43- 61 Turner Road Data Centre

Environmental Impact Statement

Final

Rev1 | February 2025

Job number 294755

Arup Pty Ltd | ABN 18 000 966 165

Arup Pty Ltd
Level 5
151 Clarence Street
Sydney
NSW 2000
Australia
arup.com

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Acronyms

Acronym	Meaning
µg/m^3	Micrograms per cubic metre
ABS	Australian Bureau of Statistics
ACHAR	Aboriginal Cultural Heritage Assessment Report
AEP	Annual Exceedance Probability
AHD	Australian Height Datum
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
AHU	Air handling unit
AM	Anti meridiem (before noon)
AQMS	Air Quality Monitoring Station
AS	Australian Standard
BC Act	*Biodiversity Conservation Act 2016*
BDAR	Biodiversity Development Assessment Report
BYDA	Before You Dig Australia
CALD	Culturally and Linguistically Diverse
CAMBA	China-Australia Migratory Bird Agreement
CBD	Central Business District
CEMP	Construction Environmental Management Plan
CIV	Capital Investment Value
CO	Carbon monoxide
CO2e	Carbon dioxide equivalent
COPC	Contaminants of potential concern
CP	Communication Plan
CPTED	Crime Prevention Through Environmental Design
CSIRO	Commonwealth Scientific and Industrial Research Organisation

Acronym	Meaning
CTMP	Construction Traffic Management Plan
DA	Development Application
dBL$_{A90}$	The sound level exceeded for 90% of the measurement period. The L_{90} is often defined as the 'average minimum' or 'background' noise level for a period of measurement. For example, 45 dBL$_{A90}$,15min indicates that the sound level is higher than 45 dB(A) for 90% of the 15-minute measurement period.
dBL$_{Aeq}$	The equivalent ('eq') continuous sound level, used to describe the level of a time-varying sound or vibration measurement. The L_{eq} is often defined as the 'average' level, and mathematically, is the energy-average level over a measurement period – i.e. the level of a constant sound that contains the same sound energy as the measured sound.
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DCP	Development Control Plan
DECC	Department of Environment and Climate Change
DECCW	Department of Environment, Climate Change and Water
DEWHA	Department of the Environment, Water, Heritage and the Arts
DIPNR	Department of Infrastructure, Planning and Natural Resources
DoS	Degree of Saturation
DP	Deposited Plan
DPE	Department of Planning and Environment
DPHI	Department of Planning, Housing and Infrastructure
EIS	Environmental Impact Statement
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	Environmental Planning and Assessment Regulation 2021
EPA	Environment Protection Authority
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPI	Environmental Planning Instrument
EPL	Environmental Protection License
ESD	Ecologically Sustainable Development
EV	Electric vehicle

Acronym	Meaning
GTP	Green Travel Plan
HV	Heavy vehicle
IAP2	International Association for Public Participation
ICOMOS	International Council on Monuments and Sites
ID	Identification
IPC	Independent Planning Commission
ISL	Immediate Social Locality
IT	Information technology
JAMBA	Japan-Australia Migratory Bird Agreement
ROKAMBA	Republic of Korea-Australia Migratory Bird Agreement
kL	Kilolitre
kV	Kilovolt
LED	Light-emitting diode
LEP	Local Environmental Plan
LGA	Local Government Area
LoS	Level of Service
LSPS	Local Strategic Planning Statement
LV	Light vehicle
m	Metre
m/s	Metres per second
mAHD	Metres Australian Height Datum
MNES	Matters of National Environmental Significance
Mt	Mgatonnes
MUSIC	Model for Urban Stormwater Improvement Conceptualisation
MW	Megawatts
NABERS	National Australian Built Environment Rating System
NGER	National Greenhouse and Energy Reporting
NO_2	Nitrogen dioxide

Acronym	Meaning
NO_x	Nitrogen oxides
NPfI	Noise Policy for Industry
NPI	National Pollutant Inventory
NSW	New South Wales
O_3	Ozone
OEMP	Operational Environmental Management Plan
PAD	Potential Archaeological deposit
PAH	Polyaromatic hydrocarbons
PBP	Planning for Bush Fire Protection (NSW Rural Fire Service, 2019)
PCT	Plant Community Type
PHA	Preliminary hazard analysis
PM	Particulate matter
PM_{10}	Particulate matter with a diameter of 10 micrometres or less
$PM_{2.5}$	Particulate matter with a diameter of 2.5 micrometres or less
POEO Act	*Protection of the Environment Operations Act 1997*
RAP	Registered Aboriginal Party
RFS	NSW Rural Fire Service
RSVP	"Please respond"
SEARs	Secretary's Environmental Assessment Requirements
SEIFA	Socio Economic Indexes for Areas
SEPP	State Environmental Planning Policy
SEPP WPC / WPC SEPP	Western Parkland City State Environmental Planning Policy
SIA	Social Impact Assessment
SIDRA	Signalised Intersection Design and Research Aid
SO_2	Sulfur dioxide
SSD	State Significant Development
SSL	Secondary Social Locality

