAFETY, SECURITY AND CRIME PREVENTION

The principles of Crime Prevention Through Environmental Design (CPTED) have been considered in the design of the proposed development.

The CPTED guidelines were prepared by the NSW Police in conjunction with NSW DP&E. CPTED provides a clear approach to crime prevention and focuses on the 'planning, design and structure of cities and neighbourhoods'. The main aim of the policy is to:

- Limit opportunities for crime;
- Manage space to create a safe environment through common ownership and encouraging the general public to become active guardians; and,
- Increase the perceived risk involved in committing crime.

The guidelines provide four (4) key principles to limit crime, including:

- Natural Surveillance;
- Access Control;
- Territorial Reinforcement; and,
- Space Management.

Principle 1 – Surveillance:

The attractiveness of crime targets can be reduced by providing opportunities for effective surveillance, both natural and technical.

- The proposed development would orientate active areas such as the ancillary offices and building entrances towards surrounding roads, pedestrian paths, car parking areas and deep-soil landscaping;
- The proposed development would utilise low lying landscaping in appropriate locations to ensure there would be no obstruction of surveillance opportunities; and,
- External lighting would enable the maintenance of sight-lines and surveillance after dark.

Principle 2 – Access Control

Access Control can be defined as physical and symbolic barriers that are used to 'attract, channel or restrict the movement of people'.

- The Site would be secured by perimeter fencing and access gates to deter unauthorised access to the Site; and,
- Directional signage to heavy vehicle, car parking, pedestrian paths and building entries would define the various areas of the Site, providing legibility and minimising vehicular and pedestrian conflict with the Site.

Principle 3 – Territorial Reinforcement

Territorial Reinforcement can be described as creating a sense of ownership to a public space or vicinity, encouraging the usage of that space. By increasing usage capability, this also deters crimes and further increases the chances of a crime being witnessed and reported in a timely manner.

- The provision of security-controlled entrances to the Site and proposed Data Centre would emphasise the separation between the private and public domain; and,
- Well maintained landscape design would indicate the proposed development is well-used and cared for to reduce criminal activity.

Principle 4 – Space Management

Space Management is intuitive of Principle 3 – Territorial Reinforcement – and, refers to ensuring a space is utilised and cared for appropriately.

- On the ground level, pathways and planters would be well maintained by a landscape contractor. Continued repairs and maintenance would discourage vandalism; and,
- High quality materials, varied façade treatments and landscaping along boundaries would assist in discouraging vandalism and graffiti.

The proposed development would successfully integrate the four (4) principles outlined to limit crime outlined in the CPTED guidelines, which are adopted into the PDCP2014.

6.5 SOILS AND WATER

The *Water Quality Report* (Van Der Meer, 2018) considers the water quality requirement for the Subject Site as well as investigating appropriate stormwater management strategies for the Subject Site in accordance with Council's requirements (refer to **Appendix 9-11**).

The following information and documents were utilised for the investigation undertaken, including:

- Sydney Water – Stormwater Quality Target 2016;
- Detailed Site Survey Plans;
- Architectural Plans defining the proposed works and existing infrastructure; and,
- LCDCP2009 – Part O: Stormwater Management.

Stormwater Quality Control

Sydney Water has a water quality target set before the stormwater runoff enters any Sydney Water asset or natural waterway. The site-specific water quality targets are outlined in **Table 23** below.

Table 23: COS Pollution Reduction Targets	
Pollutant	Reduction Target
Total Suspended Solids (kg/yr)	85% reduction of the annual load
Total Phosphorus (kg/yr)	60% reduction of the annual load
Total Nitrogen (kg/yr)	45% reduction of the annual load
Gross Pollutants (kg/yr)	90% reduction of the annual load

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Erosion & Sediment Control

- During construction, water quality control is achieved by deposition and trapping of silt clays, which often has nutrients such as phosphorus and nitrogen attached to their surfaces. Silt fences will be erected prior to construction to control sediment runoff. This will reduce and isolate sediments and particulate matter.
- An Erosion and Sediment Control Plan has been provided in accordance with LCDCP2009 and within Landcom's "Managing Urban Stormwater – Soils and Construction (2004). This will ensure that a significant portion of sediments and attached nutrients can be contained on-site during construction (refer to **Appendix 9**).

CDC Separator

- Is a device to contain and retain gross pollutants, litter, sediments and associated oils using energy of the inflow to create a vortex flow regime within the CDS screening chamber. A single CDS 1012 (or approved equivalent) will be used at the Site discharge point.

EnviroPod 200

- EnviroPod 200 filters will be placed at all proposed surface inlet pits within the Proposed Development to assist in concentrating suspended solids into particulate sizes for removal.

Rainwater Tank

- One (1) 100 kL rainwater tank will be placed at the proposed location within the Subject Site. Accordingly, MUSIC modelling predicts a reduction in predicted flow by approximately 48%.

Table 24 below shows the calculated mean annual pollutant loads for the proposed site conditions before and after the implementation of the treatment devices.

Table 24: Summary of Treatment Train				
	Total Suspended Solids (kg/yr)	Total Phosphorus (kg/yr)	Total Nitrogen (kg/yr)	Gross Pollutants (kg/yr)
Pre-Treatment	2,720	5.76	40.5	494
Post-Treatment	275	2.22	19.1	1.87

The Sydney Water Stormwater Quality Target 2016 outlines the requirements for the reduction of pollutants from stormwater before it can be discharged from the Site. These targets are listed in **Table 25** below together with the percentage pollution reduction that will be achieved by the proposed treatment train.

Table 25: Comparison of Pollutant Reduction Target vs. Achieved			
Pollutant	Reduction Target		
Total Suspended Solids (kg/yr)	85%	89.9%	YES
Total Phosphorus (kg/yr)	60%	61.5%	YES
Total Nitrogen (kg/yr)	45%	52.7%	YES
Gross Pollutants (kg/yr)	90%	99.6%	YES

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

By implementing the proposed treatment train measures as part of the Proposed Development, there would be no detrimental effect on the quality of stormwater running off from the Subject Site.

Notwithstanding, the key strategies to be adopted as part of the Proposed Development include:

- A pit and pipe network to collect minor stormwater runoff from surface areas, which will minimise nuisance flooding;
- EnviroPods at nominated inlet pits will form part of the water quality treatment train, removing pollutants and nutrients that are detrimental to downstream waterways;
- CDS Separator to treat stormwater runoff before discharging into the downstream waterways;
- One (1) 100 kL rainwater tank will be used to collect stormwater runoff from roofs and could be used for reapplication purposes such as landscaping; and,
- Two (2) Jellyfish will be used in the proposed location.

Accordingly, the Proposed Development, with the proposed Water Sensitive Urban Design (WSUD) strategy and management can provide a safe and ecologically sustainable environment. Furthermore, the Proposed Development and the proposed water quality treatment devices comply with Council's and Sydney Water's requirements.

Flooding

In the *Flood Report* prepared by GRC Hydro (refer to **Appendix 10**) a WBNM model was developed in order to generate catchment flows from applied rainfall. Resultant flows were then applied to the Site TUFLOW model. Critical duration for Stringybark Creek analysis was undertaken in the WBNM model to determine the storm duration responsible for 1% AEP and PMF events peak flood levels in the catchment. The results of critical durations were two (2) hours for 1% AEP (assume for 0.5% AEP event) and one (1) hour for PMF.

The flood levels at the four (4) reported points are shown in **Table 26** below.

Table 26: Flood Levels in Critical Durations for Each Event				
	Point 1 Flood Level (m AHD)	Point 2 Flood Level (m AHD)	Point 3 Flood Level (m AHD)	Point 4 Flood Level (m AHD)
1% AEP	2.6	2.5	2.5	2.4
0.5% AEP	2.7	2.5	2.5	2.4
PMF	5.6	5.5	5.4	5.2

The results indicate that:

- Flood levels in the relevant reach of Stringybark Creek pertain more to the Lane Cove River water level than they do the flow generated by the catchment; and,
- TO be flood free, buildings would be set at a level no lower than ~5.4 m AHD.

The 1% AEP peak flood levels at four (4) critical points have been obtained from the TUFLOW model results, shown in **Table 27** below.

Table 27: Flood Levels in Critical Durations for Each Event				
	Point 1 Flood Level for 1% AEP (m AHD)	Point 2 Flood Level for 1% AEP (m AHD)	Point 3 Flood Level for 1% AEP (m AHD)	Point 4 Flood Level for 1% AEP (m AHD)

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Tailwater Level for 20 year ARI event (1.38 m AHD)	2.1	1.8	1.8	1.4
Tailwater Level for 100 year ARI event (2.35 m AHD)	2.5	2.4	2.4	2.4
Tailwater Level for PMF event (4.3 m AHD)	5.0	5.1	5.0	4.8

Based on the flood modelling undertaken, the following mainstream flood levels apply to the Site (or surrounds):

- 1% AEP – 2.5 m AHD;
- 0.5% AEP – 2.5 m AHD;
- PMF – 5.4 m AHD.

As the lowest proposed building level is 11 m AHD, it is reasonable to suggest that the Proposed Development is unaffected by flooding.

Geotechnical

It is noted from the Phase 2 Investigation (Senversa), that at least some of the contaminated material has been recommended for removal offsite as part of the works; however, the removal of the material within the footprint of the building is not required from a geotechnical perspective, as confirmed in the Geotechnical Report undertaken by Douglas Partners (refer to **Appendix 12**).

It should be noted, that the approximate cost of removing the entirety of the fill material from the Site would be in the region of approximately \$7-9M (assuming 13,000 m³ – 15,000 m³ at a density of 1.8 and a cost to dispose, inclusive of testing, formal waste-classification, dig, haul and dispose of \$250-\$300/tonne).

The field work for the geotechnical investigation was undertaken between 12 and 15 November 2018 and included ten (10) machine-drilled boreholes. A site walkover and measurement of groundwater levels in standpipe piezometers was carried out by an engineering geologist on 6 December 2018. The current test locations are shown in **Figure 38** below. The geotechnical issues considered relevant to the proposed development include excavation and associated vibration, stress relief, excavation support, earthworks, groundwater, settlement, foundations and earthquake provisions.

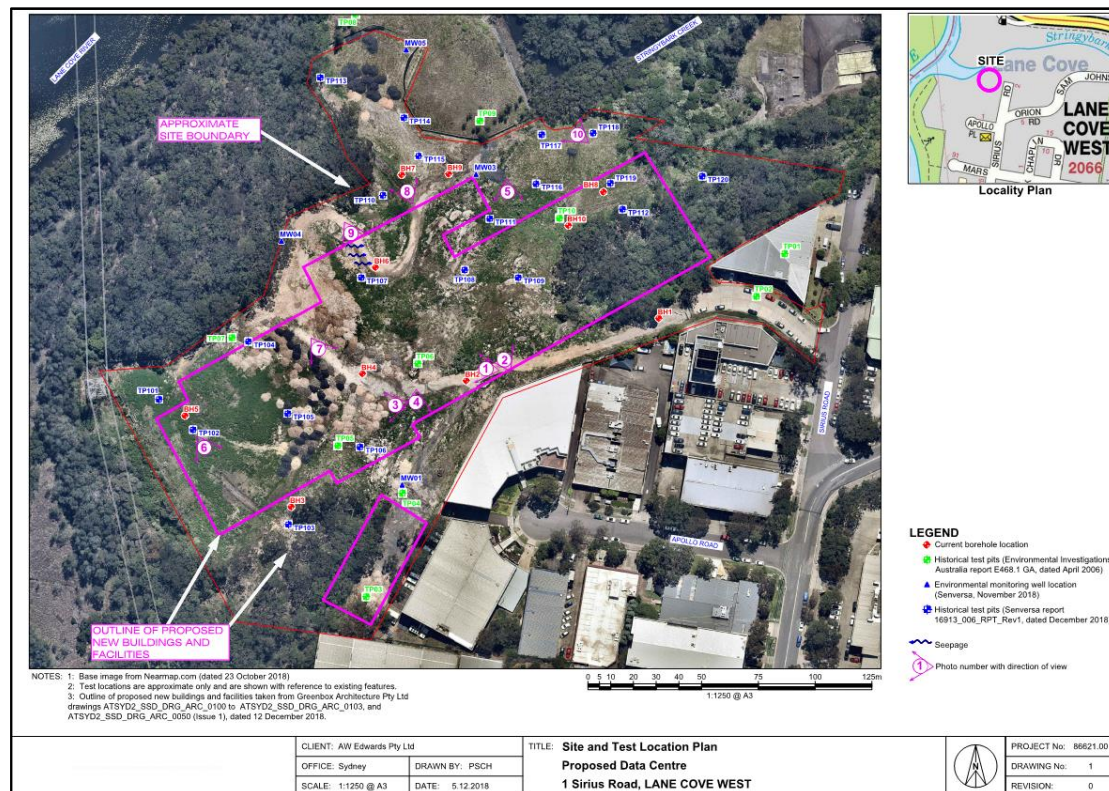


Figure 38 Site and Test Pit Locations (Source: Douglas Partners, 2018)

Excavation

The Geotechnical Report (refer to **Appendix 12**) suggests, that excavation near cliff lines will require careful assessment with regard to safety of workers, both above and below the cliff. The filling, colluvial and residual soils should be readily excavated using conventional earthmoving equipment; however, the use of heavy plant will be required to excavate medium strength and stronger rock. Based upon the exposed rock and the core from the boreholes, some discontinuities and lower strength bands are present within the medium and high strength rock units, which may aid excavation.

Effective removal of the medium or higher strength sandstone within the lower levels of the excavation should be achieved by heavy bulldozers ripping in conjunction with rock hammers; however, excavation contractors should make their own assessment of likely productivity depending on their equipment capabilities and operator skills.

In accordance with the Phase 2 Investigation undertaken by Senversa (refer to **Appendix 14**), if excavations are proposed within the asbestos affected or PASS materials then an Acid Sulfate Soil Management Plan will be required.

Materials Re-Use

Any offsite disposal of material will require assessment for re-use or classification of the soil in accordance with *Environmental Guidelines: Assessment, Classification and Management of Non Liquid Wastes* (NSW EPA, 2014: Reference 8), prior to disposal to an appropriately licensed landfill. This includes filling and natural materials that may be removed from the Site. Accordingly, environmental testing will need to be carried out to classify spoil prior to transport from the Site.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Stress Relief

Although stress relief movements are likely to occur over a relatively short duration, it is likely that there will be some small, long-term stress relief movements. It is impracticable to provide restraint for any relatively high in-situ horizontal stresses present within the Hawkesbury Sandstone. Therefore, concrete / structural elements should not be cast directly against the excavated rock face and it would be prudent to leave a gap between the structure and the rock face on the southern side of the Subject Site, which will accommodate any minor movements.

Regular monitoring of survey targets along the excavation perimeter during construction, such as following each successive 'drop' in excavation level, should be undertaken to monitor the effects of stress relief. If vertical or horizontal movements in excess of 6 mm are recorded, further excavation should be temporarily suspended to enable a careful review of the data and implementation of appropriate control measures.

Settlement

The duration of immediate and consolidation settlement could be reduced by the installation of ground treatment such as wick drains, and the magnitude of post-construction settlement could be reduced by pre-loading the area to be constructed over the alluvium. However, based on the magnitude of calculated settlement it is expected that suspended floors will be required to assess the various available options.

Vibration Control

Assuming that the nearby building are founded on medium or high strength sandstone, it is suggested that vibrations be provisionally limited to a peak particle velocity (PPV) of 8 mm/s at the ground level of the neighbouring buildings to protect architectural features. The provisional level complies with AS/ISO 2631.2-2014 and is below the normal building damage threshold level.

Batter Slopes

Although batters are not shown in the Architectural Plans (refer to **Appendix 5**), it is likely that a temporary batter / access ramp will need to be maintained through the central area of the Site for continued construction access. The recommended maximum batter slopes for excavated slopes is presented in **Table 28** below.

Table 28: Recommended Maximum Batter Slopes for Excavated Slopes		
Excavated Material	Temporary Batter	Permanent Batter
Filling	1.5H:1V	2H:1V
Extremely low to very low strength sandstone	0.75H:1V	1H:1V
Low strength sandstone	0.5H:1V	1H:1V
Medium strength sandstone (or better)	Vertical	Vertical

Excavation Support

Excavation faces retained either temporarily or permanently will be subjected to earth pressures from the ground surface down to the top of medium strength rock. Suggest material parameters for the preliminary design of excavation support structure are summarised in **Table 29** below.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Table 29: Suggested Material Parameters for Preliminary Design of Excavation Support Structures

Material	Bulk Density (kN/m ³)	Coefficient of Active Earth Pressure (K _a)	Coefficient of Earth Pressure at Rest (K ₀)	Ultimate Passive Earth Pressure (kPa)
Filling	18	0.3	0.6	-
Soil: Residual and Colluvial	18	0.25	0.5	-
Sandstone: Extremely low to very low strength	22	0.1	0.2	400
Sandstone: Low strength	22	0	0.1	2,000
Sandstone: Medium strength	22	0	0	6,000

Anchors may be required to support blocks or wedges exposed during excavation. The design of temporary ground anchors for the support of potential unstable rock wedges may be carried out using the typical average bond stresses at the grout-rock interface given in **Table 30** below.

Table 30: Recommended Maximum Batter Slopes for Excavated Slopes

Material Description	Allowable Bond Stress (kPa)	Ultimate Bond Stress (kPa)
Sandstone: Very Low Strength	50	100
Sandstone: Low Strength	150	300
Sandstone: Medium Strength	500	1,000
Sandstone: High Strength	1,000	3,000

The Geotechnical Report suggests, that in normal circumstances the building will restrain the excavation over the long term and therefore ground anchors are expected to be temporary only.

Groundwater

Based upon the groundwater observation and ground conditions encountered during the investigation, the groundwater drawdown effects on adjacent properties are likely to be negligible.

Douglas Partners recommend that supplementary geotechnical investigation be completed at a later stage of the project to confirm the geotechnical model in areas where there are geotechnical gaps. The supplementary investigations include:

- The site of the proposed electrical substation, in the southwest corner of the Site (including thermal resistivity);
- Investigation and assessment of groundwater levels and rock mass permeability, to refine the assessment of likely groundwater flows into the excavation; and,
- Further testing and assessment of the filling and alluvial soils in the eastern area of the Site, to refine estimates of settlement and to confirm the depth and extent of potential Acid Sulfate Soils.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Contamination

The Subject Site is regulated by the NSW EPA under the *Contaminated Land Management Act 1997* as the northern portion of the Site was previously found to be impacted by contaminated fill material. It is noted, that it was remediated by capping the fill material with clay and a 'Notice Maintaining Remediation' (No.28027, 27 September 2005) was put in place on it by the EPA.

Based on the results of the investigation undertaken (discussed in **Section 4.2.9** of this EIS), Senversa considers that the Subject Site can be made suitable for the Proposed Development and recommends that a Remedial Action Plan (RAP) be developed accordingly. Notwithstanding, the following requirements should be adopted during and / or prior to remediation, including:

- *Specific requirements for any works that impact the portion of the Site, subject to the 'NSW EPA Notice Maintaining Remediation' (No.28027, 27 September 2005).*
- *Additional groundwater monitoring to assess identified PFAS within fill and groundwater within the vicinity of the inferred capped area.*
- *Additional ground gas monitoring to assess whether carbon dioxide issues may have a potentially significant impact on the Proposed Development.*
- *An Acid Sulfate Soils Management Plan.*

The RAP (refer to **Appendix 16**) prepared by Senversa provides the following remedial objectives with regard to the Proposed Development, including:

- Develop a strategy that complies with requirements detailed within the 'NSW EPA Notice Maintaining Remediation' (No. 28027, 27 September 2005).
- Develop and implement a strategy to ensure the Site is suitable for the use as a commercial / industrial Data Centre.
- Mitigate risks to human health during and following the remedial works.
- Validate the completed remedial works as satisfactorily allowing the development.
- Meeting regulatory requirements prescribed by relevant regulatory agencies to carry out the remedial works and for site use.

Based on the analytical results obtained during the Phase 2 Investigation undertaken by Senversa (refer to **Appendix 14**), the required remediation comprises management of the following practices, including:

- Impacted fill material within the "capped area" subject to the NSW EPA Notice Maintaining Remediation.
- Asbestos impacted surface materials located within the northern and central portion of the Site.
- Isolated fill materials located within the western portion of the Site.