Acronym	Meaning
t	Tonne
TfNSW	Transport for NSW
TISEPP	Transport and Infrastructure State Environmental Planning Policy
TSSC	Threatened Species Scientific Committee
TUFLOW	Two-dimensional Unsteady FLOW
UN	United Nations
UPS	Uninterrupted power supply
VOC	Volatile organic compounds
VP	Viewpoint
VRLA	Valve Regulated Lead Acid
WELS	Water Efficiency Labelling and Standards
WPCA	Western Parkland City Authority
WSUD	Water Sensitive Urban Design

Summary

This Environmental Impact Statement (EIS) has been prepared by Arup, in support of a State Significant Development (SSD) Application, for the proposed construction and operational use of a Data Storage Centre, at 43-61 Turner Road, Gregory Hills, NSW 2557.

Development Consent under this Proposal is sought for the construction and operational of a Data Centre pertaining to the following scope of works:

- Construction and operation (24/7 basis) of a Data Centre building reaching about 23 metres high, comprising of data halls, mechanical and electrical equipment rooms, offices, a substation, a security gatehouse, other ancillary support spaces, and external/rooftop mechanical and electrical equipment.
- 27 back-up diesel generators that generate electricity for less than 200 hours per annum as well as lithium-ion batteries in the data halls that would operate in the event of a power outage.
- There are 68 car parking spaces (of which five would have EV charging), 2 car parking spaces that are compliant with the *Disability Discrimination Act 1992*, and 10 shared bicycle parking spaces.
- Associated internal access roads.

The Site is located within the Camden Local Government Area (LGA) and is zoned IN1 General Industrial under the *State Environmental Planning Policy (Precincts – Western Parkland City) 2021* (SEPP WPC). Data storage facilities are a form of development permitted with consent in this zone as provisioned under Division 3, Clause 2.31 of SEPP (Transport and Infrastructure) 2021.

The Proposal is estimated to consume approximately 53MW. Therefore, it triggers the proposal as a State Significant Development (SSD) under the Schedule 1 of the State Environmental Planning Policy (Planning Systems) 2021 as it is greater than 15 MW.

This EIS has been prepared in accordance with the EP&A Act to address the relevant provisions of Schedule 2 of the EP&A Regulation 2000 and Section 190 of the updated EP&A Regulation 2021. It also responds to both the industry specific SEARs (SSD-68013714) for data storage centres issued by DPHI on 1 March 2024, as well as the State Significant Development Guidelines (DPHI, 2024b).

Based on the findings of this EIS, the Proposal can successfully support a Data Centre under this SSD Application, with acceptable environmental impacts. The Proposal will provide positive social and economic benefits to the area and deliver an increasingly important cloud and data storage service to the broader community. With its industrial character and setting, it will complement the existing and future industrial character envisaged for the Site and surrounding industrial land uses.

Declaration by the relevant person

Project details	
Project name	43- 61 Turner Road Data Centre
Application number	SSD-68013714
Address of the land in respect of which the development application is made	43- 61 Turner Road, Gregory Hills
Applicant details	
Applicant name	Arup Pty Ltd
Applicant address	Level 5, 151 Clarence Street, Sydney 2000
Details of person by whom this EIS was prepared	
Name	Christopher Serrano
Address	Level 5, 151 Clarence Street, Sydney 2000
Professional qualifications	B. Environment, CEnvP
Declaration by registered environmental assessment practitioner	
Name	Chris Fay
Registration Number	80001
Organisation registered with	Arup
Declaration	The undersigned declares that this EIS: • Has been prepared in accordance with the Environmental Planning and Assessment Regulation 2021 • Contains all available information relevant to the environmental assessment of the development, activity or infrastructure to which the EIS relates • Does not contain information that is false or misleading • Addresses the Planning Secretary's environmental assessment requirements (SEARs) for the project • Identifies and addresses the relevant statutory requirements for the project, including any relevant matters for consideration in environmental planning instruments • Has been prepared having regard to the Department's State Significant Development Guidelines - Preparing an Environmental Impact Statement • Contains a simple and easy to understand summary of the project, having regard to the economic, environmental and social impacts of the project and the principles of ecologically sustainable development

- Contains a consolidated description of the project in a single chapter of the EIS
- Contains an accurate summary of the findings of any community engagement
- Contains an accurate summary of the detailed technical assessment of the impacts of the project as a whole

Signature 

Date 7th February 2025

1. Introduction

This Chapter outlines the context for detailed assessment of a proposed data centre at 43-61 Turner Road, Gregory Hills as presented in this impact statement (EIS).