The Report notes, that any developed remedial strategy should include a process for assessment / characterisation of any unexpected finds and / or additional fill materials. The locations of these areas is illustrated further in **Figure 39** below.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

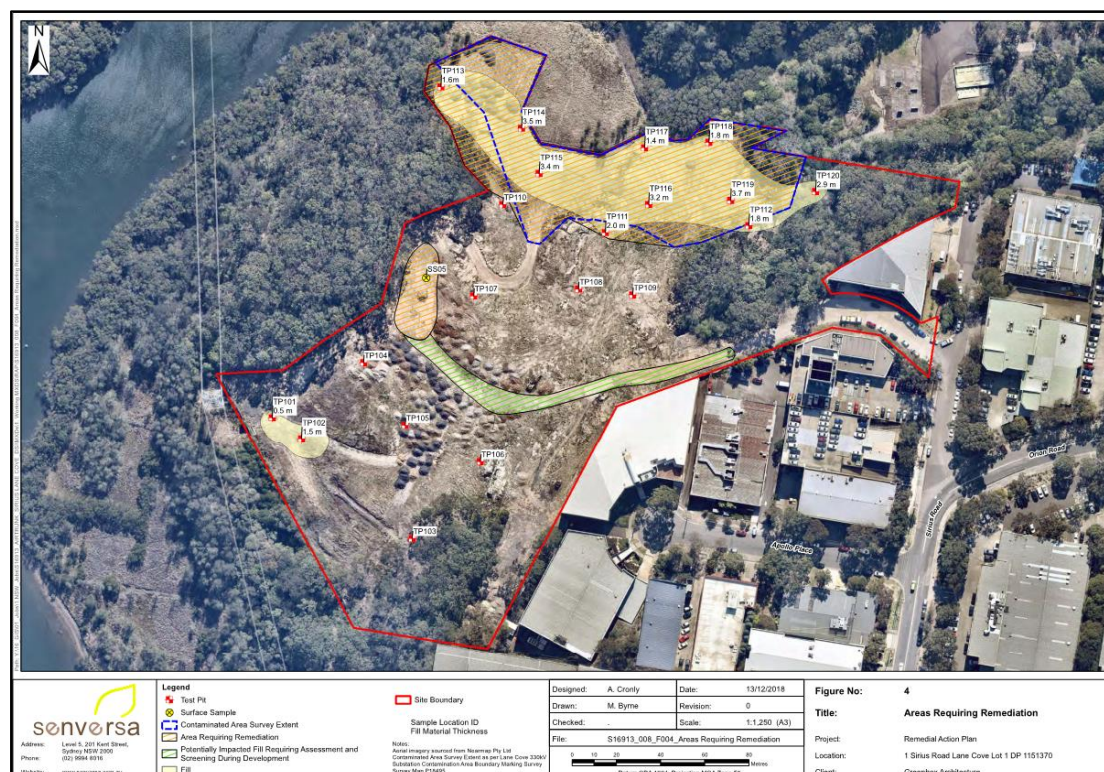


Figure 39 Areas of the Subject Site Requiring Remediation (Source: Senversa, 2018)

The proposed remediation works will be undertaken in a staged manner over approximately six (6) stages. These include:

- Stage 1 – Preliminaries and Approvals;
- Stage 2 – Engagement of Environmental Consultant;
- Stage 3 – Address Data Gaps and Work Plan;
- Stage 4 – Establishment of Environmental Controls;
- Stage 5 – Excavation, Placement and Cover of On-Site Impacted Fill Materials; and,
- Stage 6 – Validation.

The stages listed above will comprise the following proposed remediation works, including:

- Preliminaries and approvals.
- Engagement of an environmental consultant.
- Address data gaps and preparation of a Work Plan.
- Establishment of environmental controls.
- Preparation of placement areas and (where necessary) excavation of designated placement locations.
- Excavation and (where necessary) temporary stockpiling of contaminated fill materials from Remediation Areas.
- Placement of contaminated materials within designated locations within the Site.
- Construction of a cover layer over impacted materials.
- Validation of excavations, and cover and marker layers.
- Classification of waste materials (if generated) prior to offsite disposal and assessment of imported materials to the Site.
- Production of a remedial.

Senversa note, that residual impacted materials will require long-term management. Following the completion of remedial and validation works, a long-term Environmental Management Plan

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

(LTEMP) will be prepared. The LTEMP will document the expected limitation of on-site use; relevant environmental and health and safety processes and procedures; management processes, procedures and responsibilities to be adopted by future site users within the Site; and, include details on the location and extent of placed or residual asbestos contaminated fill materials, capping layers and marker barriers within the Site.

Notwithstanding, it is considered the impacted portion of the Site identified within the Phase 2 Investigations could be rendered suitable for the Proposed Development.

6.6 TRAFFIC AND TRANSPORT

The *Sirius Road Data Centre: Traffic Impact Assessment – SSDA Submission* (ARUP, 2018) considered the potential traffic impacts of the Proposed Development (refer to **Appendix 17**).

The road hierarchy near the Subject Site is shown in **Figure 40** below and comprises the following roads of interest, including:

- Epping Road;
- Orion Road; and,
- Sirius Road.

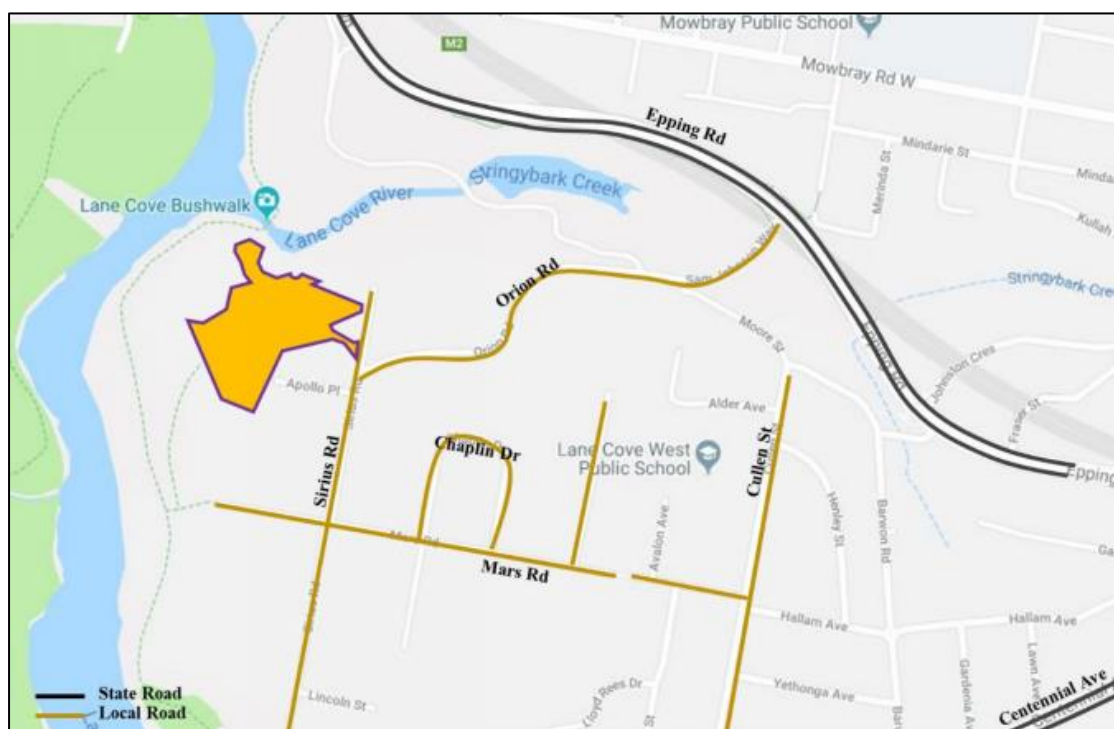


Figure 40 Road Hierarchy (Source: ARUP, 2018)

Access to the Site is proposed via the main vehicular crossing off Sirius Road. This would provide access for vehicles up to 19 metres in length in the proposed loading areas. From an operational standpoint, it is anticipated that identified commercial vehicles, such as Articulated Vehicles and Medium Rigid Vehicles (and other small vehicles such as cars) would enter the Site via the eastern access driveway to access the hardstand area. It is noted, that sufficient hardstand is provided for vehicles to be able to make a 'u-turn' on-site. Additionally, the car parking area has been designed accordingly to be accessed by cars and other light passenger vehicles.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Furthermore, the roads surrounding the Site contain a significant amount of on-street parking, which is generally untimed and available for all day use. An on-street car parking occupancy inspection of the surrounding roads (within 400 m of the Subject Site) was carried out on Friday 7 December 2018 for the following roads, including:

- Sirius Road;
- Orion Road;
- Apollo Place;
- Mars Road; and,
- Chaplin Drive.

It was observed that on a typical weekday around 90% of on-street parking spaces were occupied. Based on the 2016 Journey to Work Census data for the area surrounding the Subject Site, approximately 86% of the preferred mode of travel was by car. In response, the proposed Data Centre would make provisions for approximately 76 car parking spaces on the Subject Site (refer to **Figure 41** below).

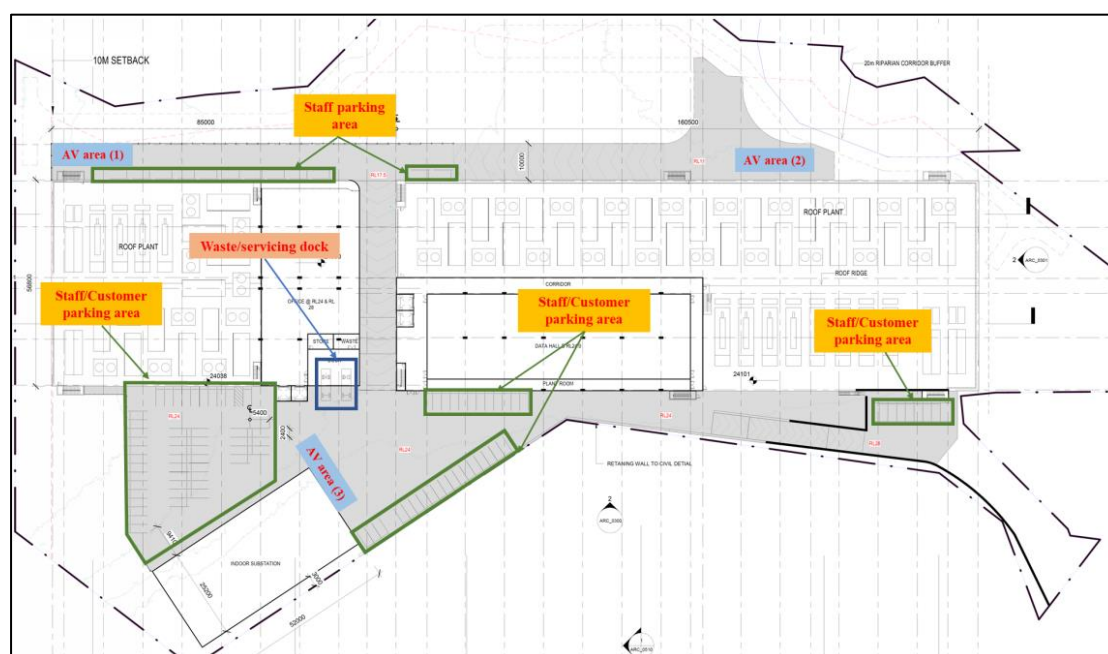


Figure 41 Proposed Site Layout with Regard to Parking and Loading Areas (Source: ARUP, 2018)

Parking for the Proposed Development has been assessed in accordance with the requirement of the LCDP2009 (Part R), which requires parking to be provided in accordance with the relevant controls below, including:

- Light Industrial Area: Minimum of one (1) space per 77 m² GFA; plus
- Office Component: Minimum of one (1) space per 60 m² GFA; plus
- Warehouse Area: Minimum of one (1) space per 300 m² GFA; plus
- One (1) disabled space per 50 car parking spaces (minimum 1 space).

Based on the LCDP2009 guidelines, the Site should provide a minimum of 123 car parking spaces. Additionally, the DCP guidelines assume that the size of each component of a proposed building is directly proportional to the number of employees; hence, the required car parking spaces.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

It should be noted, that at full capacity, a total of 80-100 people per day will be generated by the Proposed Development, including management staff, data centre engineers, maintenance technicians, security personnel and customer staff.

By applying the existing mode share percentages to the number of people on-site at any one time, the Site should provide at least 84 car parking spaces. The Proposed Development proposes to provide 76 off-street parking spaces, which is deemed to satisfy the expected parking demand for the following reasons:

- A Transport Access Guide (TAG) / Sustainable Travel and Access Plan (STrAP) can be provided for the Proposed Development under Section 5.1 of the LCDCP2009. This is a package to reduce car-based travel and include mode share targets. The objective of this is to encourage customers / staff to make greater use of public transport, vanpooling, car sharing, walking and cycling for their journeys to / from the Proposed Development site.
- As a result of the measures to be implemented by the future development to encourage alternate modes of transport, it is assumed that a 10% mode shift away from the private vehicle can be achieved compared to the current mode share for people working in the area. By applying this reduction factor to 84 car parking spaces, 76 car parking spaces will be required.
- An annual travel survey can be conducted by the Sirius Road Data Centre.
- Some parts of the trips to / from the Proposed Development would be generated by people in the local area. The trips originating from the local area would rely more on walking and cycling mode choice rather than using private cars.

It should be noted, that whilst 97 car parking spaces are demonstrated on the Architectural and Landscape Plans, this level of provision constitutes the reduced number of 76 car parking spaces and a provisional number of 21 car parking spaces, for possible future use of the Subject Site, ultimately future proofing the Site.

Additionally, LCDCP2009 requires the provision for disabled car parking spaces at the rate of one (1) space per 50 car spaces. In response, the Proposed Development proposes two (2) disabled / accessible car parking spaces, complying with the requirement. Furthermore, Part R of Council's DCP requires the provision for bicycles and motorcycles at the rate of one (1) space per 20 staff and one (1) motorcycle parking space per 15 car parking spaces, respectively. A total of five (5) bicycle parking spaces and five (5) motorcycle parking spaces are required by the LCDCP2009, for which have been provided accordingly.

The trip generation for the Site has been based on guidance specified in Section 3.10 of the RMS Guide to Traffic Generating Developments, which stipulates that the peak traffic generation period for the industrial land use is generally determined by three (3) key factors, including:

- Employee density;
- Travel mode; and,
- Peak period travel distribution.

From an operational perspective, the staff and shift numbers and times for the development are expected as the following:

- Day Shift Staff: 7:00am-7:00pm – 70 staff on-site, including 25 customer staff;
- Night Shift Staff: 7:00pm-7:00am – 20 staff on-site, including five (5) customer staff; and,
- At full capacity, a total of 80-100 full-time roles will be generated by the Proposed Development, including management staff, data centre engineers, maintenance technicians, security personnel and customer staff.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

In this regard, the Proposed Development will generate vehicle trips generally associated with the arrival and departure of staff with only infrequent service deliveries expected (maximum of three (3) service vehicle movements per day in peak period). The traffic generation of the Proposed Development would be as per **Table 31** below.

Table 31: Trip Generation for the Proposed Development				
Travel Modes	Mode Split	No. of Trips	Vehicle Occupancy	No. of Vehicles
Private Car	76%	76	1.05	72
Public Transport	20%	20	N/A	N/A
Active Transport	4%	4	N/A	N/A
Total	100%	100	N/A	72

The peak period travel distribution (i.e. the proportion of workers who travel to or from the Site in the peak hour), varies with the type and extent of development. For the proposed Data Centre, it is assumed, that 50% of day shift staff trips would occur over a single hour.

The level of vehicle traffic generated by the Proposed Development during operation, for both the AM and PM peak hours, as well as daily volumes are presented in **Table 32** below. The Proposed Development is estimated to generate a total of approximately 36 vehicle trips during the peak hour.

Table 32: Forecast Traffic Generation the Proposed Development	
Period	Number of Vehicles Generated by the Proposal
AM Peak Hour	36
PM Peak Hour	36
Daily	210

It should be noted, that the peak hour demand during the weekend is generally significantly lower compared to weekdays.

The volumes during the peak periods would equate to an addition of one (1) vehicle trip being generated every two (2) minutes and are therefore considered to result in minimal impacts on the surrounding road network and that traffic modelling software would not be sensitive to such small fluctuations of vehicular flows. In summary, the traffic impacts for the Proposed Development are considered acceptable.

The design of the Site has been designed in accordance with the following Australian Standards, including:

- AS2890.1-2004 Parking Facilities: Off-street car parking;
- AS2890.2-2002 Parking Facilities: Off-street commercial vehicle facilities;
- AS2890.3-2015 Parking Facilities: Bicycle parking facilities; and
- AS2890.6-2009 Parking Facilities: Off-street car parking for people with disabilities.

A swept path analysis was conducted (Appendix B of **Appendix 17**) to check compliance with the road design standards using approved software, for which the proposed design complies with the relevant standards.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Additionally, the loading areas for the Proposed Development are located in three (3) various areas around the Site. These loading areas have been designed for 19 m long articulated vehicles (AV) to access pumps and other equipment located around the Subject Site, for which they also have a required 4.5 m height clearance. Accordingly, access and circulation has been analysed for both 19 m AVs and 8.8 m medium rigid vehicles (MRVs), for which the waste area would be accessed by MRVs.

Additionally, emergency vehicles are proposed to access the Site off Sirius Road, similar to the loading / service vehicles. It is noted, that emergency vehicles (up to 10.5 m – fire general compliance) is smaller in size than the 19 m AVs. Therefore, emergency vehicles can comfortably be accommodated on-site.

The following proposed traffic management principles would be adopted during the construction period as an attempt to mitigate any potential traffic impacts from occurring as a result of the Proposed Development. These include:

- Disruption to all road users during the construction period would be kept to a minimum.
- Traffic control would need to be provided to manage and regulate traffic movements during construction.
- Construction and delivery vehicles entering or leaving the site compound and/or stockpile sites would use arterial roads. These movements would be restricted to non-peak traffic periods.
- In most cases, property access would be maintained throughout the construction period with suitable alternative access arrangements provided otherwise.
- Clear signage and alternate pedestrian routes should be organised if footpaths are affected.
- It is recommended that a detailed CTMP is developed as part of the detailed design stage.

Construction vehicles would be restricted to the State road network for access to the Site and vehicles will likely originate from this network. It is envisaged the main site entrance will be off Epping Road. It is noted, that the main access to the area is via Sirius Road, which is identified as a local road. The proposed construction vehicle routes are illustrated below in **Figure 42**.

Construction would be undertaken during standard working hours which are assumed to be as follows:

- Monday to Friday: between 7am-6pm.
- Saturday: between 8am-1pm.
- Sunday and public holidays: no work.

The forecast level of construction activity generated by the proposal is summarised in **Table 33** below. It is noted, that a construction vehicle movement is defined as the one-way flow of a single vehicle at a particular location. A single truck entering the Site and departing some time later, is regarded to contribute to two (2) movements to the overall traffic flow.

Table 33: Forecast Construction Vehicle Movements			
Works	Forecast Number of Construction Vehicle Movements		
	Daily	AM Peak Hour	PM Peak Hour
Excavation	200	20	20
Construction	100	10	10

A maximum workforce of approximately 320 personnel per day is expected for the construction works. Given the public transport availability to the Site, construction workers will most likely take public transport or carpool to work.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Furthermore, as informed by AW Edwards Pty Ltd, construction staff typically arrive to the Site in the morning between 6am and 7am. Therefore, workers start earlier and finish earlier than the commuter peak periods and would not coincide with the Site's peak.

It should be noted, that should employees visit the Site using private cars, they must park within available off-street public car parks in the locality to ensure that impact on staff parking spaces in the vicinity of the Site are minimised where possible.

Accordingly, as informed by AW Edwards Pty Ltd, the intention is to lease space within the adjacent office building, which has parking for just over 100 cars, for which this would accommodate some construction workers. Additional parking for construction staff would be provided within the construction site.



Figure 42 Proposed Construction Vehicle Routes (Source: ARUP, 2018)

Construction would be undertaken during standard working hours which are assumed to be as follows:

- Monday to Friday: between 7am-6pm.
- Saturday: between 8am-1pm.
- Sunday and public holidays: no work.

In summary, the Proposed Development is considered to have a minimal impact on the surrounding local transport network.

6.7 WASTE

Details of the construction and operational waste are provided within the *Waste Management Plan* prepared by SLR Consulting (refer to **Appendix 18**). Where possible, all construction materials would be recycled either on-site through reuse or off-site at a licenced facility. Waste would be transported and disposed of offsite by a licenced contractor to a licensed landfill facility.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Similarly, recyclable and non-recyclable materials generated during operation would be collected and disposed of by a licenced contractor. The ongoing management of waste would be promoted through the following:

- *Staff awareness of recyclable items, providing on-site training. This would include the company's Waste and Recycle Policy with clear objectives and expectations;*
- *Staff awareness and educational programs would be run which would supplement existing OH&S, and environmental programs on waste management;*
- *Suitable information would be supplied in staff induction kits, which would require refreshers on a yearly basis;*
- *The recycle and waste areas would be clearly marked and bins suitably labelled; and,*
- *Cleaning staff would be responsible for day-to-day management and control of all waste and recycling stations.*

The performance of the Proposed Development should contribute to the following target from the NSW EPA (2014) *NSW Waste Avoidance and Resource Recovery Strategy 2014-21*:

- 75% of total construction and demolition waste recycled, increasing to 80% by 2021.

Accordingly, the site preparation and construction activities are anticipated to generate the following broad waste streams, including:

- Site clearance and excavation wastes;
- Construction waste;
- Packaging waste; and,
- Work compound waste from on-site employees.

A summary of the likely waste types generated from site preparation and construction activities, along with their waste classifications and proposed methods is provided in **Table 34** below.