1.1 Purpose of this report

This EIS has been prepared in accordance with the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) to address the relevant provisions of Division 5 of the NSW Environmental Planning and Assessment Regulation 2021 (EP&A Regulation 2021). It also responds to both the industry specific Secretary's Environmental Assessment Requirements (SEARs) for data storage centres as issued by the NSW Department of Planning, Housing and Infrastructure (DPHI) on 1 March 2024, SEARs No. SSD-68013714 and the State Significant Development Guidelines (DPHI, 2024b).

This EIS assesses all potential environmental impacts associated with the proposed construction and operation of a 53 megawatt data storage centre at 43-61 Turner Road, Gregory Hills (the Proposal), in accordance with Division 5.1 of the EP&A Act.

The community, Government agencies and other interested parties will be provided with the opportunity to comment on the Proposal through public exhibition of the EIS. Feedback and comments will be considered, and responses will be provided in the Response to Submissions Report. Based on feedback and comments, if any adjustments, refinements, or amendments to the Proposal are required, these would be clarified in the Response to Submissions Report.

Chapter 4 provides further detail regarding the assessment process.

Table 1-1 outlines the Applicant's details and Table 1-2 provides a summary of the EIS structure.

Table 1-1: Applicant details

Aspect	Applicant Details
Full Name(s)	Arup Pty Ltd
Postal Address	Level 5, 151 Clarence Street, Sydney, NSW 2000
ABN	18 000 966 165

Table 1-2: EIS structure

Chapter	Description
Chapter 1 Introduction	Chapter 1 sets the context for the detailed assessment of the Proposal. It provides a simple description of the Proposal and its objectives, need, benefits, and capital investment value. It briefly describes the background to the Proposal and the strategies taken to avoid, minimise, or offset impacts. It also describes any related development and why the data centre would be built without the need for voluntary or negotiated agreements or benefit-sharing schemes.
Chapter 2 Strategic Context	Chapter 2 identifies the key strategic issues that are relevant to the assessment of the Proposal. It justifies how the Proposal is strategically supported under Government policies and plans. It describes the key features of the Site and surrounding area that could affect, or be affected by, the Proposal and whether there is the potential to generate cumulative impacts in combination with other developments. The Chapter also describes the feasible alternatives and options that were considered and discounted and the reasons for this.
Chapter 3 Proposal Description	Chapter 3 provides a comprehensive and consolidated description of the Proposal that is the subject of the development application.

Chapter	Description
	It provides an overview and description of the built form, describes the planned construction methods and operational procedures and outlines those elements that remain flexible and how these have been assessed in the EIS under a worst-case scenario.
Chapter 4 Statutory Context	Chapter 4 identifies the relevant statutory requirements that the Proposal would be subject to and summarises the Commonwealth and State laws, planning instruments, and policies that will be relevant to managing the Proposal during its construction and operation.
Chapter 5 Engagement	Chapter 5 summarises the findings of the consultation carried out when preparing the EIS and the planned future engagement activities that will take place before and during construction and once the Proposal is operational. It describes the public, stakeholder and Government agency consultation that has been carried out to date and how feedback has influenced the Proposal. It also describes how consultation and participation would continue to have an influence in the future and how complaints and feedback would be managed and actioned going forward.
Chapter 6 Assessment of Environmental Impacts	Chapter 6 provides a detailed summary of the results of the assessment of potential impacts. It describes the existing environmental values onsite and locally. It then focusses on the key environmental impacts that are predicted to occur. It describes the measures that would be used to avoid, minimise, or offset these along with their effectiveness. The Chapter also describes the monitoring and additional assessment that would be carried out to verify and validate the uncertainty surrounding elements of the impact assessment.
Chapter 7 Justification	Chapter 7 provides a justification and evaluation of the Proposal as a whole. It considers if the economic, environmental, and social benefits outweigh its impacts in the short and long-term accounting for the principles of ecologically sustainable development (ESD).
Chapter 8 References	Chapter 8 provides a list of the documents and reports referenced in the EIS.

The EIS is supported by 26 Appendices as listed in Table 1-3.

Table 1-3: Supporting Appendices

Appendix	Name
A	SEARs Table
B	Architectural Drawings
C	Statutory Compliance Table
D	Engagement Report
E	Landscape Plan
F	Summary of mitigation and management measures
G	Visual Impact Assessment Report
H	Traffic and Transport Assessment Report
I	Accessibility Report
J	Ecologically Sustainable Development (ESD) Report
K	Biodiversity Assessment
L	Air Quality Technical Report
M	Noise and Vibration Assessment Report
N1	Preliminary Site Investigation
N2	Detailed Site Investigation
N3	Groundwater Assessment Report
N4	Site Contamination Assessment

Appendix	Name
N5	Geotechnical Report
O	Surface Water Management and Flood Impact Assessment
P	Resilience and Hazards SEPP Screening
Q	Bushfire Report
R	Waste Management Plan
S	Aboriginal Cultural Heritage Assessment Report (ACHAR)
T	Social Impact Assessment Report
U	Infrastructure and Services Report
V	Cost Summary Report / Quantity Surveyor Report
W	Building Code of Australia Report
X	Design Report
Y	Survey Plan
Z	Early Works Development Application (DA/2024/616/1)
AA	Clause 4.6 Variation Request

1.2 Proposal overview

Table 1-4 provides a high-level overview of the Proposal and Chapter 3 provides a more detailed overview.

Table 1-4: Proposal overview

Item	Description
The Proposal	The construction of a data storage centre comprising of data halls, mechanical and electrical equipment rooms, offices, a substation, a security gatehouse, other ancillary support spaces, and external/rooftop mechanical and electrical equipment. The proposal would have a total power demand of approximately 53 megawatts (MW) when fully operational.
The Site	The Proposal is located at 43-61 Turner Road in the suburb of Gregory Hills, NSW 2557. The Site comprises four lots of lands (Lot 14, 15, 16, and 17, DP 2802) and covers 9.74 hectares (ha). It is located within the Camden Council Local Government Area (LGA) and is located approximately 45 kilometres southwest of the Sydney central business district (CBD), and about three kilometres north-east from the Narellan Town Centre.
State Significant Development (SSD) Trigger	As the proposed data storage centre building will have a capacity of over 15 MW at 53 MW, it triggers the threshold meaning it classifies as a State Significant Development (SSD) under the Schedule 1 of the State Environmental Planning Policy (Planning Systems) 2021. The Site is zoned (IN1) General Industrial use under State Environmental Planning Policy (Precincts – Western Parkland City) 2021 (SEPP WPC). Data storage facilities are a form of development permitted with consent in this zone as provisioned under Division 3, Clause 2.31 of State Environmental Planning Policy (Transport and Infrastructure) 2021.
Estimated development cost	The Proposal's estimated development cost is about $800M (excl. GST, see Appendix V | Cost Summary Report/Quantity Surveyor Report) for further details.