Table 34: Potential Waste Types, Classifications and Management Methods – Construction Waste		
Waste Types	NSW EPA Waste Classification	Proposed Reuse / Recycling / Disposal Method
Site Preparation and Construction		
Green Waste	General solid waste (non-putrescible) (garden waste).	Off-site recycling.
"Clean" Fill	To be classified subject to the results of testing.	Beneficial re-use on-site or offsite, if assessed to be suitable.
Contaminated Fill	To be classified subject to the results of testing.	Offsite treatment or disposal to landfill.
Excavated Natural Material (ENM) or Virgin Excavated Natural Material (VENM)	To be classified subject to the results of testing.	Beneficial re-use on-site or offsite, if assessed to be suitable.
Construction		
Sediment Fencing, Geotextile Materials	General solid waste (non-putrescible)	Reuse at other sites where possible or disposal to landfill.
Concrete	General solid waste (non-putrescible)	Offsite recycling for filling, levelling or road base.
Bricks and Pavers	General solid waste (non-putrescible)	Offsite recycling; Cleaned for reuse, rendered over or crushed for landscaping or driveway use.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Gyprock or Plasterboard	General solid waste (non-putrescible)	Offsite recycling or returned to supplier.
Sand or Soil	General solid waste (non-putrescible)	Offsite recycling.
Metals such as Fittings, Appliances and Bulk Electrical Cabling	General solid waste (non-putrescible)	Offsite recycling.
Timber	General solid waste (non-putrescible)	Offsite recycling; Treated: reused for formwork, bridging, blocking, propping or second hand supplier. Untreated: reused for floorboards, fencing, furniture, mulched second hand supplier.
Doors, Windows, Fittings	General solid waste (non-putrescible)	Offsite recycling at second hand supplier.
Insulation Material	General solid waste (non-putrescible)	Offsite disposal.
Glass	General solid waste (non-putrescible)	Offsite recycling; glazing or aggregate for concrete production.
Asbestos	Hazardous Waste	Removal and offsite disposal by specialist contractors.
Fluorescent Light Fittings and Bulbs	Hazardous Waste	Offsite recycling or disposal; contact <i>FluoroCycle</i> for more information
Paint	Hazardous Waste	Offsite recycling, Paintback collection or disposal.
Synthetic Rubber or Carpet Underlay	General solid waste (non-putrescible)	Offsite recycling; reprocessed and used in safety devices and speed humps.
Carpet	General solid waste (non-putrescible)	Offsite recycling or disposal; reused for landscaping, insulation or equestrian uses.
Plant Maintenance		
Empty Oil and Other Drums or Containers, such as Fuel, Chemicals, Paints, Spill Clean Ups.	Hazardous waste: Containers were previously used to store Dangerous Goods (Class 1, 3, 4, 5 or 8) and residues have not been removed by washing or vacuuming. General solid waste (non-putrescible): containers have been cleaned by washing or vacuuming.	Transport to comply with the transport of Dangerous Goods Code applies in preparation for offsite recycling or disposal at licensed facility. Note: Discharge to sewer subject to Trade Waste Agreement with local Council.
Air Filters and Rags	General solid waste (non-putrescible)	Offsite disposal
Oil Filters	Hazardous waste	Offsite recycling

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Batteries	Hazardous waste	Offsite recycling; Contact the Australian Battery Recycling Initiative for more information.
Packaging		
Packaging Materials, including Wood, Plastic (including Stretch Wrap or LLPE), Cardboard and Metals	General solid waste (non-putrescible)	Offsite recycling
Wooden or Plastic Crates / Pallets	General solid waste (non-putrescible)	Reused for similar projects, returned to suppliers, or offsite recycling. Contact <i>Business Recycling</i> for more information.
Work Compound and Associated Offices		
Food Waste	General solid waste (non-putrescible)	Donate (if suitable) or compost on-site. Alternatively dispose to landfill with general garbage.
Recyclable Beverage Containers (Glass and Plastic Bottles, Aluminum Cans), Steel Cans	General solid waste (non-putrescible)	Co-mingled recycling at offsite licensed facility or at a local NSW container deposit scheme 'Return and Earn' offsite licensed facility.
Clean Paper and Cardboard	General solid waste (non-putrescible)	Paper and cardboard recycling at offsite licensed facility.
General Domestic Waste Generated by Workers (Soiled Paper and Cardboard, Food Stuffs, Polystyrene)	General solid waste (non-putrescible) mixed with putrescible waste	Disposal at landfill.

In the absence of construction waste quantities, SLR Consulting have adopted the 'Office' waste generation rates (refer to **Table 35** below) from The Hills Development Control Plan 2012, for estimating the type and quantities of waste generated from the construction of the Proposed Development (refer to **Table 36** below).

Table 35: Construction Waste Generation Rates

Waste Material (tonnes)								
Rate Type	Floor Area (m ²)	Timber	Concrete	Bricks	Gyprock	Sand / Soil	Metal	Other
Office	1,000	5.1	18.8	8.5	8.6	8.8	2.75	5

Table 36: Anticipated Types and Estimated Quantities of Construction Waste

Development Component	Area (m ²)	Waste Types and Quantities (Other)						
		Timber	Concrete	Bricks	Gyproc k	San d / Soil	Meta l	Othe r
Ground Floor	14,578	75	275	125	130	130	45	75
Level 1	12,974	70	245	115	115	115	40	65
Level 2	4,979	30	95	45	45	45	15	25
	Totals	175	615	285	290	290	100	165

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Operation of the Proposed Development is anticipated to generate the following broad waste streams, including:

- General waste and commingled recycling;
- Food and organic wastes;
- Bulk packaging wastes, including polystyrene and cardboard boxes;
- E-wastes;
- Bulky waste items, such as furniture; and,
- Plant and general maintenance wastes.

Potential waste types, their associated waste classifications and management methods are provided in **Table 37** below.

Table 37: Potential Waste Types, Classifications and Management Methods – Operational Waste		
Waste Types	NSW EPA Classification	Proposed Reuse / Recycling / Disposal Method
Work Compound and Associated Offices		
Clean Office Paper	General solid (non-putrescible) waste	Paper recycling at offsite licensed facility.
Cardboard / Bulky Cardboard Boxes	General solid (non-putrescible) waste	Cardboard recycling at offsite licensed facility.
Recyclable Beverage Containers (Glass and Plastic Bottles, Aluminium Cans), Tin Cans	General solid (non-putrescible) waste	NSW container deposit scheme 'Return and Earn'; container recycling at offsite licensed facility.
Food Waste	General solid (putrescible) waste	Donate, if suitable; alternatively compost on or offsite or dispose to landfill with general garbage.
Batteries	Hazardous waste	Offsite recycling; can be taken to the Lane Cove Civic Centre, Lane Cove Woolworths and Lane Cove Coles; alternatively contact the Australian Battery Recycling Initiative for more information.
Mobile Phones	Hazardous waste	Offsite recycling; can be taken to a number of locations in the Lane Cove Councils area, through the Mobile Muster program. Contact Mobile Muster for more information.
Stationary	General solid (non-putrescible) waste	Offsite recycling or disposal to landfill.
Bulky Polystyrene Furniture	General solid (non-putrescible) waste	Offsite recycling or disposal to landfill.
E-waste	General solid (non-putrescible) waste	Offsite reuse or disposal to landfill.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Printer Toners and Ink Cartridges	Hazardous waste	Offsite recycling; free disposal box or bags and pickup service exists for printer toners and ink cartridges.
General Garbage (including Non-Recyclable Plastics)	General solid (putrescible and non-putrescible) waste	Disposal at landfill.
Spent Smoke Detectors	General solid (non-putrescible) waste or hazardous waste (some commercial varieties)	Disposal to landfill, or offsite disposal at licensed facility.
Glass (Other Than Containers)	General solid (non-putrescible) waste	Offsite recycling.
Light Bulbs / Fluorescent Tubes	Hazardous waste	Offsite recycling or disposal; contact FluoroCycle for more information.
Air Conditioning Parts or Filters	General solid (non-putrescible) waste	Offsite recycling or disposal to landfill.
Cleaning Chemicals, Solvents, Area Wash Downs, Empty Oil / Paint Drums / Chemical Containers	Hazardous waste if containers used to store Dangerous Goods (Class 1, 3, 4, 5 or 8) and residues have not been removed by washing or vacuuming. General solid (non-putrescible) waste if containers cleaned by washing or vacuuming.	Transport to comply with the transport of Dangerous Goods Code applies preparation for offsite recycling or disposal at licensed facility. Discharge to sewer likely to be subject to Trade Waste Agreement with Sydney Water.

The estimated quantities of operational waste generated by the offices in the Proposed Development are demonstrated in **Table 38** below.

Table 38: Estimated Quantities of Operational Waste and Recycling							
Location	Area (m ²)	Waste (L/day)	Paper and Recycling (L/day)	Recyclable Containers (L/day)	Waste (L/week)	Paper and Cardboard Recycling (L/week)	Recyclable Containers (L/week)
Offices	2,800	280	170	115	1,960	1,190	850

Additionally, waste storage locations would be designed in accordance with accessibility and sufficient space for storage and servicing requirements, will be integrated into the design. Where space is restricted, dedicated stockpile areas are to be delineated on the Site and adequately contained. Waste storage locations would be provided within loading dock areas that comply with BCA requirements and relevant Australian Standards.

All wastes removed from the Subject Site should be transported in accordance with relevant road and transportation regulatory requirements. Additionally, where required (depending on the classification of wastes), appropriately licensed transport contractors will be commissioned.

Further details are provided within **Appendix 18**.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

6.8 NOISE AND VIBRATION

The *Lane Cove West Data Centre: Acoustic Assessment – SSD 9741* (ARUP, 2018) considered noise generated during earthworks, construction and operation and includes the identification of sensitive noise receivers, noise sources with potentially adverse impacts, noise emissions, relevant acoustic criteria from Lane Cove Council and the EPA and controls necessary to ensure compliance with noise emission goals (refer to **Appendix 19**).

The assessment undertaken has been carried out in accordance with the requirements of the SEARs and reference to the following Policy and Guidelines, including:

- *NSW Noise Policy for Industry*
- *NSW Interim Construction Noise Guideline*
- *NSW Assessing Vibration – A Technical Guideline*

The nearest sensitive receiver / assessment locations are identified in the following locations (refer to **Table 39** below) and can be best illustrated geographically in **Figure 43** below.

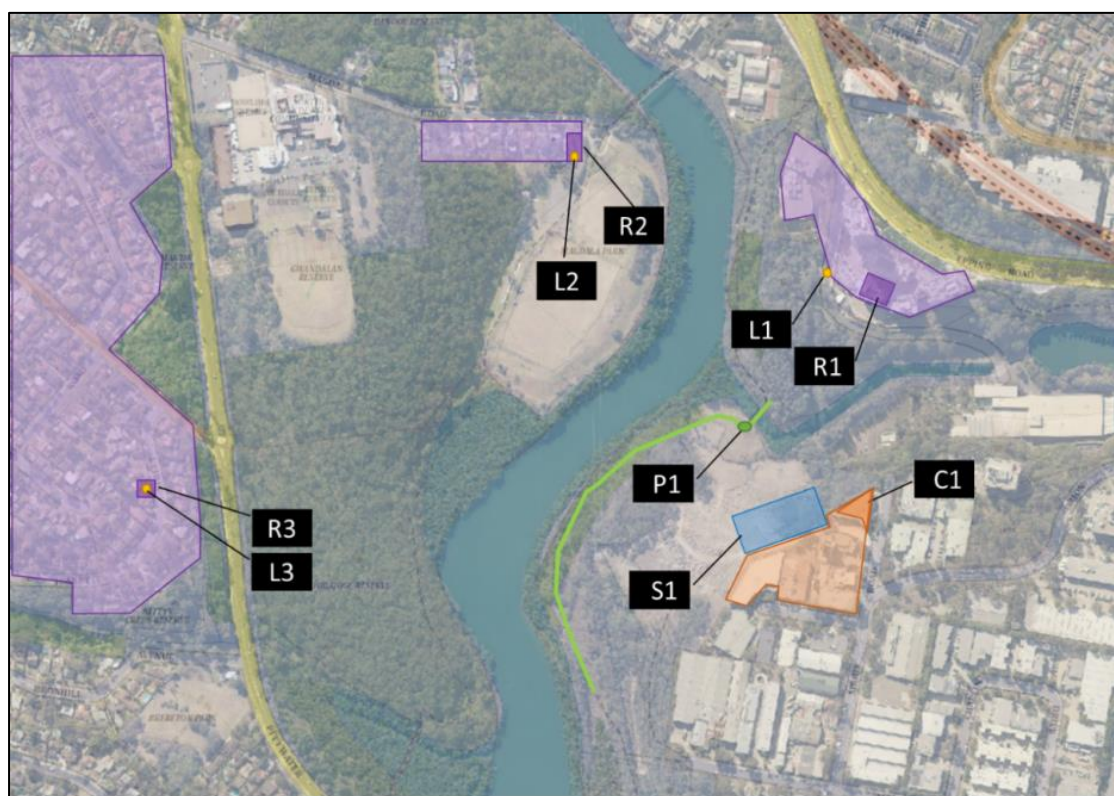


Figure 43 Receiver and Noise Monitoring Locations (Source: ARUP, 2018)

Table 39: Assessment Locations			
Type	ID	Address	Description
Residential	R1	150 Epping Road, Lane Cove	Residential apartment complex to the northeast of the Subject Site.
Residential	R2	65 Magdala Road, North Ryde	Residential building to the northwest of the Subject Site.
Residential	R3	14 Jeanette Street, East Ryde	Residential building to the west of the Subject Site.
Commercial	C1	1A Sirius Road, Lane Cove West	Commercial building to the east of the Subject Site.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Passive Recreation	P1	Lane Cove Bushwalk	River walk to the west-northwest of the Subject Site.
--------------------	----	--------------------	---

Long-term noise monitoring was undertaken from Friday 23 November 2018 to Monday 26 November 2018 at 14 Jeanette Street, East Ryde (L3 from **Figure 43** above). It should be noted, that due to severe weather condition, only four (4) days of data was successfully obtained during the long-term monitoring of the Subject Site (refer to **Table 40** below).

Table 40: Long-term Noise Monitoring Results (dB(A))			
Location	Time Period	Rating Background Noise Level dBL _{A90}	Ambient dBL _{Aeq} Noise Levels
L3 – 14 Jeanette Street	Day	42	57
	Evening	42	57
	Night	31	49

- Day: 07:00-18:00 Monday to Saturday and 08:00-18:00 Sundays and Public Holidays
- Evening: 18:00-22:00 Monday to Sunday & Public Holidays
- Night: 22:00-07:00 Monday to Saturday and 22:00-08:00 Sundays and Public Holidays

Additionally, short-term noise measurements were undertaken on the morning of 21 November 2018 at locations L1-L3. The background noise was dominated by distant traffic noise, with aircraft flyovers, birds / insect sounds and the sound of children playing determining the ambient level. The measured levels are prescribed below in **Table 41**.

Table 41: Short-term Noise Monitoring Results (dB(A))				
Location	Time Period	Background Noise Levels dBL _{A90}	Ambient Noise Levels, dBL _{Aeq}	Comments
L1 – 150 Epping Road	14:55-15:10	47	49	Traffic noise, child crying, occasional aeroplane pass-by.
L2 – 65 Magdala Road	16:31-16:46	53	56	Traffic noise, car pass-by, children playing sports, birds and insects.
L3 – 14 Jeanette Street	17:09-17:25	46	50	Traffic noise, birds and insects, car pass-by.

The area surrounding the Subject Site can be categorised as 'Suburban' under the NPI. According to **Table 41** above, the ambient noise levels at the sensitive receivers are controlled by distant traffic and aircraft noise (observed during the attended measurements). It is important to note, that the NPI sets the PANLs to $L_{Aeq(traffic)} - 15$ dB(A) in the case that the level of transport $L_{Aeq(traffic)}$ exceeds the RANL by 10 dB or more. Accordingly, **Table 42** below summarises the RANLs and the PANLs applicable to the Proposed Development.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Table 42: NPI RANLs and PANLs

Receiver	Indicative Noise Amenity Area	Time of Day	Recommended Amenity Noise Level (RANL) $L_{Aeq(period)}$	Existing Traffic $L_{Aeq(period)}^2$	Project Amenity Noise Level (PANL) $L_{Aeq(period)}$
L1 – 14 Jeanette Street	Suburban	Day	55	57	50
		Evening	45	57	40
		Night	40	49	35

Based on the background and ambient noise monitoring, **Table 43** below summarises the derived project specific noise levels based on the NPI.

Table 43: NPI Project Specific Noise Levels for Residential Receivers

Receiver	Time Period	Project Specific Noise Levels			
		Intrusive Noise Trigger Levels $L_{Aeq, 15 min}$	Project Amenity Noise Level (PANL) $L_{Aeq, period}$	Project Noise Trigger Level $L_{Aeq, 15 min}$	Sleep Disturbance $L_{Amax(night)}$
R1-R3	Day	47	50	47	N/A
	Evening	47	40	40	N/A
	Night	36	35	35	52

The Proposed Development includes the primary noise sources outlined in **Table 44** below. It is noted, where equipment has yet to be selected, the sound power levels and octave band spectra have been estimated based on expected equipment power ratings and past project experience. It is understood, that the building envelope will be primarily of concrete construction; therefore, it is unreasonable that noise breakout from the internal data halls and other spaces can be readily controlled. Therefore, the focus of this assessment for the planning stage relates to external equipment.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Table 44: Project Equipment, Quantities and Unmitigated Sound Power Levels (Per Unit)												
Equipment	Equipment Number			Overall dB(A)	Octave Band Centre Frequency – Hz, dB							
	Total Installed	Total Installed Externally	Duty ¹		63	125	250	500	1k	2k	4k	8k
Water-cooled chillers	30	30	24	78	71	61	70	73	76	70	63	56
Cooling Towers ²	30	30	24	95	108	108	97	88	84	75	67	62
Transformers	107	29	28	71	74	76	71	71	65	60	55	48
Diesel Generators (Backup Power Only) 75 dB(A) @ 1 m spec	48	48	1 ³	98	111	107	92	89	91	92	84	80

1. Modelled worst case scenario based on a number of externally located concurrently operational equipment during worst case 15 minutes.
2. Based on 100% capacity.
3. Represents daytime generator testing, not emergency operations.

The Architectural Plans located within **Appendix 5** identify the proposed location of rooftop equipment.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Noise modelling undertaken by ARUP (2019) has assumed all equipment operating at full capacity and therefore, the night time period is the most critical time period. In practice, mechanical systems will vary in load dependant on internal and external temperatures; therefore, operation is expected to be typically lower than presented herein.

Additionally, the Proposed Development also includes a number of backup power diesel generators that will not normally be in operation. These are to operate in a power failure only and would otherwise only operate for testing purposes. Testing would involve only one (1) generator operating at a time and would occur during the daytime period. A separate modelling scenario is presented, which include all generators in operation.

Initial noise predictions presented in **Table 45** below are based on unmitigated equipment noise levels outlined in **Table 44** above. The daytime predictions are based on standard meteorological conditions, while evening and night time predictions reflect noise-enhancing meteorological conditions. Night time predictions assume cooling towers operate at a lower capacity being estimated as 90% (approximated -1.4dB).

Table 45: Normal Operations, Standard Meteorological Conditions, Predicted Noise Levels						
Receiver	Period	Predicted Level L _{eq} , 15 min		Corrected Level L _{Aeq} , 15 min dB(A)	Criteria L _{Aeq} , 15 min dB(A)	Complies
		dB(A)	dB(C)			
R1 – 150 Epping Road, Lane Cove West	Day	50	71	55	47	No (+ 8 dB)
	Evening	55	73	60	40	No (+ 20 dB)
	Night	52	70	57	35	No (+ 22 dB)
C1 – 1A Sirius Road	When In Use	72	88	77	65	No (+ 12 dB)
P1 – Lane Cove Bushwalk	Day	63	78	68	50	No (+ 18 dB)

The predictions for unmitigated standard operations indicate a substantial exceedance of the criteria, primarily resulting from the cooling towers. Noise mitigation measures are presented further below.

Noise predictions for emergency back-up generator testing is presented in **Table 46** below. This is based on a single generator in operation, with testing occurring during the daytime only. While normal operating equipment would also be in operation at the same time, as exceedances are predicted in **Table 45** above. It is noted, that normal operating plant have not been included in the predictions, so that the contribution from the generator can be readily evaluated.

Table 46: Emergency Generator Testing (Single Generator), Predicted Noise Levels					
Receiver	Predicted Level L _{eq} , 15 min		Corrected Level L _{Aeq} , 15 min dB(A)	Criteria L _{Aeq} , 15 min dB(A)	Complies
	dB(A)	dB(C)			
R1 – 150 Epping Road, Lane Cove West	38	57	43	47	YES

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

C1 – 1A Sirius Road	64	78	64	65	YES
P1 – Lane Cove Bushwalk	51	65	51	50	NO (+1 dB)

For power failure operations, in which all generators could be in operation, assessment is presented in **Table 47** below. Due to the low likelihood of occurrence, non-noise enhancing conditions have not been considered. Regarding criteria, the NPI does not strictly apply to emergency operations, and typically less stringent criteria are adopted, based on the low likelihood of operation under such conditions.

Table 47: Emergency Operations (All Generators), Predicted Noise Levels – Standard Meteorological Conditions

Receiver	Period	Predicted Level Leq, 15 min		Corrected Level LAeq, 15 min dB(A)	Criteria LAeq, 15 min dB(A)	Complies
		dB(A)	dB(C)			
R1 – 150 Epping Road, Lane Cove West	Day	55	74	60	47	Refer to Section 4.8 of Appendix 19.
	Evening				40	
	Night				35	
C1 – 1A Sirius Road	When In Use	81	95	81	65	Refer to Section 4.8 of Appendix 19.
P1 – Lane Cove Bushwalk	Day	68	82	68	50	Refer to Section 4.8 of Appendix 19.

Preliminary noise mitigation measures have been recommended and incorporated into the project (refer to **Table 48**). It is noted, that further detailed acoustic design will be required to finalise mitigation specifications during the detailed design phase of the development. The following, therefore, provides an outline of the measures expected to be required for the project.

It is expected that the cooling towers will be the most challenging to attenuate and may require re-specification of the cooling tower type (such as use of centrifugal type) to address the overall noise requirements. The water-cooled chillers and transformers are capable of being attenuated with enclosures. For this reason, the chillers and transformers have been attenuated to a degree that the noise from those sources effectively will not contribute to the overall noise level at the nearest receivers. The purpose of this is to reduce the attenuation requirements for the cooling towers as far as practicable.

In developing the acoustic attenuation measures for the Proposed Development, it is recommended, that a detailed analysis of meteorological effects be carried out to confirm if noise-enhancing conditions are necessarily required to be considered.

Table 48: Indicative Noise Mitigation Measures

Item	Location	Attenuation Details
Water-cooled Chillers	Enclosure	Enclosure achieving 15-20 dB noise level reduction (refer to Figure 44 below).

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Cooling Towers	Intake / discharge / equipment reselection	A collective noise level reduction of 25-30 dB is required. This is likely to require a reselection of the cooling tower type and intake/discharge attenuators (refer to Figure 45). Selection may need to consider lower operation fan speeds for night-time operations. Cooling towers may also require an acoustically designed enclosure if plant selection cannot achieve compliance.
Diesel Generators (backup power only)	Inlet / Discharge	Gensets recommended to be specified with a maximum emission of 72 dB(A) @ 1m (refer to Figure 46). Discussed further below.
	Exhaust	
	Enclosure	
Transformers	Enclosure	Enclosure achieving 10-15 dB noise level reduction.

At the preliminary stage of design, detailed descriptions of proposed mitigation measures are not possible; however, indicative attenuation measures for each plant item are shown below in **Figures 44 & 45**.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

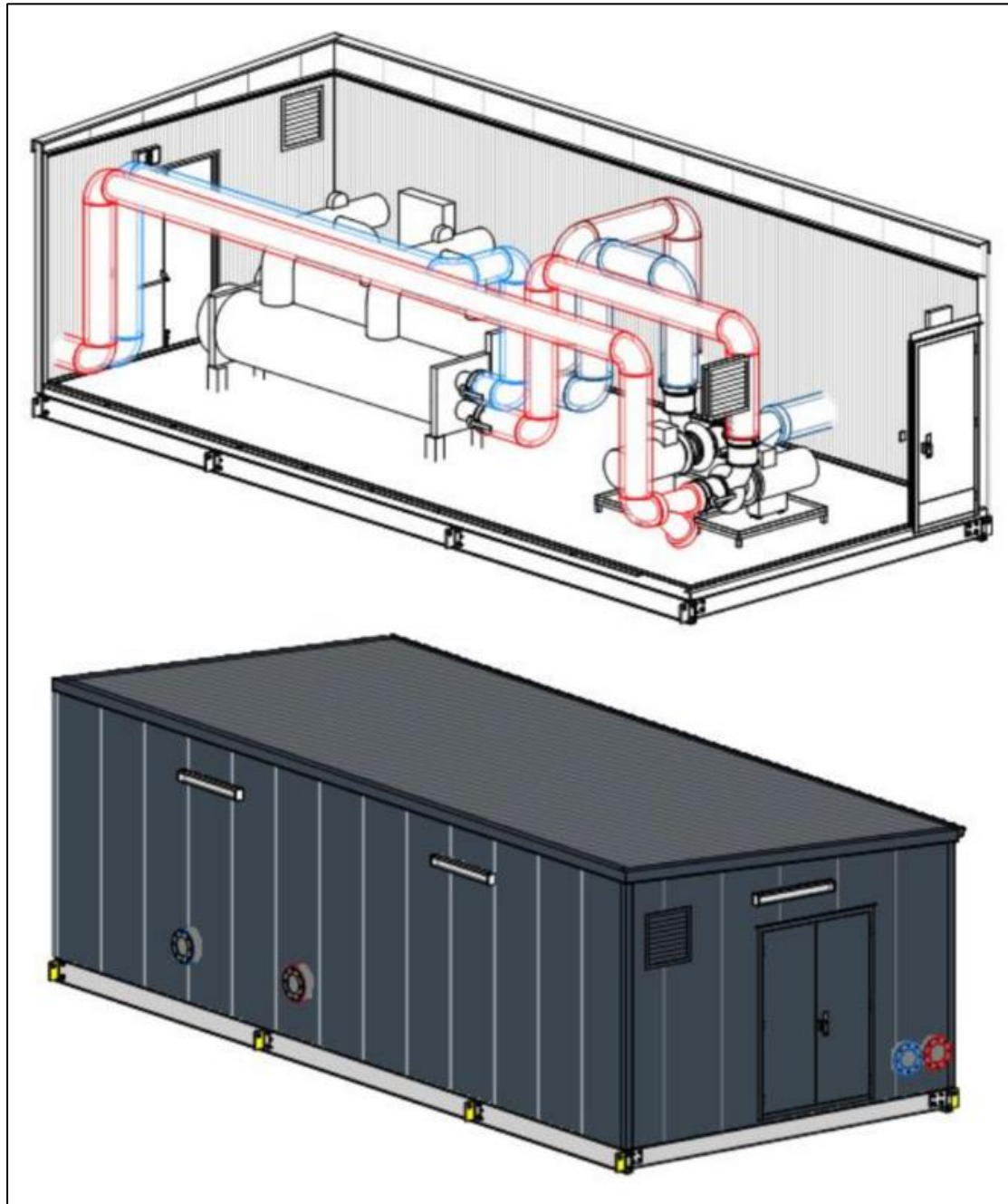


Figure 44 Cut-away Section (top) and rendered view (bottom) of a proposed chiller enclosure (Source: ARUP, 2019)

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

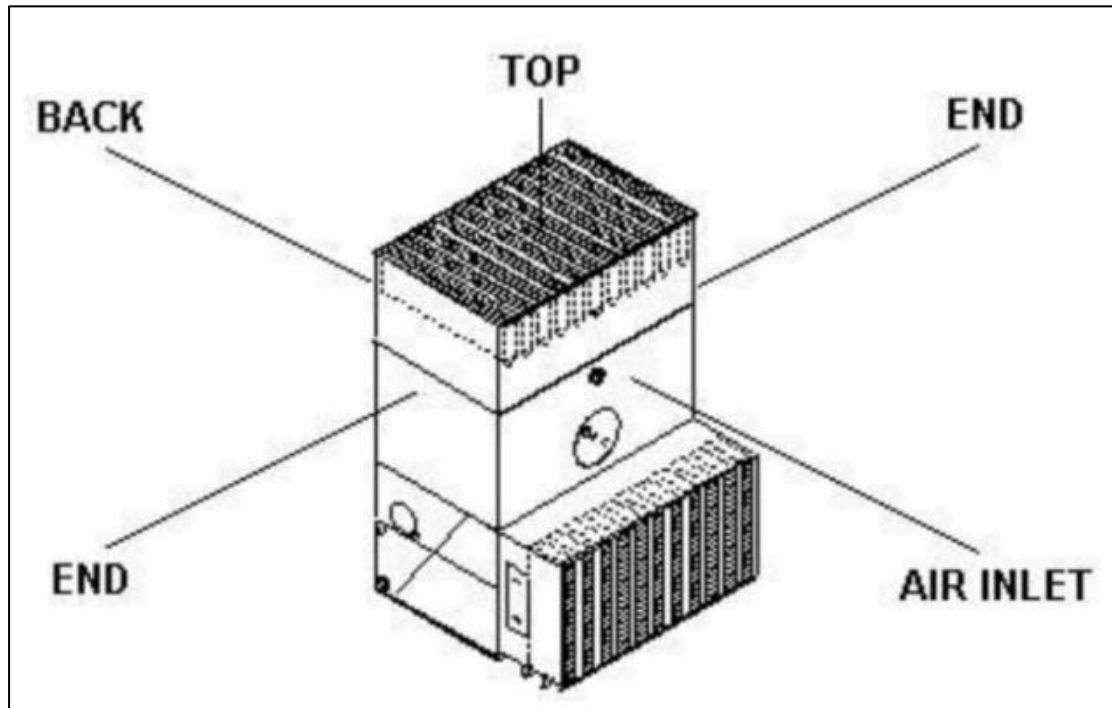


Figure 45 Cooling Tower with Attenuators Installed (Source: ARUP, 2019)

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

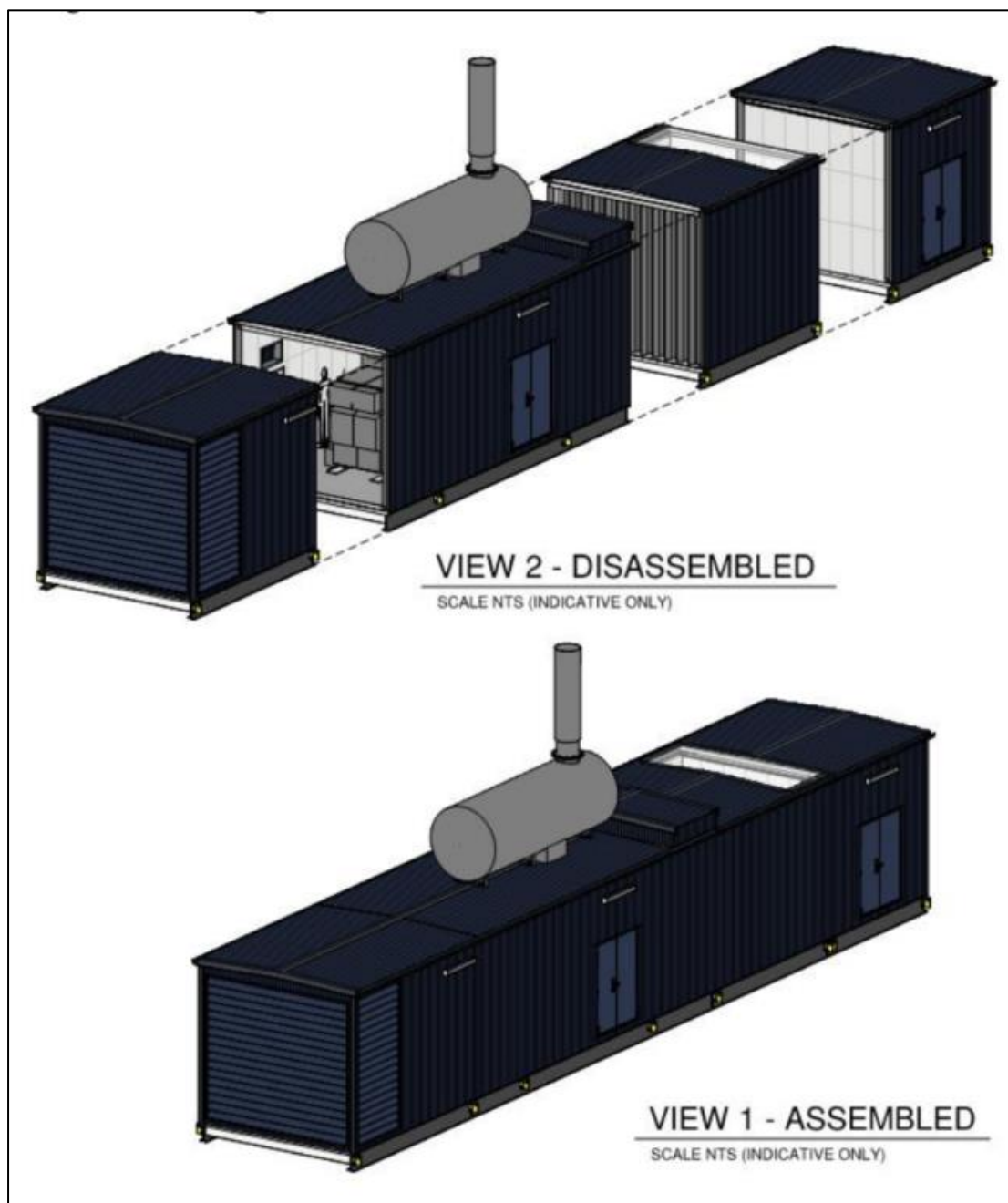


Figure 46 Indicative Generator Enclosure (Source: ARUP, 2019)

Table 49 below presents the assumed mitigated sound power levels and octave band spectra based on the indicative noise mitigation measures outlined above in **Table 48**.

Table 49: Project Equipment, Quantities and Mitigated Sound Power Level (Per Unit)										
Equipment	No. of (Duty)¹	Overall dB(A)	Octave Band Centre Frequency – Hz, dB							
			63	125	250	500	1k	2k	4k	8k
Water-cooled Chillers ²	24	59	61	51	55	55	56	50	43	36
Cooling Towers – 100% Capacity ³	24	79	95	87	78	76	71	70	67	63

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Cooling Towers – 66% Capacity ³	24	73	89	81	72	70	65	65	62	59
Cooling Towers – 50% Capacity ³	24	72	87	80	71	69	64	64	61	57
Transformers ²	28	61	64	66	61	61	55	50	45	38
Diesel Generators (Backup Power Only) 72 dB(A) @ 1 m spec	1	95	108	104	89	86	88	89	81	77

Note:

1. Modelled worst case scenario based on number of concurrently operational equipment during worst case 15 minutes.
2. Sound power levels adjusted by nominal reduction to account for acoustic enclosure.
3. BAC, Model VXT 800, Fan Motor 2 x 45 kW, with intake and discharge attenuators. Cooling towers have been modelled to operate at 100% fan speed during day, 66% fan speed in the evening and 50% fan speed at night.
4. Represents daytime generator testing, not emergency operations.

Accordingly, **Table 50** below presents revised predicted noise levels incorporating the preliminary mitigation measures and related sound power levels summarised above in **Table 48 & 49** respectively.

Table 50: Normal Operations, Predicted Noise Levels (Mitigated)						
Receiver	Period	Predicted Level L_{eq} , 15min		Corrected Level $L_{Aeq,15min}$ dB(A)	Criteria $L_{Aeq,15min}$ dB(A)	Meets Criteria?
		dB(A)	dB(C)			
R1 – 150 Epping Road, Lane Cove West	Day	33	54	38	47	Yes
	Evening	31	51	36	40	Yes
	Night	30	49	35	35	Yes
C1 – 1A Sirius Road	When In Use	56	71	61	65	Yes
P1 – Lane Cove Bushwalk	Day	46	62	48	50	Yes

Revised noise predictions for emergency backup generator testing are further presented in **Table 51** below. It is noted, that normal operating plant have not been included in the below predictions, so that the contribution from the generator can be readily evaluated.

Table 51: Emergency Generator Testing (Single Generator), Predicted Noise Levels					
Receiver	Predicted Level L_{eq} , 15min		Corrected Level $L_{Aeq,15min}$ dB(A)	Criteria $L_{Aeq,15min}$ dB(A)	Meets Criteria?
	dB(A)	dB(C)			

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

R1 – 150 Epping Road, Lane Cove West	35	54	40	47	Yes
C1 – 1A Sirius Road	61	75	61	65	Yes
P1 – Lane Cove Bushwalk	48	62	48	50	Yes

For power failure operations, in which all generators could be in operation, revised noise predictions are presented in **Table 52** below. Due to the low likelihood of occurrence, non-noise enhancing conditions have not been considered. Regarding criteria, the NPI does not strictly apply to emergency operations, and typically less stringent criteria are adopted, based on the low likelihood of operation under such conditions.

Table 52: Emergency Operations (All Generators), Predicted Noise Levels – Standard Meteorological Conditions						
Receiver	Period	Predicted Level L_{eq} , 15min		Corrected Level $L_{Aeq,15min}$ dB(A)	Criteria $L_{Aeq,15min}$ dB(A)	Meets Criteria?
		dB(A)	dB(C)			
R1 – 150 Epping Road, Lane Cove West	Day	52	71	57	47	Refer to Section 4.8 of Appendix 19.
	Evening				40	
	Night				35	
C1 – 1A Sirius Road	When In Use	78	92	78	65	Refer to Section 4.8 of Appendix 19.
P1 – Lane Cove Bushwalk	Day	65	79	65	50	Refer to Section 4.8 of Appendix 19.

The assessment presented in **Table 52** above is based on the mitigated noise specification for backup generators in **Table 48** above. While the use of a single generator complies with the daytime criteria, operation of all 51 generators is predicted to exceed the day, evening and night time criteria.

However, it is noted, that the project specific targets are particularly low and NPI targets are typically not adopted for such atypical operations. Furthermore, the likelihood of power failure is low, and if it was to occur, the duration of an outage would be expected to be hours, rather than days.

Construction noise criteria are set and based on the residential receiver locations previously utilised above for the operational phase of the Proposed Development. Measured noise data obtained at the logger location most representative of each noise catchment area has been used to derive appropriate noise management levels for the Proposed Development (refer to **Table 53** below).

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Table 53: Construction Noise Management Criteria for Residential Premises

Time Period	NML Description	NML Criteria $L_{Aeq}(15 \text{ min})$
During recommended standard hours	Noise Affected	50
	Highly Noise Affected	75
Outside recommended standard hours	Noise Affected	35

For all construction works, the contractor would be expected to prepare a detailed Construction Noise and Vibration Management Plan (CNVMP). AW Edwards have prepared a CNVMP accordingly (refer to **Appendix 20**).

The Report concludes, that noise mitigation measures are required to both the generators and other primary equipment, including cooling towers, water-cooled chillers and transformers.

Regarding construction, whilst specific activities and works schedules are not yet known, criteria has been established in accordance with the NSW ICNG and *Assessing Vibration: a technical guideline*. Recommendations with regard to mitigation and management measures are also outlined and are expected to be developed further in the CNVMP.

6.9 AIR QUALITY AND ODOUR

The *Lane Cove West Data Centre: SSDA Air Quality Assessment* (ARUP, 2018) considered the potential air quality impacts of the Proposed Development (refer to **Appendix 22**).

Given the unlikely event of an interruption of main power, the standby generators would switch on to provide power to each of the buildings. While in use, the standby generators would produce total unburned hydrocarbons (HC), nitrogen oxide (NO_x), carbon monoxide (CO), particulate matter (PM), sulfur dioxide (SO_2) and smoke.

At present, there are no regulations in place in Australia that limit emissions from non-road diesel engines and equipment. Therefore, to determine the likelihood for air quality impacts, a review of the US EPA emission standards (where the generator was developed) and the NSW Protection of the Environment (POEO) Regulation 2010 emission limits against the Cummins QSK95-G4 generator specification sheet (see Appendix B) has been completed. The outcomes of the assessment are summarised in **Table 54** below.

Table 54: Emission Rate Assessment

Pollutant	Cummins QSK95-G4		US EPA	POEO Regulation 2010
	g/kWh ²	mg/m ³	g/kWh	mg/m ³
HC	0.14	81	0.19	No limit detailed
NO_x	6.79	3,990	0.67	500
CO	0.22	150	3.5	No limit detailed
PM	0.04	18	0.03	50
SO_2	0.004	1.8	No limit detailed	No limit detailed

Given the distance of sensitive receiver (residential properties or schools), it is unlikely that local air quality at these locations would be significantly affected, even when the standby generators are in operation.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

However, operation of the generators has the potential to impact local air quality immediately adjacent to the site, particularly concentrations of NO_x / NO₂, if in operation over a long period of time. While emissions of NO_x are exempt from regulatory standards, these emissions can convert to NO₂ in the atmosphere and impact on human and ecological health. Therefore, operation of the generators during a power outage or damage event should be minimised as far as possible. This is included in the maintenance strategy for the site and therefore it is expected that this would be achieved under typical circumstances.

Notwithstanding, given that the standby generators will operate within relevant emissions limits, are a considerable distance from sensitive receptors (residential / schools) and are only expected to be used for short, intermittent periods. The associated air quality impact for them is considered to be minor and transient.

Therefore, no further air quality assessment (e.g. dispersion modelling) for the Proposed Development is considered to be warranted.