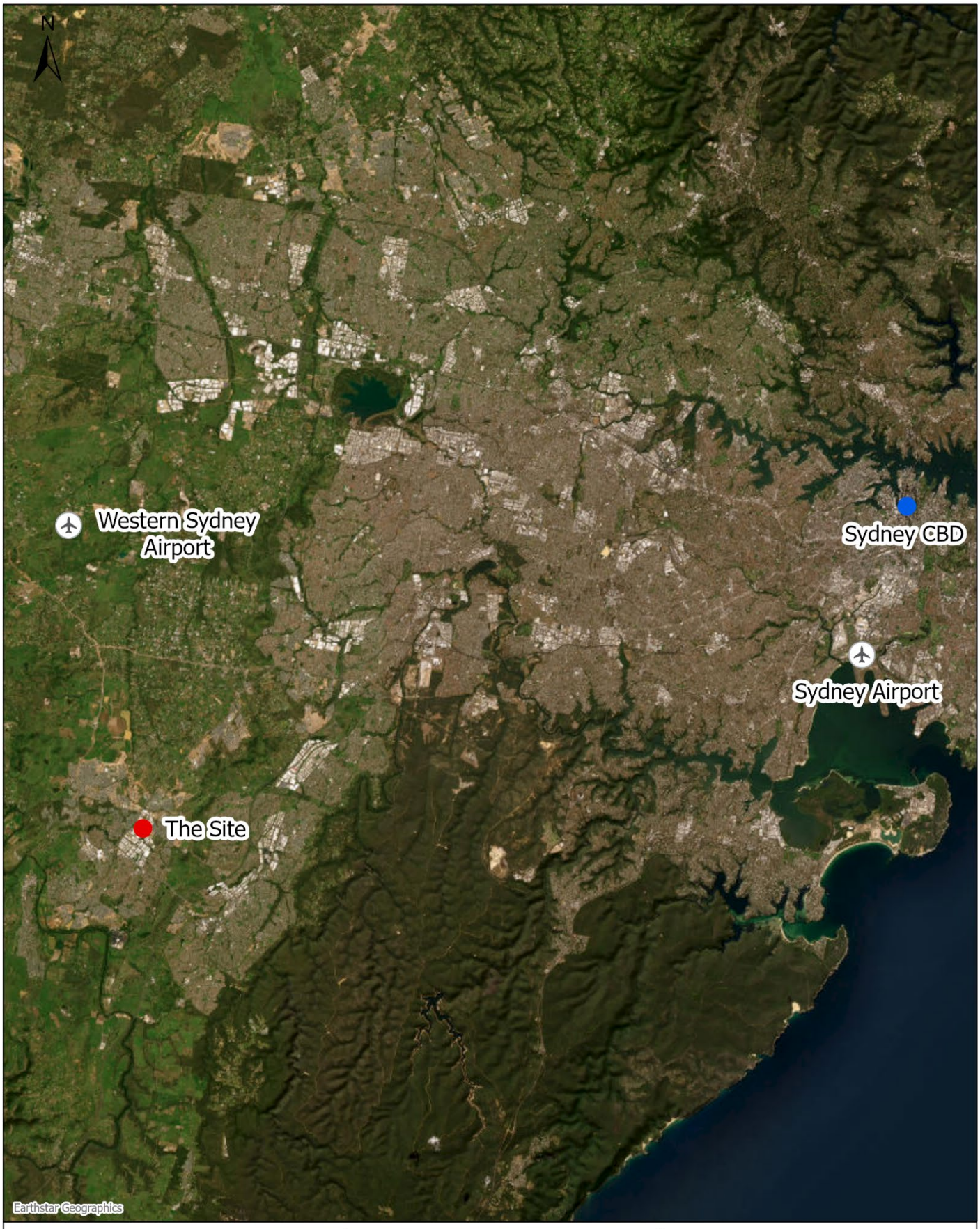
1.3 Background and history

The Site has only been used for rural residential development based on historic aerial imagery from the 1940s onwards. However, the Site is currently unoccupied following its acquisition by the applicant in 2023. Table 1-5 below summarises the extant development applications applicable to the Site.

Table 1-5: Extant and pending development applications

Previous development applications	Description
Extant DA/2022/492/1 | Demolition of existing structures, tree removal, remediation of contaminated land, subdivision to create 23 industrial lots and one residue lot, public road construction and associated Site works.	The application applied to 43-61 and 67 Turner Road and 37B and 48 Central Hills Drive, Gregory Hills, and proposed the subdivision of the Site. Several documents and environmental studies were prepared for this application. The DA was approved by the Sydney Western City Planning Panel on 11 May 2023. Works under this DA have not progressed since the site was purchased. This DA will be modified or surrendered prior to obtaining SSD approval.
Pending DA/2024/616/1 | Site preparatory works for future industrial development including construction of roads, bulk earthworks, drainage and stormwater infrastructure, retaining walls and remediation.	Refer to Section 1.4.

Figure 1-1 shows the regional context, and Figure 1-2 shows the Proposal location.



Legend

- The Site
- Sydney CBD
- Airport

Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere

0 2,000 4,000 8,000 Metres

ARUP

151 Clarence Street
Sydney NSW 2000
Tel +61 2 9320 9320
www.arup.com

Client
Confidential

Project Name
43-61 Turner Road Data Centre

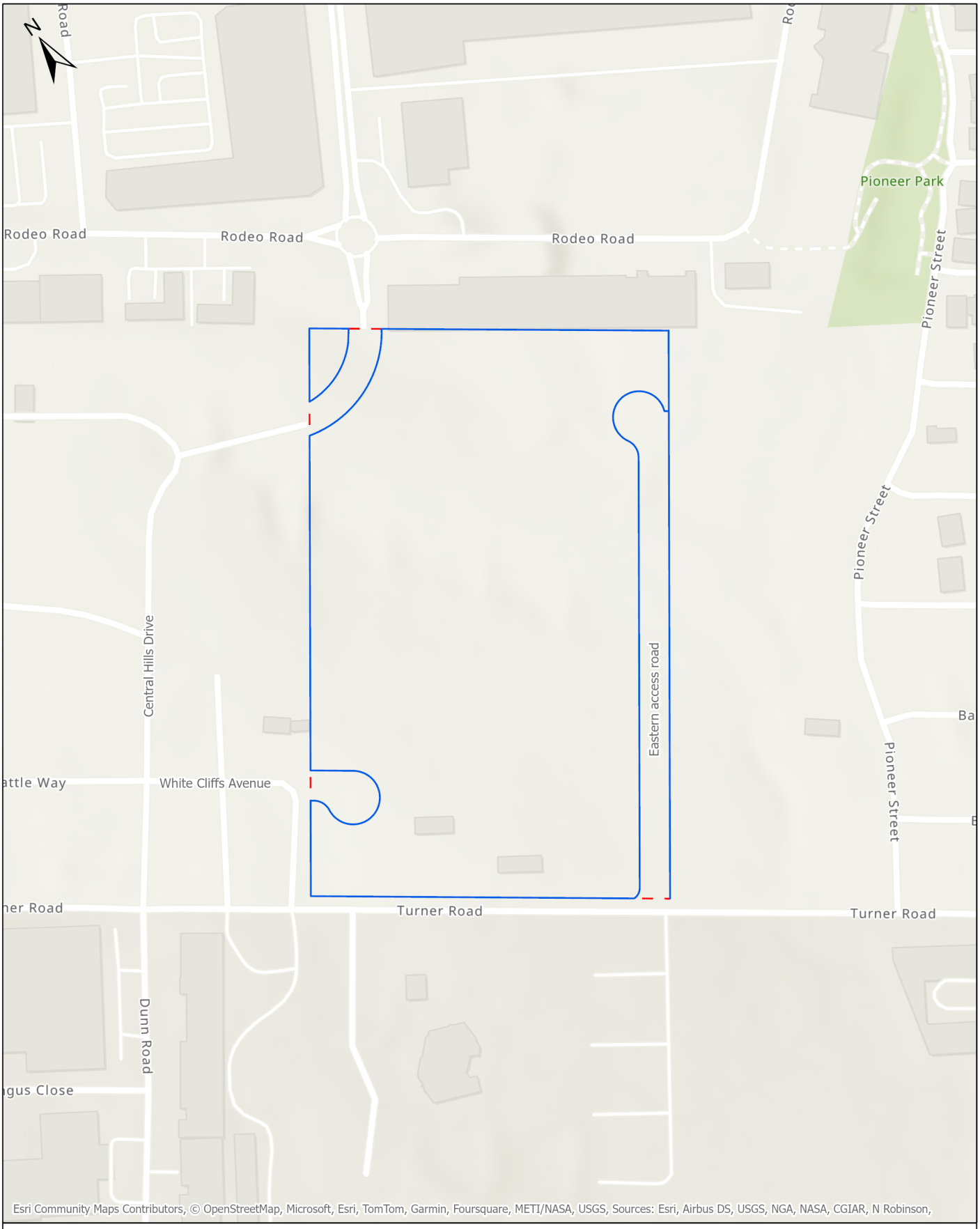
Drawing Title
Regional context

Scale at A4
1:340,437

Project Number
299816-00

Figure No.
1-1

Rev	Date	By	Chkd	Appd	Authd
A	24/09/24	MD	CS	CS	CS



Legend

- Proposal area
- Site boundary

Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere

0 25 50 100 Metres

ARUP

151 Clarence Street
Sydney NSW 2000
Tel +61 2 9320 9320
www.arup.com

Client
Confidential

Project Name
43-61 Turner Road Data Centre

Drawing Title
Proposal location

Scale at A4
1:4,313

Project Number
299816-00

Figure No.
1-2

Rev	Date	By	Chkd	Appd	Authd
A	24/09/24	MD	CS	CS	CS

1.4 Related development

A separate development application (DA) is being lodged with Camden Council for the site preparation and early works that relates to the future industrial use of the Site as a data storage centre. The proposed works forming part of the development application (DA/2024/616/1) are:

- Demolition of existing structures and site rehabilitation and remediation
- Clearing of existing vegetation to enable proposed works
- Dewatering and infilling of existing farm dams.
- Provision of retaining structures to support civil earthworks, roadworks, pads for future proposed industrial development.
- Temporary grading within site including key retaining wall separating upper and lower platforms of future industrial development including temporary erosion and sediment control measures such as swales and sediment basins.
- Inground services to support future proposed industrial development.
- Establishment of a new stormwater drainage easement along northern boundary including below ground stormwater pit and pipe network to serve flows from upstream catchment.
- Upgrades to Turner Road including new kerb, gutters, street lighting and shared path along the frontage of the site
- Construction of new Council adopted roads including:
    - White Cliffs Avenue Turning Head – including stormwater connection to existing stormwater pit under White Cliffs Avenue Road.
    - Central Hills Drive Road Connection – including stormwater connection to existing upstream catchment and all required services for adoption.
    - Eastern Access Road with associated stormwater infrastructure including two stormwater outfalls to the riparian corridor east of the site. Works also include infrastructure such as sewer, LV, telecoms. Road construction includes retaining wall along eastern boundary.