6.10 HAZARDS AND RISKS

As mentioned previously in **Section 4.2.8** of this EIS, to facilitate the intended operation of the Data Centre, there will be some small portions of diesel fuel stored on-site to service the back-up generators; however, there are no combustibles proposed to be stored, thus *State Environmental Planning Policy No 33 – Hazardous and Offensive Development* (SEPP 33) is not triggered. The *SEPP 33 – Preliminary Risk Screen* (SLR Consulting, 2018) notes, that diesel fuel to be stored on-site, is not classed as Dangerous Goods, but is classed as a C1 Combustible Liquid (refer to **Appendix 22**).

The proposed inventory of diesel (and classification), is provided in **Table 55** below.

Table 55: Classification of Diesel in Storage						
Substance	Hazardous Class	Packaging Group	Combustible Liquid Class	Total Storage On-Site	Threshold Quantity	SEPP 33 Threshold Level Findings
Diesel	N/A	-	C1	510,000 L	N/A	N/A

Additionally, there will be no transport of Dangerous Goods associated with the facility.

The Report notes, that the SEPP 33 screenings for storage of Dangerous Goods indicate, that the Proposed Development is not classified as a hazardous or offensive industry.

6.11 BIODIVERSITY

The *Biodiversity Development Assessment Report (BDAR)* (Ecoplaning, 2018) considers the potential impacts of the Proposed Development on threatened species, ecological communities and their habitats as required under the BC Act and BC Regulation, respectively.

It is important to note, that the Subject Site does not include any areas of outstanding biodiversity value, as defined under the BC Act. A layer of native vegetation cover is required for a 1,500 m buffer around the Subject Site to accurately determine the context of the Site. The extent of native vegetation on the Subject Site and immediate surrounds was mapped using the OEH (2016) as a base, with edits made to the layer where obvious changes to vegetation extent had occurred (refer to **Figure 47** below).

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

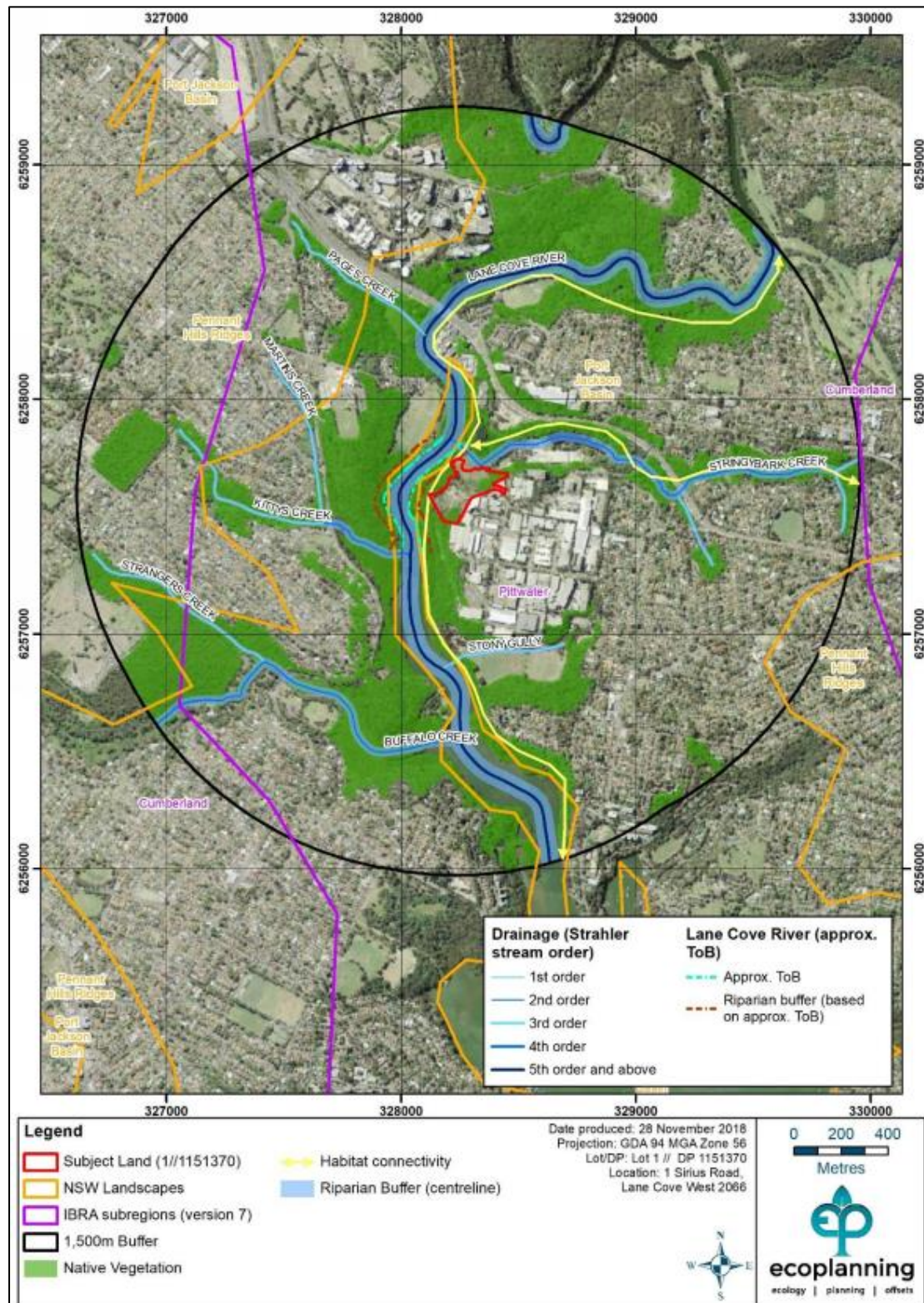


Figure 47 Locality Map (Source: Ecoplanning, 2018)

Desktop assessment determined the Subject Site to contain a number of vegetation communities (OEH 2016a) (refer to **Figure 48** below), including:

- Coastal Enriched Sandstone Dry Forest;
- Coastal Sandstone Foreshores Forest;

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

- Estuarine Mangrove Forest; and,
- Coastal Shale-Sandstone Forest.

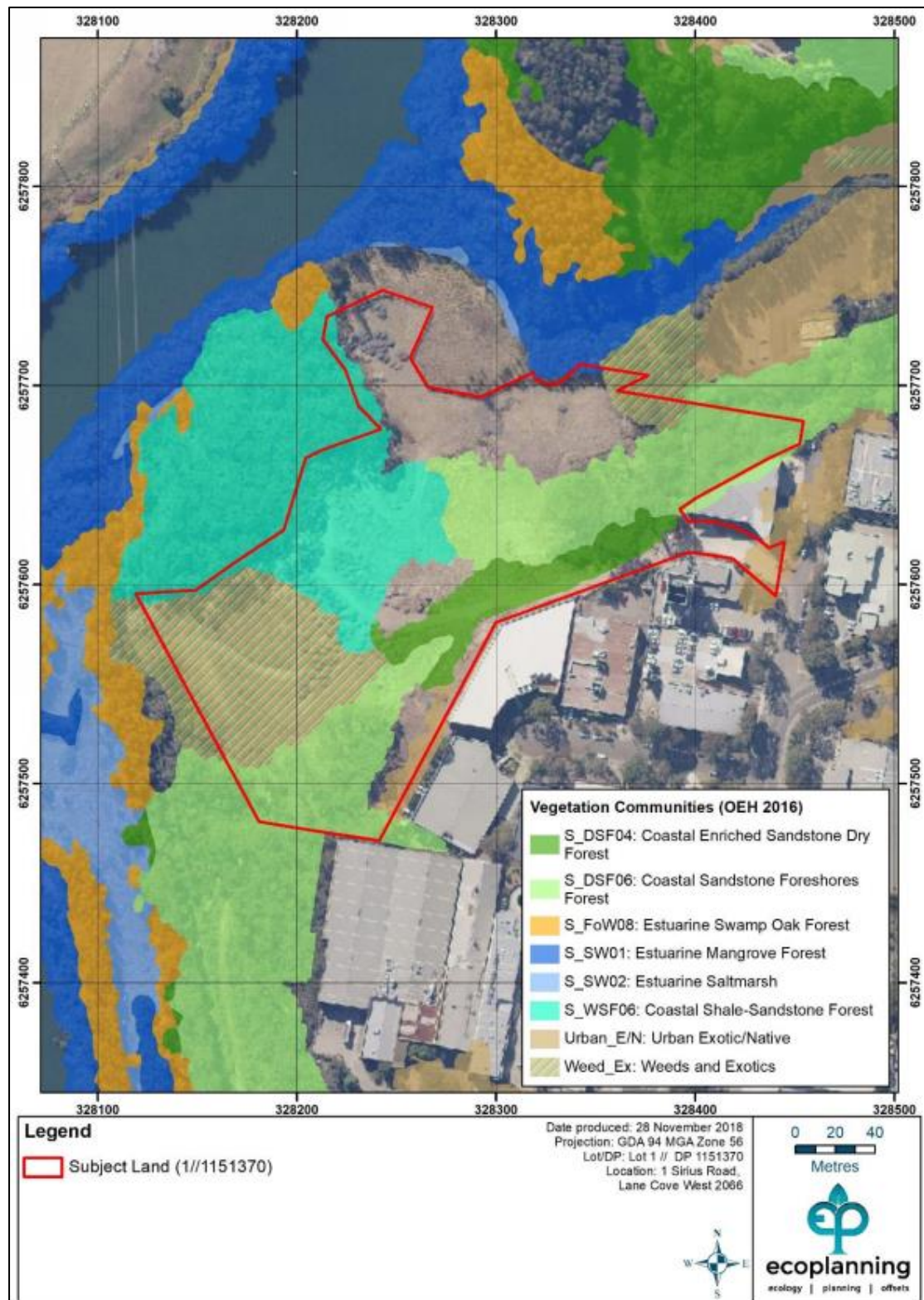


Figure 48 Vegetation Types (OEH 2016a) (Source: Ecoplanning, 2018)

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Notwithstanding, the vegetation communities mapped by OEH (2016) in the Subject Site do not correspond with any Threatened Ecological Communities (TECs) listed under the BC Act or the EPBC Act.

Assessment and mapping of Plant Community Types (PCTs) was undertaken on 14 November 2018 and 6 December 2018. Identification of vegetation communities within the Subject Site and community nomenclature follows the vegetation classification of OEH (2016). Based on the floristic composition of the vegetation in the Subject Site, one (1) native vegetation community with varying condition classes, and one (1) exotic community were identified (refer to **Figure 49** below), including:

- Coastal Enriched Sandstone Dry Forest; and,
- Cleared Land 'Exotic Grassland'.

The Coastal Enriched Sandstone Dry Forest (CESDF) identified in the Subject Site corresponds with the PCT:

- Smooth-barked Apple – Red Bloodwood open forest on enriched sandstone slopes around Sydney and the Central Coast (PCT 1776; HN 654).

A summary of the PCT and vegetation zones within the Subject Site is listed below in **Table 56**.

Table 56: Details of PCTs within the Subject Site including Area of Vegetation Zones			
Plant Community Types (PCTs)	Vegetation Formation & Class	Vegetation Zones	Area (ha)
PCT 1776 - Smooth-barked Apple - Red Bloodwood open forest on enriched sandstone slopes around Sydney and the Central Coast.	Dry Sclerophyll Forests (Shrubby Sub-formation)	Disturbed	0.50
	Sydney Coastal Dry Sclerophyll Forests	Intact	0.41
Total Native Vegetation			0.91
Cleared Lane 'Exotic Grassland'	N/A	N/A	3.03
Total Exotic Vegetation			3.03
Total Vegetation			3.94

The PCT identified within the Subject Site was classified into vegetation zones for credit calculation purposes. The vegetation zones are based on the condition descriptions below consistent with **Table 57**.

Table 57: VIS Plant Community Type Profile (OEH 2018b) – Smooth-barked Apple – Red Bloodwood Open Forest on Enriched Sandstone Slopes Around Sydney and the Central Coast (PCT 1776; HN654)	
Plant Community Type (PCT)	Smooth-barked Apple - Red Bloodwood open forest on enriched sandstone slopes around Sydney and the Central Coast
PCT and Biometric veg type (BVT) ID	PCT 1776 / BVT: HN654 and ME64
Vegetation Formation	KF_CH5B Dry Sclerophyll Forests (Shrubby sub-formation)
Vegetation Class	Sydney Coastal Dry Sclerophyll Forests
Upper Stratum	<i>Angophora costata</i> (Sydney Red Gum), <i>Corymbia gummifera</i> (Red Bloodwood), <i>Eucalyptus piperita</i> (Sydney Peppermint), <i>Eucalyptus pilularis</i> (Blackbutt), <i>Eucalyptus umbra</i> (Broad-leaved White Mahogany) and <i>Syncarpia glomulifera</i> (Turpentine).

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Middle Stratum	<i>Allocasuarina littoralis</i> (Black She-Oak), <i>Banksia serrata</i> (Old-man Banksia), <i>Elaeocarpus reticulatus</i> (Blueberry Ash), <i>Pittosporum undulatum</i> (Sweet Pittosporum), <i>Ceratopetalum gummiferum</i> (Christmas Bush), <i>Acacia ulicifolia</i> (Prickly Moses), <i>Leptospermum trinervium</i> (Slender Tea-tree), <i>Persoonia levis</i> (Broad-leaved Geebung), <i>Acacia suaveolens</i> (Sweet Wattle), <i>Acacia terminalis</i> (Sunshine Wattle), <i>Lomatia silaifolia</i> (Crinkle Bush), <i>Dodonaea triquetra</i> (Large-leafed Hop-bush) and <i>Banksia spinulosa</i> (Hairpin Banksia).
Ground Stratum	<i>Dianella caerulea</i> (Blue Flax-lily), <i>Entolasia stricta</i> (Wiry Panic), <i>Lomandra longifolia</i> (Spiny-headed Mat-rush), <i>Pteridium esculentum</i> (Bracken) and <i>Xanthosia pilosa</i> (Woolly Xanthosia).
Landscape Position	-
Profile Source	S_DSf04 (OEH 2013)
Full Reference Details	OEH (2013) The Native Vegetation of the Sydney Metropolitan Area Version 2.0 NSW Office of Environment and Heritage Sydney.
Estimate Remaining Pre-European Extent Round to Nearest 5%	35%
TEC Name (Listing Status)	BC Act: Not listed. EPBC Act: Not listed.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

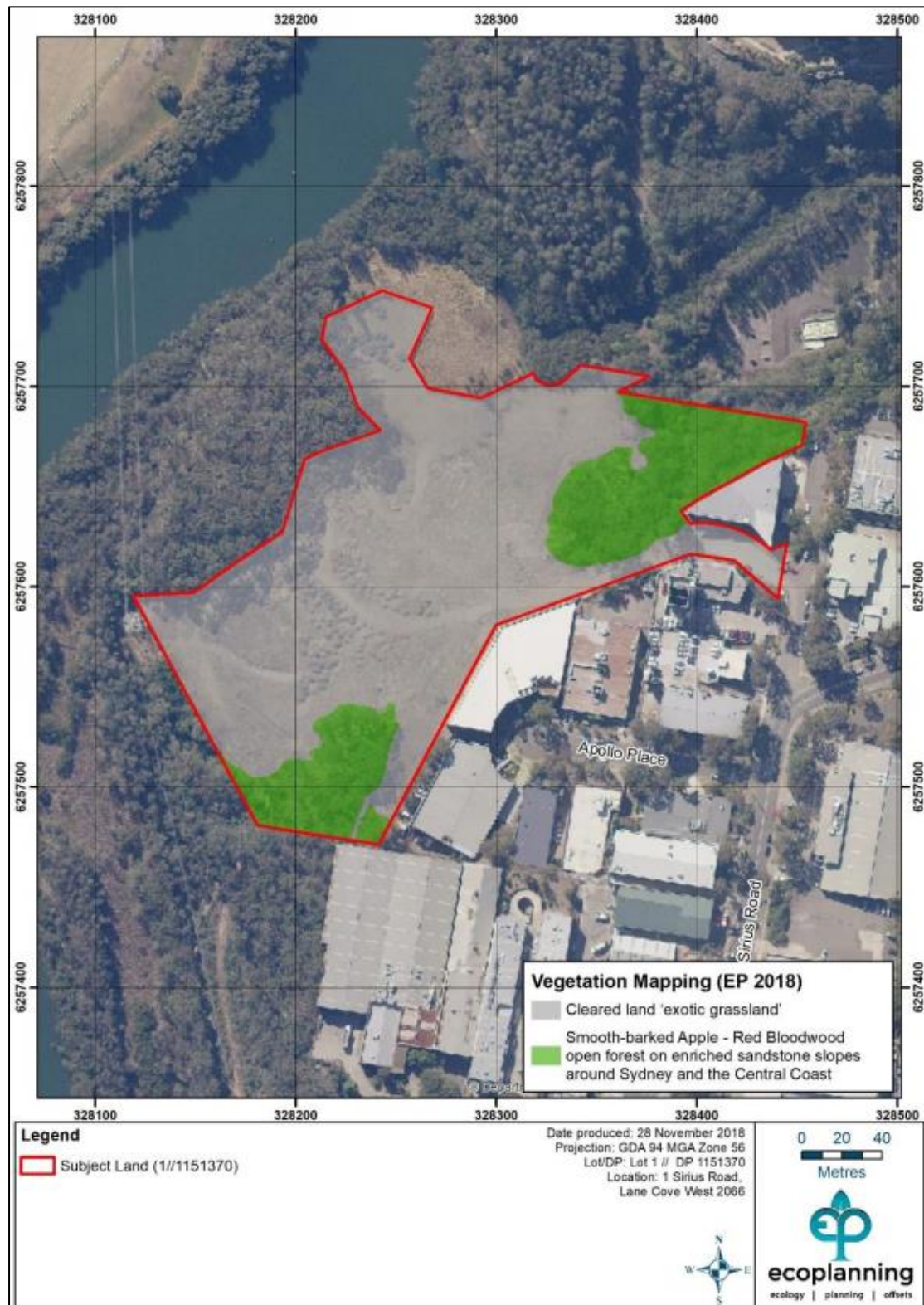


Figure 49 Field Results and Validated Vegetation with the Subject Site (Source: Ecoplanning, 2018)

Accordingly, the vegetation zones were divided into two (2) management zones; one (1) for complete clearing and one (1) for an Asset Protection Zone (APZ) (refer to **Figure 50** below).

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

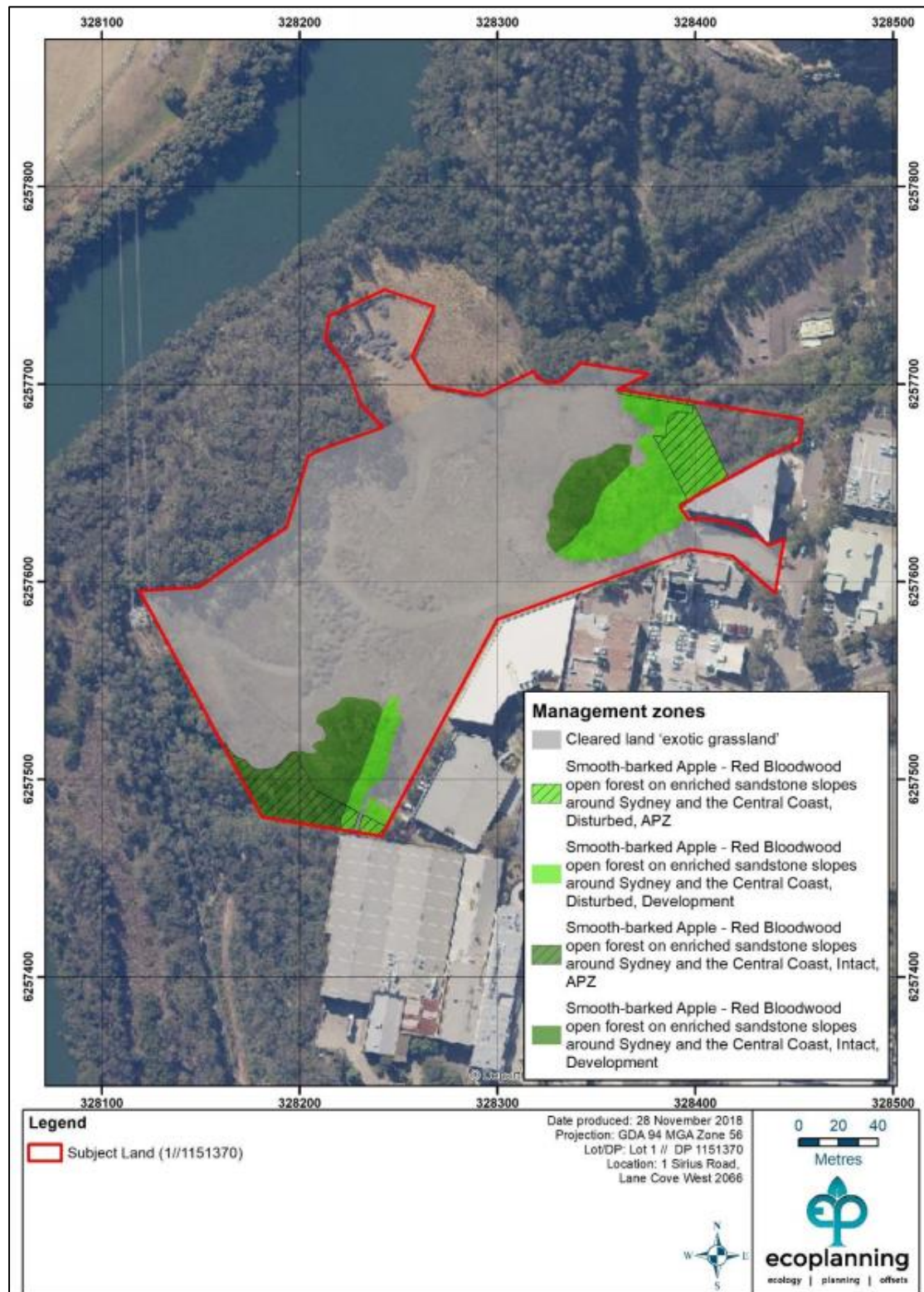


Figure 50 Management Zones Applicable to the Subject Site (Source: Ecoplanning, 2018)

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Credits have been calculated to account for a reduction in vegetation quality in the APZ, as informed in the Bushfire Report (refer to **Section 6.15** of this EIS). The APZ is situated within PCT 1776 in a 'disturbed' condition, which has a tree cover of 43.5% and a shrub cover of 1%. It is considered likely that the APZ would require routine slashing in order to keep grass species at a height of 10 cm or less, which will prevent the establishment of midstorey and canopy species. Notwithstanding, the reduction in habitat quality would not constitute complete clearing, as native groundlayer species will be able to persist in the APZ; hence, the impact within the APZ does not constitute a complete loss resulting in a future vegetation integrity score of 0. Areas to be managed as APZs were adjusted based on the likely level of management intervention required (refer to **Table 58** below).