1.5 Proposal objectives

The Proposal's objectives are to:

- Support the ongoing demand for internet usage and data storage for customers within the Sydney and NSW area
- Deliver economic benefits and employment generation for the area
- Construct and operate the Proposal in a sensitive and responsible manner, in relation to the environment and the health and safety of all staff and the surrounding locality.

1.6 Proposal needs and benefits

Data centres are a critical part of modern cities as they underpin our move towards a digital economy. They connect people to vital services and each other, and allow access to enormous quantities of information, anytime and anywhere. Increasing demand for data centres is recognised by the NSW Government (see Section 2.5).

Data centres support the need for increasing demand for:

- Digitisation of services
- High-speed wireless networks
- Data archiving and cloud storage
- Data-intensive technologies
- Remote working and cloud-based working.

Data centres support all aspects of society and business including commerce and industry and essential services such as hospitals, schools, energy and utility providers, banking, and transport services. Data centres benefit society by providing a cost effective, easy to access, secure, protected (i.e., backed-up) and available cloud storage solution.

1.7 Secretary's Environmental Assessment Requirements

A Scoping Meeting was held with the DPHI on 1 February 2024 to discuss the key issues to be further assessed in the EIS ahead of requesting to make use of the Industry Specific SEARs under the Rapid Assessment Framework on 1 March 2024, DPHI confirmed that the EIS could be prepared under SEARs (SSD-68013714). The full SEARs, along with where and how each item has been addressed, is included as Appendix A (SEARs table) to this EIS.

1.8 Key strategies to avoid, minimise or offset the Proposal's impacts

The overall strategy to avoid unnecessary impacts, to minimise potential impacts and to offset the Proposal's unavoidable impacts was to develop a Site that had been zoned for industrial uses. As such, the Proposal would be built in a location where the sensitivity of the receiving environment would be more favourable and accommodating to support building a data centre.

The Proponent has a long history of building similar infrastructure globally. It has standardised equipment schedules and design specifications that offer credible environmental and sustainable performance. These are detailed in Appendix J (Ecologically Sustainable Development Report). Examples of the Proponent's design specifications, which serve to avoid, minimise, otherwise offset impacts are:

- *Rainwater recycling* | Measures to minimise water consumption include onsite rainwater harvesting. This is predicted to capture 150 kilolitres of rainwater, which would offset the water demand required to cool the data halls.
- *Energy monitoring* | The installation of energy monitors would allow targeted management strategies to be implemented to reduce consumption.
- *Refrigerant use reduction* | The use of rainwater harvesting would reduce the need for refrigerants that are used in conventional mechanical cooling.
- *Equipment selection and optimisation* | The equipment installed onsite has been selected from global specifications set by the Proponent based on low-emission technology. This will be complemented by operational performance specifications that require the equipment to be routinely monitored, tested, and serviced. While this is carried out to ensure a continuity of power supply to the Site, it is also used to make sure the equipment operates within manufacturer performance specifications. This optimal performance requirement means it would minimise the emissions from the Site. Appendix U (Infrastructure and Services Report) and Appendix X (Design Report) describe this in more detail.

2. Strategic Context

This Chapter outlines the key strategic items that relate to the Proposal.

2.1 Site location, context, and characteristics

The Site (Lot 14, 15, 16, and 17, DP 2802) is located at 43-61 Turner Road, Gregory Hills in the Camden Council LGA. The land parcel is approximately 9.74 hectares (ha). The Proposal, including the data centre building, carpark and other ancillary features will occupy about 65 per cent of the land parcel.

The Proposal has a street frontage along Turner Road, which would be landscaped according to Appendix E (Landscape Plan). The data centre building will be set back about 22 metres from Turner Road.

Vehicle access to the Site will be located off Turner Road via a new eastern access road with an entry and exit point. A separate emergency entry and exit point would also be established off Turner Road, providing an alternate emergency access point to the Site. A security gatehouse will be built to ensure secure access to the data centre as part of the Proposal.

2.2 Site and surrounds

The following section describes the key features of the site and surrounds that could affect, or be affected by, the Proposal.

2.2.1 Context

Historically, the Site has likely been used for agricultural purposes, where structures and buildings were progressively constructed over time. Currently, the Site is vacant of buildings and trees, and overgrown with various types of semi-arid vegetation. Five farm dams containing water remain present onsite. Historical investigations (see section 5.2 of Appendix N1, Preliminary Site Investigation) indicate that the wider area began developing when the first road (Turner Road) was established in 1961, and residential and industrial developments were established in the areas surrounding the Site in 1965. Since 2016, the properties immediately surrounding the Site have been subjected to major commercial industrial developments in line with the rezoning as part of the Turner Road Precinct.