Table 58: Vegetation Integrity Scores							
Veg Zone No.	PCT	Condition Class	Impact Type		Veg Integrity Score – Before Development or APZ Impacts	Veg Integrity Score – After Development (Complete Clearing)	Veg Integrity Score – After Development (APZ)
			Complete Clearing (ha)	Partial Impact – APZ (ha)			
1	PCT 1776 – Smooth	Disturbed	0.12	0.30	46.8	0	16.6
2	-barked Apple - Red Bloodwood open forest on enriched sandstone slopes around Sydney and the Central Coast	Intact	0.25	0.12	70.5	0	29.6
Total Clearing (Native Vegetation)			0.37	0.42	N/A	N/A	N/A
3	N/A	Cleared	2.57	0.21	0.8	0	0

It is important to note, that several measures will be implemented to reduce impacts, where possible, such as appropriate pre-clearance protocols and a CEMP. These include:

- Pre-Clearance Protocols:
 - On-site supervision of habitat tree felling and relocation of fauna; and,
 - Soft felling operations.
- Vegetation Management Plan (VMP)
- CEMP

Excluding the requirement for a CEMP, no additional adaptive management measures are proposed.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Impacts associated with vegetation zones PCT 1776 in an 'intact' and 'disturbed' condition for the Proposed Development will require offset under the BAM. The total cost of ecosystem credits, should the Biodiversity Conservation Trust (BCT) be used to offset the potential impacts, are currently (13 December 2018) estimated to be approximately \$55,747.31 (excluding GST). Additionally, no species credits are required for the potential impacts proposed on the Subject Site.

Additionally, the *Tree Assessment Report* (Travers Bushfire & Ecology, 2018) undertook an assessment of all trees equal to or greater than 15 cm in Diameter at Breast Height (DBH) within the Subject Site, for which 171 trees were assessed (refer to **Appendix 24**).

A Safe Useful Life Expectancy (SULE) and Tree AZ assessment was conducted on 8th and 10th December 2018. The Report has been prepared in accordance with Australian Standard AS4970 (2009) – Amendment No. 1 2010.

It is noted, that the SULE assessment identifies 95 of the observed trees (55%) as having a SULE condition rating of 1 or 2 (good condition). 35 of the trees (20.47%) that were assessed has a SULE rating of 4 (poor condition) and eight (8) (4.68%) of the trees were rated 3b or 3c were recommended for removal due to poor health and / or structural instability. The remaining 33 trees were rated as 3a, 3b or 3c, indicating that they are likely to be retainable for 5 to 15 years with appropriate maintenance.

Accordingly, the Proposed Development would account for the removal of 82 trees on the Subject Site (regardless of their SULE rating). With this in mind, Tree Protection Zones (TPZ) are to be implemented for any retained tree in accordance with Australian Standard AS4970 (Section 4).

To minimise impacts in local ecology and to maintain a stand of healthy trees within a broad scale development, the following recommendations apply, including:

- Aim to retain hollow bearing trees of good condition wherever possible throughout the landscape in order to retain fauna habitat;
- Preferentially remove dangerous or poor condition trees and examine development layouts to maximise tree retention;
- Consider the placement of services to avoid or minimise tree removal or damage to tree protection zones;
- Remove suppressed or otherwise poor condition trees to reduce bushfire fuel loads; and,
- Actively replant native trees commensurate with previously occurring vegetation types within the study area as per an approved Vegetation Management Plan (VMP) to maximise local amenity within the development, to consolidate any retained native vegetation within the locality and to provide suitable habitat, with connectivity for locally occurring native fauna.

Furthermore, in the event that trees are retained under the Proposed Development scenario, appropriate tree protection measures should be implemented, including:

- In the event that trees can be retained it is considered that an AQ5 qualified arborist be engaged to manage any construction works within the TPZ and to identify any other mitigation measures to maintain or improve their condition where the works proposed impact on more than 10% of the TPZ.
- TPZs in close proximity to proposed works should be adequately marked and sign-posted. Signage identifying the TPZ shall be placed at 10 metre intervals along the TPZ barrier fencing. These signs will face towards the development site and shall have lettering that complies with AS 1319. TPZ fencing and signage should be inspected on a regular basis and maintained in good condition.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

- All trees nominated for removal are to be removed prior to any construction activity or bulk earthworks. Approved tree removal operations in the vicinity of retained trees are to be undertaken in a manner that avoids canopy or root damage and soil compaction to retained trees. Such works should be supervised by a qualified arborist.
- Stumps are to be ground, not dozed or dug out unless they impact on the installation of services, roads or building works.
- All trenches, footings and major earth movement are to avoid TPZs.
- Stockpiling materials and soils within TPZs is forbidden.
- Machinery and other vehicles are to avoid TPZs during all operations.
- Any trenching or construction works unavoidably undertaken within TPZs should be witnessed, supervised and recorded (photographed and documented) by an AQ5 qualified arborist who will specify any works to be undertaken to avoid or remediate damage to trees.

Notwithstanding, a tree revegetation plan is to be prepared and integrated with the Proposed Development works and landscaping.

6.12 SOCIO-ECONOMIC IMPACTS

Within the *Liveable Lane Cove Community Strategic Plan 2035* (2018), the vision for Lane Cove promotes the evolution of this area as a smart vibrant economy characterised by a diversity of modern businesses. Lane Cove Council is already supporting strategies for encouraging the growth of Lane Cove West Business Park and to increase local employment opportunities. Additionally, Council has also produced a *Delivery Program and Operational Plan 2018-2021* (2018), which identifies ways of creating and supporting a vibrant and sustainable local economy. This includes encouraging a diverse range of businesses. Both these documents are supportive in principle to the development of the proposed Data Centre.

There are three (3) reasons as to why the Proposed Development should be facilitated, including:

1. There is an adequate stock of undeveloped and zoned employment land under the *North District Plan* (Greater Sydney Commission); hence, this land should be developed for its intended use to generate further employment-generating opportunities and local jobs in the *North District Plan* region.
2. There is a demand to store electronic data and records within secure locations. It is not necessarily feasible for this to occur in commercial and business locations (e.g. within the CBD).
3. The size and location of the Site is considered suitable for the intended and proposed use. It will also generate significant employment-generating opportunities for the professional employment sector.

Additionally, the Proposed Development would assist in providing new employment opportunities and promoting industry diversification (i.e. ICT sector). This SSDA would not alter the quantity or configuration of land currently zoned for light industrial uses.

The Proposed Development, for the purposes of a Data Centre is considered consistent with the strategic direction of both the *North District Plan* (Greater Sydney Commission, 2018) and Lane Cove Council's – *Lane Cove Community Strategic Plan 2035* (2018) and *Delivery Program and Operational Plan 2018-2021* (2018). Additionally, the Proposed Development will further contribute to the growth of knowledge and professional service jobs within the North District; hence, contributing to the North District's economic growth.

It is noted, that if the Proposed Development did not proceed, the Site would not provide employment-generating opportunities for an employment sector.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

The Proposed Development can support the existing Lane Cove West Business Park by maintaining industrial land stocks and employment objectives, while promoting industry diversification (and generate new employment sources) and can generate more employment during the planning, construction and maintenance stages.

It is noted, that the Proposed Development format would deliver an employment outcome accommodating between 80-100 (operational) jobs. Whilst, the construction phase of the Proposed Development would be in the order of approximately 320 jobs

Additionally, the Proposed Development would generate a range of community benefits / drivers, including:

- Reduced travel distances – which, would generate benefits including, reduced vehicle wear and tear, reduced fuel costs, reduced pollution, reduced traffic congestion, reduced risks of car accidents and more time which can be spent either working, socializing or undertaking other activities;
- New employment opportunities; and,
- Providing jobs closer to people's homes.

It should be noted, given the scale and nature of the Proposed Development, it will have a minimal impact on existing community and social facilities and that there are no requirements to provide for or contribute to new community or social infrastructure in the local area.

Accordingly, the Proposed Development can support the existing Lane Cove West Business Park by developing existing industrial land stocks and promoting industry diversification (i.e. ICT sector and professionals). Additionally, it will also generate more employment during the planning, construction and maintenance stages.

6.13 ABORIGINAL CULTURAL HERITAGE

The *1 Sirius Road, Lane Cove: Archaeological Report* (Biosis, 2019) was conducted in accordance with the requirements of the SEARs as part of the EIS process, as well as undertaking consultation with the Aboriginal community as part of adhering to requirements of the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* (DECCW, 2010a) (refer to **Appendix 26**).

A search of the Aboriginal Heritage Information Management System (AHIMS) database (Client Service ID: 396636) identified 115 Aboriginal archaeological sites within a 2 x 2 km search area, centred on the Subject Site. It is noted, that none of these registered sites are located within the study area. **Table 59** below provides the frequencies of Aboriginal site types within the vicinity of the study area.

Table 59: AHIMS Sites within the Vicinity of the Study Area		
Site Type	Occurrences	Frequency (%)
Artefact	72	40.00
Shell	60	33.33
Potential Archaeological Deposit (PAD)	20	11.11
Art (Pigment or Engraved)	18	10.00
Grinding Groove	8	4.45
Habitation Structure	2	1.11
Total	180	100%

An archaeological survey (field investigation of the study area) was undertaken on 20 November 2018. The archaeological survey consisted of four (4) transects being walked across the study area in order to identify Aboriginal sites present within it. Based on the archaeological

survey undertaken, the study area has been assessed and determined as possessing a low archaeological potential to contain intact Aboriginal sites (refer to **Figure 51** below).



Furthermore, in accordance with the archaeological survey undertaken, the *1 Sirius Road, Lane Cove: Aboriginal Cultural Heritage Assessment Report* (Biosis, 2019) has been prepared in accordance with the *Code of Practice for the Archaeological Investigation Objects in NSW* (DECCW 2010b). Consultation with the Aboriginal community has been undertaken as per the process outlined in the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW 2010a).

As noted above, a search of the AHIMS database (Client Service ID: 396636) identified 115 Aboriginal archaeological sites within a 2 x 2 km search area, centred on the Subject Site. It is noted, that none of these registered sites are located within the study area.

Owing to the levels of disturbance, there were no locations identified within the study area, which were considered to have the potential to retain intact archaeological deposits of artefacts or shell. The majority of the study area has been subject to cut and fill actions, with much of the original ground surface having been visibly altered. With the study area, disturbance included the removal of topsoil, construction of buildings within the study area, and the dumping and removal of contaminated fill. Based on this archaeological survey, the study area has been assessed as holding low archaeological potential to contain intact Aboriginal sites.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

It should be noted, that the AHIMS site data demonstrates, that there is a concentration of sites located along the Lane Cove River and Stringybark Creek. Both water sources are perennial sources, which would provide access to flowing water, and to aquatic species such as freshwater crayfish, fish and eels (Rosen 1995). As demonstrated by White and McDonald (2010), water supply was a significant factor influencing Aboriginal land use and habitation in the area. The close access to water and resources suggests that Aboriginal people would have used the area; however, the landforms within the study area are not favourable for long term occupation and subsequent high levels of disturbances would have destroyed any Aboriginal sites present.

Consultation with the Aboriginal community has been undertaken in compliance with the consultation requirements as detailed below. Consultation undertaken included the following stages:

- Stage 1: Notification of the Proposed Development and registration of interest.
 - Identification of relevant Aboriginal stakeholders:
 - Lane Cove Council;
 - NSW OEH;
 - NSW Native Title Services Corporation Limited (NTSCORP Limited);
 - Office of the Registrar, Aboriginal Land Rights Act 1983 of Aboriginal Owners;
 - National Native Title Tribunal (NNTT);
 - Greater Sydney Local Land Services;
 - Metropolitan Local Aboriginal Land Council (MLALC).
 - Public Notice:
 - Daily Telegraph (30 January 2019).
 - Registration of Aboriginal Parties.
- Stage 2: Presentation of information about the Proposed Development.
- Stage 3: Gathering information about cultural significance.
 - Archaeological assessment methodology information pack;
 - Information gathered during fieldwork.
- Stage 4: Review of draft Aboriginal Cultural Heritage Assessment Report.

The two (2) main values addressed when assessing the significance of Aboriginal sites are cultural values to the Aboriginal community and archaeological (scientific) values. The Aboriginal Cultural Heritage Assessment Report (ACHAR) assesses the cultural values of Aboriginal sites in the study area, for which the heritage assessment criteria in NSW fall broadly within the significance values outlined in the Australia International Council on Monuments and Sites (ICOMOS 2013) (the Burra Charter). Additionally, the NSW OEH, *Guidelines to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH 2011) has been utilised within the ACHAR, which specifies the importance of considering cultural landscape when determining and assessing Aboriginal heritage values.

Historic significance refers to associations with a place or object, which may have historical importance to a person, event, phase or activity with regard to Aboriginal and other communities. It is noted, that the study area is not known to have any historic associations.

Further, the aesthetic value of the study area is considered low due to the extensive disturbance, with both cut and fill actions identified during the survey; large amounts of illegal dumping of material; and, the construction of both tracks and drainage features throughout. However, the association of the landscape with the Lane Cove River is considered significant and is closely linked with Aboriginal cultural values and provides a context for Aboriginal sites, that gives a strong sense of place.

The significance of the study area was assessed in accordance with the following criteria:

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

- Requirements of the Code;
- The Burra Charter; and
- *Guide to investigating and reporting on Aboriginal Heritage.*

The combined use of these guidelines is widely considered to represent the best practice for assessments of Aboriginal Cultural Heritage. The identification and assessment of cultural heritage values includes the four (4) values of the Burra Charter: social; historical; scientific; and aesthetic values. A resultant statement of significance was constructed for the study area (Biosis 2019), based on the significance ranking criteria assessed in **Table 60** below.

The study area has been subject to cut and fill actions, with much of the original ground surface having been visibly altered. Within the study area, disturbance included the removal of topsoil, construction of building within the study area, and dumping and removal of contaminated fill. It is noted, that no Aboriginal sites are located within the study area due to the high levels of previous ground disturbance, for which no areas of Aboriginal archaeological potential were identified. The entire study area has therefore been assessed as having low Aboriginal archaeological potential. During the consultation process, the Aboriginal community indicated, that the general area around the Lane Cove River has significance to the community; however, the study area does not have any direct historical associations and the scientific significance of this site has been assessed as low.

Table 60: Significance Assessment Criteria		
Site Name	Criteria	Ranking
Lot 1 DP 1151370	Cultural – discussions with the local Aboriginal communities reflect that the general area is significant.	Moderate
	Historical – the Site is not connected to any historical event or personage.	Low
	Scientific – the Site possesses low archaeological values.	Low
	Aesthetic – the Site is located adjacent to the Lane Cove River. It has been impacted by multiple cut and fill actions, with much of the original ground surface being significantly altered.	Low

The proposed works will consist of bulk earthworks and site infrastructure, followed by the construction of driveways and landscaping. All of these activities will have the potential to impact Aboriginal sites. However, as mentioned above, the study area has been subject to cut and fill actions, with much of the original ground surface having been visibly altered. As there are no Aboriginal sites within the study area and the area is highly disturbed, the Proposed Development works will not impact on Aboriginal heritage values.

Avoidance of impact to archaeological and cultural heritage sites through the design of the Proposed Development is the primary mitigation and management strategy, and should be implemented, where practicable. However, due to the levels of disturbance incurred on the study area, there are no specific management and mitigation measures required. The MLALC identified intangible values in the area, which were associated with the landscape of the Lane Cove River. Therefore, the following mitigation measures are recommended in order to ensure that the proposed works do not further impact on the cultural values of the Lane Cove area. This is considered in line with the principles of Ecologically Sustainable Development (ESD) and intergenerational equity in their design.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Furthermore, after the completion of the construction phase of the Proposed Development, MLALC suggests that landscapes of native vegetation be planted and Gammerraygal names be used in any visual interpretation or signage within the gardens. This will ensure the visual amenity of the area is retained and acknowledgement of Aboriginal people as the original custodians of the area are recognised.

The recommendations stipulated below, respond specifically to the wishes of the Registered Aboriginal Parties (RAPs). These include:

Recommendation 1: No further archaeological assessment is required

No further archaeological work is required in the study area due to the entire study area assessed as having low archaeological potential.

Recommendation 2: Landscape design to include Indigenous plants

After the completion of the construction phase of the Proposed Development, it is suggested, that landscapes of native vegetation be planted and Gammerraygal names be used in any visual interpretation or signage within the gardens. This will ensure the visual amenity of the area is retained and the acknowledgement of Aboriginal people as the original custodians of the area are recognised.

Recommendation 3: Discovery of Unanticipated Aboriginal Objects

All Aboriginal objects and Places are protected under the *National Parks and Wildlife Act 1974* (NPW Act). It is an offence to knowingly disturb an Aboriginal site without a consent permit issued by the NSW OEH. Should any Aboriginal objects be encountered during works associated with the Proposed Development, works must cease in the vicinity and the find should not be moved until assessed by a qualified archaeologist. If the find is determined to be an Aboriginal object, the archaeologist will provide further recommendations. These may include notifying the NSW OEH and Aboriginal stakeholders.

Recommendation 4: Discovery of Aboriginal Ancestral Remains

Aboriginal ancestral remains may be found in a variety of landscapes in NSW, including middens and sandy or soft sedimentary soils. If any suspected human remains are discovered during any activity, the proponent must:

1. Immediately cease all work at that location and not further move or disturb the remains.
2. Notify the NSW Police and the NSW OEH's Environmental Line on 131 555 as soon as practicable and provide details of the remains and their location.
3. Not recommence work at that location unless authorised in writing by the NSW OEH.

The ACHAR can be located within **Appendix 27** of this EIS. It should also be noted, that the ACHAR located in **Appendix 27** is in its draft form, for which it will be finalised following the completion of the 28 day consultation period with the RAPs, whom are currently reviewing the draft ACHAR.

6.14 HISTORIC HERITAGE

The *Historical Heritage Assessment and Statement of Heritage Impact* (Biosis, 2018) has been prepared in accordance with current heritage guidelines, including *Assessing Heritage Significance, Assessing Significance for Historical Archaeological Sites and 'Relics' and the Burra Charter* (refer to **Appendix 26**). Accordingly, the Report provides a heritage assessment to identify if any heritage items or relics exist within or in the vicinity of the study area.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

The study area is located within the vicinity of two (2) items (refer to **Figure 52**), which are listed as being both heritage items and archaeological sites of local significance, including:

- Cumberland Paper Mills (Item No. I214 and A5), 170 Epping Road, Lot 22 DP 825400, Lots 954 and 955 DP 752067, approximately 15 m to the northeast; and,
- Chicago Mills (Item No. I215 and A6), 160 Epping Road, Lot 13 DP 807958, approximately 250 metres to the north.



Figure 52 Location of Heritage Items in the Vicinity of the Study Area (Source: Biosis, 2019)

It is important to note, that whilst **Figure 52** is a copy of the map from the LCLEP2009, the listing shown within the map are incorrect. The Chicago Mills archaeological site and heritage item are located approximately 250 m to the north of the study area and are not shown on this map. The archaeological item that is shown in light yellow should be the Cumberland Paper Mills archaeological site. The Cumberland Paper Mills heritage item is correct, shown in the darker yellow to the north east of the study area.

Current aerial imagery (refer to **Figure 53**) illustrates, that the study area has undergone significant vegetation clearing and industrial development, with the majority of the area being highly disturbed. It is noted, that the structures present in previous aerial imagery (1943) are no longer present, with sparse vegetation surrounding the edges of the study area. Within the study area, there are large piles of rubble and fill objects, heavily concentrated towards the western side of the area. Additionally, graded dirt roads appear throughout the study area, particularly towards the western side. In the southern portion there is an incised channel bank 20 m east of the southern boundary, and the eastern portion of the area backs onto a high developed light industrial area.



Figure 53 Current Aerial Showing Cleared with No Structures (Source: Biosis, 2019)

In order to fully understand the heritage significance of the study area, it is necessary to consider the character of the landscape within to which it is situated. Three (3) general landscape categories have been developed and applied by heritage organisations to assist in understanding different types of landscapes, including:

- **Designed Landscapes:** Those that are created intentionally such as gardens, parks, garden suburbs, city landscapes, ornamental lakes, water storages and campuses.
- **Evolved Landscapes:** Those that display an evolved land use in their form and features. They may be 'relict' such as former mining or rural landscapes. They may be continuing such as modern active farms, vineyards, plantations or mines.
- **Associative Cultural Landscapes:** These are landscape features that represent religious, artistic, sacred or other cultural associations to individuals or communities.

The study area is located within a broader evolved landscape, which has evolved through the development of many industries in the area. The study area has likely been utilised for activities associated with early industry in the Lane Cove LGA since the land was bought by Cumberland Paper Mills in 1912. However, while there may be both disturbed and undisturbed archaeological material associated with these activities within the study area, it is unlikely that any remains would provide further information regarding industry; activities associated with manufacture; production; and, distribution of goods that cannot be ascertained from historical documentation.

Through analysis of the above factors a number of assumptions have been made relating to the archaeological potential of the study area, for which are presented in **Table 61** below.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Table 61: Assessment of Archaeological Potential

Description	Probable Feature(s)	Possible Construction Date	Archaeological Potential
Features associated with early land ownership.	Post holes, fence lines, rubbish pits.	1834+	Low
Building in centre of the lot	Footings, associated deposits.	Early-mid 20 th Century	Low
Steel tank	Footings, cut from removal of tank.	Early-mid 20 th Century	Low

Statement of Significance:

The Level of Significance for the item 'Features associated with early land ownership' was described as Nil. Biosis provided the following statement of significance:

"The possible archaeological material associated with the early land ownership of the study area, such as post holes, fence lines and rubbish pits, are not considered an important component of the cultural history of NSW or the Lane Cove district and they are not associated with the life or works of a person(s) of importance in local or state cultural history. These possible materials will not yield information that will contribute to a greater understanding of the cultural history of NSW or the Lane Cove district, and they unlikely to demonstrate aesthetic characteristics or a high degree of creative or technical achievement in the state or local area. They do not hold a strong or special association with a community or cultural group for social, cultural or spiritual reasons in NSW or the Lane Cove district. The possible archaeological materials are not considered to possess uncommon, rare or endangered aspects of NSW or the Lane Cove district's cultural history, nor do they demonstrate the principal characteristics of a class of cultural places or environments within the state or local area. The possible archaeological materials associated with the early land ownership within the study area do not hold heritage significance."

The Level of Significance for the items described as 'Building in the centre of the lot and steel tank' were described as Nil. Biosis provided the following statement of significance:

"The possible archaeological material associated with the industrial ownership of the study area (Cumberland Paper Mills Pty Ltd and Robert Corbett & Sons), such as post holes, fence lines, rubbish pits and building foundations, are not considered an important component of the cultural history of NSW or the Lane Cove district. While the land may be associated with a group of persons (and Robert Corbett & Sons Pty Ltd) of importance to NSW and the Lane Cove district, the possible remains on this site do not reflect this. These possible materials will not yield information that will contribute to a greater understanding of the cultural history of NSW or the Lane Cove district, and they unlikely to demonstrate aesthetic characteristics or a high degree of creative or technical achievement in the state or local area. They do not hold a strong or special association with a community or cultural group for social, cultural or spiritual reasons in NSW or the Lane Cove district. The possible archaeological materials are not considered to possess uncommon, rare or endangered aspects of NSW or the Lane Cove district's cultural history, nor do they demonstrate the principal characteristics of a class of cultural places or environments within the state or local area. The possible archaeological materials associated with the industrial ownership within the study area do not hold heritage significance."

The proposed development is on land that has a low potential for archaeological items. These items would not be locally or state significant. It is however situated in the vicinity of two (2) archaeological areas and heritage items. These are the Chicago Mills and the Cumberland Paper

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Mills, as previously mentioned above. The design of the Proposed Development encompasses a number of mitigation measures that reduce the impact of the proposal on the two (2) listed heritage items of significance; however, these may not completely mitigate the impact on the heritage items. These are discussed further below:

- **Chicago Mills (Locally Significant):** The Proposed Development does not directly impact the Chicago Mills heritage values; however, it may indirectly impact the Chicago Mills heritage values.
- **Cumberland Paper Mills (Locally Significant):** The Proposed Development may directly affect the Cumberland Paper Mills heritage values as an archaeological area. However, with the precautions for the archaeological area this will be minimal.

The Proposed Development may indirectly affect the Cumberland Paper Mills heritage values as a heritage item; however, with the precautions for the archaeological area this will be minimal.

The impacts anticipated to the study area with regard to the Proposed Development are considered acceptable, as there are no items of heritage significance within the study area that will be impacted by the proposed works, provided that an unexpected finds policy is implemented to identify and record any archaeological material that may be encountered during the proposed works.

The following recommendations have been provided by Biosis, based on the conclusions drawn above. They include:

Recommendation 1 – No Further Assessment Required:

This assessment has identified no items of heritage significance or archaeological potential within the study area, and minimal heritage impacts to surrounding heritage items. As such, no further assessment is required prior to the approval of this SSDA. Prior to any ground disturbance occurring within the study area, an unexpected finds procedure should be implemented as outlined in Recommendation 2.

Recommendation 2 – Development of an Unexpected Finds Procedure:

Relics are historical archaeological resources of local or State significance and are protected in NSW under the *Heritage Act 1977*. Relics cannot be disturbed except with a permit or exception / exemption notification. Should unanticipated relics be discovered during the course of the project, work in the vicinity must cease and an archaeologist contacted to make a preliminary assessment of the find. The Heritage Council will require notification if the find is assessed as a relic.

6.15 BUSHFIRE

A *Bushfire Protection Assessment* (Travers Bushfire & Ecology, 2018) has been prepared in accordance with addressing the proposed Subject Site, with regard to the Proposed Development comprising a Data Centre (refer to **Appendix 28**). The Report has been prepared to address the bushfire hazard posed to the Proposed Development and to address the aims and objectives outlined in *Planning for Bushfire Protection 2006* (PBP).

It is noted, that the Proposed Development is adjoined by forest, remnant forested wetland and grassland vegetation to southwest, west, north and northeast, which does not expose the development to potential flame, ember and radiant heat attack. The bushfire risk posed to the Subject Site by this vegetation is reduced by the presence of saline wetland and the Lane Cove River, which is not considered to be bushfire prone. As a result, the fire run potential has been significantly reduced with full flame widths of 100 m not expected.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Notwithstanding, the bushfire risk has been mitigated with the provision of APZs to ensure defensible space is achieved in compliance with the performance criteria outlined within PBP.

PBP guidelines require the identification of the predominant vegetation formation in accordance with David Keith (2004) to determine APZ distances. The hazardous vegetation is calculated for a distance of at least 140 m from a proposed building envelope. The hazardous vegetation within 140 m of the Proposed Development consists of:

- Dry sclerophyll forest to the southwest, northwest and northeast.
- Remnant forested wetland located to the west.
- Remnant / exotic vegetation located to the northeast.
- Grassland to the north.

The Report notes, that the saline wetland and mangrove swamps associated with Lane Cove River are not mapped as bushfire prone and are unable to sustain a fire; therefore, effectively providing a fire break and limiting fire run potential.

Table 62 below provides a summary of the bushfire attack assessment undertaken.

Table 62: Bushfire Attack Assessment				
Aspect	Vegetation Formation within 140 m of Development	Effective Slope of Land	Calculated Flame Length	Defendable Space Provided (m)
Data Centre				
Southeast	Managed land / industrial development	N/A	N/A	N/A
Southwest	Forest	Level	18.6 m flame length	10
	Remnant forested wetland	5-10 ^{0D}	13.64 m flame length	
North	Forest	0-5 ^{0D}	25.03 m flame length	20-52
	Grassland	Level	7.47 m flame length	38
	Remnant / exotic vegetation	0-5 ^{0D}	10.1 m flame length	3.5
East	Forest	0-5 ^{0D} Crossslope	25 m flame length	25
Indoor Substation (Southern Property Boundary)				
Southwest	Forest	5-10 ^{0D}	34.1 m	15
North, East and West	Managed land / industrial development	N/A	N/A	>100
Office				
Southwest	Forest	Level	18.6 m flame length	74
West	Remnant forested wetland	5-10 ^{0D}	13.64 m flame length	69

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

North	Forest	0-5 ^{0D}	25.03 m flame length	25
	Grassland	Level	7.47 m flame length	>50
Northeast	Forest	0-5 ^{0D} Crossslope	25 m flame length	100
Plant Platform				
Northwest	Forest	0-5 ^{0D}	25.03 m flame length	10
North	Grassland	Level	7.47 m flame length	15
East	Forest	0-5 ^{0D} Crossslope	25 m flame length	100

Accordingly, **Table 63** tabulated below outlines the Proposed Development's compliance with the performance criteria for APZs.

Table 63: Performance Criteria for Asset Protection Zones (PBP Guidelines (pg. 19))				
Performance Criteria	Acceptable Solutions	Acceptable Solution	Performance Solution	Comment
Radiant heat levels at any point on a proposed building will not exceed 29 kW/m ²	APZs are provided in accordance with Appendix 2 of the Report. APZs are wholly within the boundary of the development site.	-	YES	Refer to Section 2.2 of the Bushfire Report. Whilst radiant heat level exposure on the data centre & indoor substation exceeds 40 kW/m ² a defensible space has been provided for fire fighting operations and the data centre will be constructed to withstand flame attack.
APZs are managed and maintained to prevent the spread of fire towards the building	In accordance with the requirements of <i>Standards for Asset Protection Zones</i> (RFS 2005)	YES	-	The APZ consists of landscaped areas, roads and turf areas.
APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is negated	The APZ is located on lands with a slope of less than 18°	-	YES	APZs are located on slopes exceeding 18°.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

The assessment undertaken has found that bushfire can potentially affect the Proposed Development from the forest, remnant forested wetland and grassland vegetation located to the southwest, west, north and north east, resulting in possible flame, ember and radiant heat attack.

Accordingly, the assessment undertaken has concluded that the Proposed Development will provide compliance with the aims and objectives of the PBP, with the implementation of the following combination of bushfire protection measures, including:

- The Proposed Development will comply with AS3959 (2009) *Construction of buildings in bushfire prone areas* (BAL FZ & BAL 40).
- Strategic location of building elements susceptible to bushfire risk.
- Management of the vegetation surround the building to ensure the new building is provided with APZs and a defensible space for firefighting operations.
- Provision of a fire trail, where topography allows, to ensure firefighting access along the northern boundary and to the east and west of the site.
- Provision of firefighting access to the road with hydrants located at strategic locations.
- Hydrants points on the roof and along the road (in flame zone locations) are provided with a 2 m high defence wall (via concrete parapet extension) at 60 m centres along the perimeter of the building to provide safety for fire fighters.
- Preparation of a bushfire emergency evacuation plan to address the bushfire risk and to outline procedures to follow during a bushfire event.

Notwithstanding, it is considered that the Proposed Development complies with the specific aims and objectives of PBP. Additionally, the following recommendations have been provided, requiring adoption as part of the Proposed Development. These include:

Recommendation 1 – *APZs are to be provided to the proposed development as identified in Schedule 1 attached. Fuel management within the APZs is to be maintained by regular maintenance of the landscaped areas, mowing / slashing in accordance with the guidelines provided in Appendix 1, and / or as generally advised by the RFS in their publications.*

It is recommended that a geo-technical report is prepared for the APZ areas on slopes of >18 degrees to ensure site stability.

Recommendation 2 – *the Data Centre will be constructed in compliance with AS3959 (2009) – Construction of buildings in bushfire prone areas, as outlined below:*

- *The data centre building is to be constructed using concrete and is to comply with BAL FZ & BAL 40.*
- *The proposed office is to comply with BAL 29.*
- *The indoor substation is to comply with BAL FZ for the southern and western elevations and BAL 40 for the northern and eastern facades.*
- *The mounted roof equipment (considered vulnerable to bushfire) has been positioned outside of areas exposed to flame zone. The equipment includes diesel gen sets (within a metal container, purpose built), water cooled chillers, and Power Train Units (PTUs) in metal containers, as well as the associated pipework which is all sheaved in metal.*
- *Service openings will be screened with a metal mesh (aperture of 2mm). This may impact on required airflow quantities and should therefore be engineered to ensure it works.*
- *Fire exists and stairs in flame zone areas are to be enclosed with fire rated doors and seals.*
- *Diesel tanks have been located underground in a 4 hour capsule and therefore has no direct exposure.*

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

- *The plant platforms (northern portion of site) are not enclosed with the equipment provided over the two (2) levels. The equipment is contained within metal containers, only metal clad pipework is exposed.*

Recommendation 3 – *Water & electricity supply is to comply with Section 4.1.3 of PBP.*

Recommendation 4 – *A bushfire emergency evacuation plan is to be prepared. This will outline the procedures for safe evacuation from the building and contact details for the emergency services.*

6.16 INFRASTRUCTURE REQUIREMENTS

ARUP Group have undertaken an assessment of the relevant infrastructure requirements for the Subject Site applicable to the Proposed Development (refer to **Appendix 29**).

Power

AusGrid have confirmed that the requested capacity and arrangement is available from a nearby 132 kV Sub-Transmission Switching Station (STSS) south of the Subject Site. Options have been provided by AusGrid as to possible overhead and underground 132 kV cable reticulation routes from the STSS to the Site 132 kV substation that is proposed as part of this SSDA on the Subject Site (refer to the Architectural Plans in **Appendix 5**).

It is noted, that the final reticulation routes, including whether diverse cable routes are required for the feeders are still under investigation. Additionally, new AusGrid easements will be required along the routes in accordance with AusGrid Standard NS 143.

As mentioned above, a new 132 kV privately owned substation will be procured to serve the Subject Site as part of this SSDA. The proposed substation will be fed by two (2) new 132 kV AusGrid feeders from the STSS to the south of the Subject Site. The substation itself will be owned by the end user and further MV and LV distribution on the Site will be a private network. The infrastructure in the substation will include:

- 3 No. 45 MVA 132/11 kV transformers. It is envisaged that 2 No. transformers will be installed initially, with the 3rd installed at a later date as the Site electrical load increases.
- A 132 kV Gas Insulated Switchgear (GIS) unit to allow for protection, control and distribution of power around the Site via an 11 kV private network.
- 3 No. Neutral Earthing Resistors to allow for reduction of the substation fault current to an acceptable level.
- 2 No. 11/0.4 kV Station services transformer to supply the electrical demands of the substation.
- Additional miscellaneous equipment relating to SCADA, protection, control and operation of the substation.

Water

An existing DIA150 Sydney Water main is present along the southern boundary of the Site at the entrances on both Sirius Road and Apollo Place. Connections at one or both of these locations should be possible. The assessment undertaken suggests, that the existing DIA150 main will be sufficient for the first phases of the Proposed Development. It is noted, that as the Site develops it may be necessary to increase the connection to DIA200.

Sewer

An existing DIA225 sewer line runs along the southern border of the Site. It is envisaged that a connection will be made along this line and will involve pumping as the Site is lower than this existing line and other nearby infrastructure. It is not envisaged that an upgrade to this line will be required.

Communications

Both Optus and NBN have infrastructure in the vicinity of the Site on Sirius Road and Apollo Place, which may be appropriate for construction and site operations. It is noted, that numerous high capacity communications connections to the Site will be needed to support the proposed Data Centre operations.

Gas

The Site does not require a gas supply.

6.17 GREENHOUSE GAS AND ENERGY EFFICIENCY

The *Lane Cove West Data Centre: SSDA Sustainability Statement* considers the overall energy consumption with regard to the Proposed Development (refer to **Appendix 30**).

The National Australian Built Environmental Rating System (NABERS) provide a star rating system for energy usage within data centres. Three (3) types of rating systems are available, including IT Equipment, infrastructure and Whole Facility. The Infrastructure rating was utilised for the Report.

The NABERS Data Centres Infrastructure rating assesses the efficiencies by comparing the following:

- Infrastructure Energy Consumption (i.e. exclusive of IT Equipment); and,
- IT Energy.

The Report converts the above points to Power Usage Efficiency (PUE) and tabulates the maximum permissible PUE with respect to each NABERS energy star rating (refer to **Table 64** below).

Table 64: NABERS Energy Stars with Permissible PUE	
NABERS Energy Stars	Maximum PUE
3 – “average benchmark”	1.88
4	1.61
4.5	1.48
5	1.34
5.5	1.2
6	1.07

6.18 ECOLOGICALLY SUSTAINABLE DEVELOPMENT

The *Lane Cove West Data Centre: SSDA Sustainability Statement* considers ESD initiatives associated with the Proposed Development (refer to **Appendix 30**). Sustainability measure that will be implemented (where deemed practicable), include:

- Power is distributed as far as practical at high voltage, reducing electrical transmission losses.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

- The proposed chillers are significantly more efficient than the minimum allowed to satisfy local code requirements.
- Rainwater harvesting – where practical, rainwater will be captured on-site and used to supply make up water to the cooling towers, in place of mains water.
- VSD drives will be used on fans and pumps allowing turndown and energy savings as part load.
- High efficiency electrical drives will be used on the various systems.
- Low flow fixtures and fittings will be used to minimise water consumption.

6.19 BUILDING CODE OF AUSTRALIA AND FIRE ENGINEERING

As demonstrated within the *Building Code of Australia Report: AirTrunk Data Centre Development – 1 Sirius Road, Lane Cove* (Mckenzie Group, 2018), the proposed Data Centre must be designed to comply with the BCA (refer to **Appendix 31**). The detailed design of the proposed Data Centre would be in accordance with the BCA and would be further assessed prior to the issue of a Construction Certificate.

The assessment undertaken of the design documentation has revealed that the following areas are required to be assessed against the relevant performance requirements of the BCA (refer to **Table 65** below). The submission for Construction Certificate will need to include verification from a suitable accredited fire engineer.

Table 65: Relevant Performance Requirements of the BCA – Fire Safety Items			
No.	Alternative Solution Description	DTS Clause	Performance Requirement
1	FRL to the structure to be rationalised from 240 mins to 120 mins, in accordance with Performance Requirement.	C1.1, Spec C1.1	CP1, CP2
2	The perimeter vehicular access to the Site will be required to be included within the Fire Engineered Solution if the option of a large isolated building is pursued as the perimeter access road is non-continuous.	C2.3, C2.4	CP9
3	Extended travel distances: ▪ 30 m to a point of choice in lieu of 20 m. ▪ 55 m to an exit where two (2) exits are available in lieu of 40 m.	D1.4	DP4, EP2.2
4	Distance between alternative exits. ▪ 90 m between alternative exits in lieu of 60 m.	D1.5	DP4, EP2.2
5	Distance of travel to, and between exits, together with a reduced egress width (with the Data Halls of up to 850 mm in lieu of 1.0 m).	D1.6	DP4, EP2.2
6	Additional fire hydrant hose lengths to provide coverage are anticipated to be required.	E1.3	EP1.3
7	Removal of fire hose reels within the data halls.	E1.4	EP1.1
8	Smoke hazard management to the development to be rationalised through the Fire Engineering Assessment.	E2.2, Spec E2.2	EP2.2
9	Exit sign mounting height to exceed 2.7 m from the FFL.	E4.5	EP4.3

The fire engineered solution relating to CP9, E1.3 and EP2.2 will be subject to consultation with the NSW Fire Brigade as part of the Construction Certificate process under Clause 144 of the EP&A Regulation.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Additionally, within the letter titled, *Fire Safety Engineering Design Review for DA Submission* (Scientific Fire Services, 2018), it confirms, that the documentation in relation to the Proposed Development will achieve fire safety design compliance to the relevant Performance Requirements of the National Construction Code Series – Volume 1, Building Code of Australia (BCA) (refer to **Appendix 32**).

Furthermore, McKenzie Group assessed the access requirements with regard to the Proposed Development (refer to **Appendix 33**). In this regard the following areas require further review as the overall project develops.

Table 66: BCA Access Requirements			
BCA Compliance Mandatory			
1.	General Access & Exemptions	Access is required to and within all areas of the building normally used by occupants.	By virtue of the proposed use of the building, it is understood that the proposal is to rationalise equitable access / circulation provision to much of the data hall space under the auspices of BCA Clause D3.4.
2.	Pedestrian Access at Boundary	A continuous accessible path is to be provided to the new building: - From the main points of a pedestrian entry at the allotment boundary; and, - From any required accessible carparking space on the allotment.	It is noted that pedestrian access provision outside of the boundary is reduced comprising: - A small footpath to the far side of the road, with no pedestrian crossing provision; and, - Footpath finishing approximately 20 m short of the entrance roadway. Coupled with the above, the level change from the boundary to the pedestrian entrance is noted to exceed 3.6 m permitted under Clause D3.11 of the BCA. Accordingly, consideration will be required to ensure operationally, staff / visitors are aware of the limitations and access is managed accordingly.
3.	Carparking	Provide accessible carparking spaces in accordance with D3.5 of the BCA. Number of accessible spaces to conform to Table D3.5. Design of space to AS/NZS 2890.6-2009. Annotate bollard in shared zone.	Annotate proposed locations of accessible carparking along with consideration as to proximity of path of travel to the Administration building.
4.	Doors	All doors within accessible spaces shall comply with AS1428.1-2009: - Clear width (850 mm) of active leaf;	As the design develops, allow to detail a supporting door schedule illustrating door leaf sizes / clear openings / hardware.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

		- Compliant door circulations spaces; - Operational force (<20N); - 30% Luminance contrast of opening.	It is initially anticipated with the current design that compliance can be achieved.
5.	Lifts	Any lift travelling >12m requires a minimum compartment size of 1400mm wide x 2000mm depth (requires 2000mm depth where stretcher use indicated and travelling >12m). Any lift travelling <12m requires a minimum compartment size of 1100mm wide x 1400mm depth. Fitout must comply with AS1735.12.	Compartment sizes indicate compliance can be achieved. Fit-out details to be reviewed in as the design develops as necessary for equitable circulation beyond the considerations in Section 1 above.
6.	Stairs – General	All general circulation stairs are to be designed to comply with Clause 11 of AS1428.1-2009: - clear width not less than 1m; - handrails both sides; - Handrail extensions; - Provision of TGSIs and nosings.	Further assessment will be required as the design develops. It is initially anticipated with the current design that compliance can be achieved.
7.	Fire Isolated Stairs	Any FIS stairs used for general circulation are to be designed to comply with AS1428.1-2009.	Further assessment will be required as the design develops. It is initially anticipated with the current design that compliance can be achieved.
8.	TGSIs	TGSIs are required to be installed in accordance with D3.8 and AS1428.4.1, to the top and bottom of every: - General circulation stair; - General circulation ramp; - Pedestrian crossings / shared roadways / car park entrances; - Vertical hazards (<2m); - Kerb ramps	Further assessment will be required as the design develops.
9.	Internal Walkways	Internal walkways / corridors are to be design to comply with D3.3 and AS1428.1 2009: ▪ minimum width of 1m;	Based on review of current documentation it is anticipated that compliance can be achieved. Further assessment will be had as the design develops.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

		- a width of 1240mm allows for side approach door circulation (door swinging away from user); - corridor terminations within 2m of end (1540mm min width); - turning spaces every 20m (1540mm min width); - passing bays every 20m where no direct line of sight (1800mm min width); - circulation spaces at directional turns.	
10.	Unisex Accessible Sanitary Facilities (UASF)	UASF to be provided on each level where one or more toilets are provided. Provide an equal distribution of LH & RH toilets / showers within the design. Design to comply with Clause 15 AS1428.1-2009: - combined WC and basin minimum of 1900x2630mm; - combined WC and shower facility: 2300x2630mm; - Refer to Figure 50 of AS1428.1 for required compartment size and layout of fixtures and fittings.	Based on commentary in Section 1 it is anticipated the provision of a UASF will be required to the Office / Admin space. Further assessment will be had as the design develops.
11.	Ambulant Cubicles	Male and Female Ambulant Cubicles are required on each level where gender facilities are provided in addition to UASF. Design to comply with Clause 16 of AS1428.1-2009.	Annotate male and female ambulant cubicles as required.
12.	Braille & Tactile Signage	BCA D3.6: Mandatory Braille and tactile signage must be provided.	Details to be reviewed as design develops.
13.	Furniture & Fixtures	Future fitout/design of fixtures, furniture and fittings should consider accessible requirements in accordance with AS1428.2:	Note for future fit-out.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

		▪ Reception / counters ▪ Common kitchens / teapoints ▪ Internal / external seating design	
--	--	---	--

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

PART G DRAFT MANAGEMENT AND MITIGATION MEASURES

By:	Greenbox Architecture
In relation to:	Proposed Data Centre – State Significant Development Application
Site:	1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Greenbox Architecture would undertake the facilitated construction and operation of the proposed Data Centre in accordance with the following:

Below prescribes some of the terms and abbreviations used in this Statement, including:

Approval	The Minister's approval of the Proposed Development
BCA	Building Code of Australia
Council	Lane Cove Council
Department	Department of Planning and Environment
EIS	Environmental Impact Statement
EP&A Act	<i>Environmental Planning and Assessment Act, 1979</i>
Greenbox	Greenbox Architecture
Project	The Proposed Development as described in this EIS
Secretary General	Secretary General of the Department (or delegate)
Site / Subject Site	Land to which the project application applies
WorkCover	NSW WorkCover

ADMINISTRATIVE COMMITMENTS

Commitment to Minimise Harm to the Environment

1. Greenbox would implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the construction or operation of the project.

Occupation Certificate

2. Greenbox would ensure a staged Interim and Final Occupation Certificate is obtained prior to the occupation of the facilities.

Terms of Approval

3. Greenbox would carry out the project generally in accordance with the:
 - a) Environmental Impact Statement;
 - b) Drawings prepared by Greenbox;
 - c) Management and Mitigation Measures;
 - d) Any Conditions of Approval.
4. If there is any inconsistency between the above, the Conditions of Approval shall prevail to the extent of the inconsistency.
5. Greenbox would ensure compliance with any reasonable requirement/s of the Secretary-General of the Department of Planning and Environment arising from the Department's assessment of:
 - a) Any reports, plans, programs, strategies or correspondence that are submitted in accordance with this Approval; and
 - b) The implementation of any recommended actions or measures contained in reports, plans, programs, strategies or correspondence submitted by the Project Team as part of the application for Approval.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Structural Adequacy

6. Greenbox would ensure that all new buildings and structures data centre buildings and ancillary offices) on the Site are constructed in accordance with the relevant requirements of the BCA.

Operation of Plant and Equipment

7. Greenbox would ensure that all plant and equipment used on the Site is maintained and operated in proper and efficient manner, and in accordance with relevant Australian Standards.

Construction Traffic Management Plan

8. Greenbox would ensure a Construction Traffic Management Plan is prepared and submitted to DP&E. This plan would:
 - a) be submitted to the Secretary-General for approval prior to the commencement of construction;
 - b) describe the traffic volumes and movements to occur during construction;
 - c) detail proposed measures to minimise the impact of construction traffic on the surrounding network, including driver behaviour and vehicle maintenance; and,
 - d) detail the procedures to be implemented in the event of a complaint from the public regarding construction traffic.

Contractors Environmental Management Plan

9. Prior to the commencement of construction, a Contractors Environmental Management Plan (CEMP) would be prepared that addresses the following:
 - a) Land Contamination;
 - b) Air Quality;
 - c) Waste Classification;
 - d) Erosion and Sediment Control; and,
 - e) Materials Management Plan

Monitoring of State of Roadways

10. The Applicant should monitor the state of roadways leading to and from the Site and should take all necessary steps to clean up any adversely impacted road pavements as directed by Council.

Waste Receipts

11. A permanent record of receipts for the removal of both liquid and solid waste from the Site should be kept and maintained up to date at all times. Such record is to be made available to authorised person upon request.

SPECIFIC ENVIRONMENTAL COMMITMENTS

Noise

12. Construction on the Site would only be undertaken between 7am and 6pm Monday to Friday, and 7am and 1pm on Saturdays. No construction would be allowed on Site on Sundays or public holidays. The following specific measures are proposed throughout the construction and operational phases of development:
 - a) Prompt response to any community issues of concern;
 - b) Noise monitoring on site and within the community;
 - c) Refinement of onsite noise mitigation measures and plant operating procedures where practical;
 - d) Preparation of a formal noise management plan including noise monitoring program;

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

- e) For equipment with enclosures (i.e. compressor rooms) ensure door and seals are well maintained and kept closed when not in use;
- f) Keep plant and equipment well maintained, regular inspection and maintenance of equipment to ensure it is good working order;
- g) Equipment not to be operated until it is maintained or repaired;
- h) Regularly train workers (ie toolbox talks) to use equipment in ways to minimise noise;
- i) Operate mobile plant in a quiet, efficient manner;
- j) Switching off vehicles and plant when not in use; and,
- k) Incorporate clear signage at the Site including relevant contact numbers for community enquiries.

13. Prior to issue of an Occupation Certificate, the following recommendations provided in the Noise Impact Assessment Report should be acknowledged and adhered to accordingly, including:

Table 67: Indicative Noise Mitigation Measures		
Item	Location	Attenuation Details
Water-cooled Chillers	Enclosure	Enclosure achieving 15-20 dB noise level reduction.
Cooling Towers	Intake / discharge / equipment reselection	A collective noise level reduction of 25-30 dB is required which is likely to require a reselection of the cooling tower type along with intake/discharge attenuators.
Diesel Generators (backup power only)	Inlet / Discharge	Gensets recommended to be specified with a maximum emission of 72 dB(A) @ 1m. Discussed further below.
	Exhaust	
	Enclosure	
Building Envelope	Walls	Precast concrete ~150 mm Doors may need to be acoustically rated dependant on location.
	Roof	Recommend concrete ~150 mm.
Transformers	Enclosure	Enclosure achieving 10-15 dB noise level reduction.

Air Construction Traffic

14. During construction:

- a) all trucks entering or leaving the Site with loads have their loads covered;
- b) trucks associated with the project do not track dirt onto the public road network; and,
- c) the public roads used by these trucks are kept clean.

Dust Management

15. During the construction phase of the project, all reasonable and feasible measures must be considered to minimise the dust generated by the project. These include:

Source	Control Measures
General	
Visual Inspection	Carry out visual inspections of the Site during site preparatory / construction activities and employ measures where necessary to minimise any visible air pollution generated by the Project.
Regular Maintenance	Regularly inspect and perform maintenance on dust control technologies (i.e. water sprays nozzles) and measures to ensure the effectiveness of these controls.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Erosion Control Structures	Silt and other material removed frequently from around erosion control structures to ensure deposits do not become a dust source.
Vegetated Buffers	Retain existing vegetation where appropriate and implement additional vegetated buffers around the boundary of the site to provide act as a physical barrier to the transport of pollutants in the direction of sensitive receptors.
Waste Materials	Cleared vegetation, demolition materials and other combustible waste material shall not be burnt on site. All waste materials be appropriately contained (in skips, bins) and covered during adverse weather conditions and handled in accordance with the site's Waste Management Plan.
Wind Blown Dust Sources	
Disturbed Areas	- Disturb only the minimum area necessary. - Stabilise all disturbed areas as soon as practicable to prevent or minimise windblown dust. - Rehabilitate disturbed areas as soon as practicable with a layer of inert material and vegetation (generally a minimum of 500mm). - Regularly assess weather conditions to identify adverse weather conditions that are unfavourable in terms of dust levels at receptor locations surrounding the Site (i.e. on dry days, during strong winds, and particularly north easterly winds blowing in direction of the school).
Stockpile/s	- Water sprays and/or covers would be employed for material stockpiles, particularly during adverse weather conditions, to minimise dust generation. - Stockpiles would be covered overnight. - Use of chemical dust suppressants would also be used where necessary. - Fencing, bunding or shelterbelts used to reduce ambient wind speeds (in some areas).
Transportation (Trucks)	- Truck loads covered with tarpaulin or lid prior to transport of dusty materials by road. - Minimise truck queuing and unnecessary trips through logistical planning of materials delivery and work practices. - Reduce vehicle / truck idling times. - Maintain a following distance of trucks of 20 seconds minimum to allow for dust clouds generated by the lead truck to dissipate. - Install a truck wheel wash or shaker grid to remove any loose dirt.
Activity Generated Dust Sources	
Internal Road Dust	- Roads and trafficked areas would be watered down using a water cart and/or sprinkler to minimise the generation of dust. - Haulage vehicles would be restricted to the most direct route and minimal manoeuvring areas to prevent indiscriminate driving over non-active areas. - Haul roads and hard stand areas would have designated speed limits (ie generally 20 km/hour). - Enforce speed limits on all on-site vehicles to minimise wheel-generated dust. - Stabilise access roads and work areas as soon as practicable to prevent or minimise windblown dust.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

	– Maintain roads on a regular basis to ensure roads are clearly marked, pot holes and corrugations are eliminated, and extra material build up is removed or redistributed on the road. – Chemical dust suppressants used where necessary.
External Road Dust	– Vehicles causing dirt track out onto main roads would be cleaned up on a regular basis to prevent this becoming an additional source of dust. – Material spillages would be cleaned up promptly.
Excavation	– Apply water sprays to trucks and loading points for dust suppression.
Loading and Dumping	– Dump heights would be minimised wherever possible (reduce to 5 m).
Plant and Equipment	– All plant and equipment used during mining activities would be maintained and operated in a proper and efficient condition. – Reduce idling times of trucks and other machinery. – Fixed plant should be located as far from local receptors as possible.
Excessive Dust Events	
Internal Roads	– Employ additional water spraying / water carts. – Further reduce speed on haul roads during high winds. – Halt traffic movements.
Stockpiles	– Cover stockpiles of material.
Project Site	– Temporarily halt activities and resume once weather conditions have improved.

Waste Management

16. Greenbox would ensure that all waste generated on-site during operation is classified in accordance with the Office of Environmental and Heritage's *Waste Classification Guidelines: Part 1 Classifying Waste* and disposed of to a facility that may lawfully accept the waste.

Erosion and Sediment Control

17. Greenbox would install silt traps during the construction phase to ensure there are no pollutants or sediments that exit the Site or unacceptable impacts that would result on surrounding vegetation or waterways.

Protection of Vegetation

18. Greenbox would mark the clearance boundaries prior to commencement of construction to ensure that there is no unnecessary removal of vegetation.

Aboriginal Heritage

19. During works, Greenbox would notify the NSW Office of Environment and Heritage should an Aboriginal site and/or object be recorded in the Aboriginal Heritage Information Management System (AHIMS).

Ecologically Sustainable Development

20. Greenbox would investigate the following ESD measures in respect of:

- a) Energy & Greenhouse Gas Emissions;
- b) Potable water reduction;
- c) Minimising waste to landfill;
- d) The Indoor Environment;
- e) Occupant amenity and comfort;
- f) Land Use & Ecology;

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

- g) Emissions; and,
- h) Building Management

Bushfire Protection

21. Greenbox would ensure that:

- a) Fire hydrants to be installed to comply with AS 2419.1 – 2005 Fire Hydrant Installations - System Design, Installation and Commissioning (AS 2419);
- b) Where overhead electrical transmission lines are installed no part of a tree should be closer to a powerline than the distance specified in "Guideline for managing vegetation near power lines" issued by Department of Energy, Utilities and Sustainability (ISSC 3, December 2005);
- c) Gas services are to be installed and maintained in accordance with AS/NZS 15962008 The storage and handling of LP gas.

PART H PROJECT DEVELOPMENT JUSTIFICATION

The Proposed Development is justified in the context of environmental, social and economic terms and is compatible with the locality in which it is proposed.

This SSD Application is lodged on the basis of:

Supporting State, Regional and Local Planning Objectives

The Proposed Development is consistent with the objectives, provisions and strategies outlined within the *A Metropolis of Three Cities – Greater Sydney Region Plan, North District Plan* and *LCLEP2009*.

Appropriate Use of an Approved Site

The Proposed Development would retain and contribute to the growth of important industry for the immediate locale as-well-as the wider region. The strengthening of this sector is an important strategy for the economic welfare of the Sydney Metropolitan Region, as-well-as the wider NSW Government Region. The Proposed Development compliments significant government investment in infrastructure and strategic planning vision as enunciated throughout State & Regional Strategies alike. The Proposed Development would be a direct response to the strategic vision (goals / objectives) for the Site, as set out in the Regional Strategies, including *A Metropolis of Three Cities – Greater Sydney Region Plan* and the *North District Plan*.

Environmental Impacts have been Minimised

Specialist consultants have assessed the risks and determined that the Proposed Development can be undertaken with minimal environmental impacts. No significant risk to the locality would result from the Proposed Development. Where impacts have been identified, these would be appropriately managed and mitigated through the compilation of mitigation measures and recommendations requiring adherence.

Compatibility with Surrounding Development

The Proposed Development use is compatible with existing uses surrounding the Subject Site on adjacent land within the Lane Cove West Business Park. The investigations undertaken as part of this SSD Application conclude, that no significant cumulative impact is to occur from the proposed use for the purpose of a Data Centre. Rather, the proposed use would be complementary to the surrounding developments within the IN2 Light Industrial zone.

Ecologically Sustainable Development

The principles of Ecologically Sustainable Development as outlined in Clause 7(4) of the EPA Regulations are addressed as follows:

- *Precautionary Principle*
No unmanageable threat or irreversible damage to the environment has been identified in relation to the Proposed Development.
- *Inter-generational Equity*
No unreasonable use of resources, affectation of environmental processes or prevention of the use of land for future generations would occur from the Proposed Development.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

- *Conservation of Biological Diversity and Ecological Integrity*
The Site remains undeveloped; however, is heavily disturbed. No processes, habitats or species outside the Site are likely to be significantly affected by the Proposed Development.
- *Improved Valuation, Pricing and Incentive Mechanisms*
The Proposed Development seeks to implement measures to avoid, contain and address any associated waste or pollution through appropriate design and management.

The Proposed Development would effectively enable improved cost efficiencies in the provision of facilitating development, for the purposes of a proposed Data Centre.

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

PART I CONCLUSION

The Proposed Development, for the purposes of a Data Centre, is defined as State Significant Development pursuant to Schedule 1 of *State Environment Planning Policy (State and Regional Development) 2011*.

Furthermore, the provisions outlined in *Lane Cove Local Environmental Plan 2009* permit the Proposed Development with the IN2 Light Industrial zone.

No adverse environmental impacts are anticipated to result from the construction or pursuant operational phases of the Proposed Development. The Proposed Development is also suitably separated from sensitive areas and would be serviced by adequate infrastructure, including a capable road network. The minor environmental impact of the Proposed Development would be ensured by the implementation of the management mitigation measures as outlined in **Part F** of this EIS, formulated in response to the findings and recommendations of the specialist's reports provided within **Appendix 4 - 38**.

The Proposed Development is consistent with the objectives, provisions and strategies outlined within the *A Metropolis of Three Cities – Greater Sydney Region Plan*, and the *North District Plan*. The Proposed Development would contribute to economic growth and prosperity in accordance with these strategies / policies by supporting private enterprise, thereby creating employment opportunities in a site earmarked for such permissible development.

Based on the findings of this EIS, the Proposed Development supports the continued development of jobs in the Sydney Metropolitan Region and contributes to the retention and growth of industrial-related development. The Proposed Development is suitable for the local context and is appropriate based on social, cultural, economic and environmental considerations.

As such, it is recommended that the Proposed Development be supported by the Department of Planning and Environment.

Appendix 1 Secretary's Environmental Assessment Requirements

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Appendix 2

Pre-DA (Pre-SEARs) Meeting Minutes

Appendix 3
Quantity Surveyors Report

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Appendix 4 Survey Plan

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Appendix 5 Architectural Plans

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Appendix 6 Landscape Plan

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Appendix 7 Landscape Design Report

Appendix 8
Landscape and Visual Impact Assessment Report

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Appendix 9 Water Quality Report

Appendix 10
Flood Assessment Report

Appendix 11

Civil Engineering Drawings and Plans

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Appendix 12 Geotechnical Report

Appendix 13
Phase 1 Due Diligence Assessment

Appendix 14

Phase 2 Acquisition Environmental Due Diligence Assessment

Appendix 15

Sampling and Analytical Quality Plan

Appendix 16
Remedial Action Plan

Appendix 17
Traffic Impact Assessment

Appendix 18
Waste Management Plan

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Appendix 19 Noise Impact Assessment

Appendix 20

Construction Noise Management Plan

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Appendix 21 **Air Quality Impact Assessment**

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Appendix 22 SEPP 33 Report

Appendix 23
Biodiversity Development Assessment Report

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Appendix 24 Tree Impact Assessment Report

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Appendix 25 Archaeological Report

Appendix 26
Aboriginal Cultural Heritage Assessment Report

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Appendix 27 Historic Heritage Report

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Appendix 28 Bushfire Report

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Appendix 29 Site Infrastructure Report

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Appendix 30 Energy Efficiency Report

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Appendix 31 BCA Report

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Appendix 32 Fire Engineering Report

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Appendix 33 Access Report

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Appendix 34 Community Consultation Report

Appendix 35
Clause 4.6 Variation – Height

Appendix 36

Lane Cove Development Control Plan 2009 Compliance Table

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Appendix 37 Options Analysis

Environmental Impact Statement

Proposed Data Centre

1 Sirius Road, Lane Cove West (Lot 1 DP 1151370)

Appendix 38 Vegetation Management Plan