The Site is zoned IN1 General Industrial under SEPP WPC. Data storage facilities are permitted in this zone under Division 3, Clause 2.31 of State Environmental Planning Policy (Transport and Infrastructure) 2021. The Site is within a predominantly industrial setting with land to the north zoned B5 Business Development and IN1 General Industrial and the land to the south and east zoned as E4 General Industrial and E3 Productivity Support. More broadly, residential areas are located to the northeast and southeast of the Site, and to the west of Camden Valley Way and south of Narellan Road, as detailed below in section 2.3. Camden Valley Way and south of Narellan Road are both zoned as SP2 Infrastructure. Areas of C2 Environmental Conservation include Harrington Forrest to the northwest and Caulfield Reserve to the east. Figure 4-1 shows the current land zoning and uses described above.

Additionally, a tributary of Kenny Creek is located 55 metres to the east of the Site, with actual Creek flowing to the south where it joins Narellan Creek about 600 metres south of the Site. Narellan Creek flows to the southwest where it joins the Nepean River at Camden Weir about 5.5 kilometres southwest of the Site.

The Site is located approximately 45 kilometres southwest of the Sydney CBD, six kilometres northwest of Campbelltown, three kilometres northeast from the Narellan Town Centre and six kilometres northeast from Camden Town Centre. Its location provides convenient access to Camden Valley Way, which is about 2 kilometres north of Camden Bypass, Narellan Road and The Northern Road. These major roads connect the Site to Narellan, Campbelltown, and farther to Picton, Penrith, and Liverpool. The Site is also linked locally within the Turner Road Precinct via White Cliffs Avenue and Central Hills Drive.

Public transport facilities are present with the nearest bus stop is an eight-minute walk from the Site. Active transport such as walking or cycling routes are limited in the surrounding area, with the nearest cycleway located along Camden Valley Way.

2.2.2 Characteristics

The Site generally slopes 13 metres downward from the northwest corner to the southeast corner. Ground elevations vary from around 91 to 104 metres Australian Height Datum (AHD) in line with the general northwest to southeast topography.

The eastern portion of the Site is within areas mapped as medium bushfire risk vegetation and buffer zone (see section 6.4).

There are several established and new residential centres located within the surrounding area:

- *Gregory Hills* | Recently established residential areas in Gregory Hills. The nearest resident would be about 150 metres to the east of the Site.
- *Harrington Park* | An established residential area with several reserves and golf clubs. The nearest residents from Harrington Park are located about 450 metres to the west of the Site.
- *Currans Hill* | An established residential area with several reserves and schools. Currans Hill is located about one kilometre to the southeast of the Site.

The key land uses immediately surrounding the Site are all industrial and commercial in nature:

- *North* | Several commercial and industrial warehouses and facilities.
- *South* | South of Turner Road there are industrial facilities for about 1.5 km such as car repair stores, construction and housing supply stores, and warehouses (e.g. Australia Post – Gregory Hills Business Centre).
- *East* | Vacant land, industrial facilities and planned residential areas for about 700 metres to the east of the Site.
- *West* | Industrial land use (e.g. car repair stores and dealerships). Camden Valley Way is about 500 metres to the west of the Site.

Figure 4-1 shows the surrounding land uses described above.

2.3 Generation of cumulative impacts

This EIS assesses the potential environmental impacts of the Proposal during its construction and operation. The Proposal would be built in an area that is subject to future industrial development and as such, the existing environment will change over time.

This also means that there are other committed and approved developments that are not yet built and may be built during similar timeframes as the Proposal. This could result in a different impact outcome than just building the Proposal on its own. These are referred to as cumulative impacts. Section 6.15 considers the

combined cumulative impact of these developments along with those generated from the wider development taking place in the area.

2.4 Relevant plans

The following section describes the strategic Government plans that are relevant to the Proposal and Site in terms of providing a regional and local land use planning context.

2.4.1 Greater Sydney Region Plan

The Greater Sydney Region Plan, A Metropolis of Three Cities (Greater Sydney Commission, 2018a), the Region Plan) is a 20-year plan to manage the long-term growth and change for Greater Sydney in the context of social, economic, and environmental matters. The Plan aims to align infrastructure and growth to restructure economic activity and access across three cities: the Western Parkland City, the Central River City and the Eastern Harbour City. The Proposal is in the Western Parkland City.

The Western Parkland City will be established around the new Western Sydney International Airport and Badgerys Creek Aerotropolis and is expected to grow significantly from a population of 740,000 in 2016 to over 1.5 million by 2056.

The Western Parkland City has been proclaimed as the "economic powerhouse of Greater Sydney" (TfNSW, 2024). The Plan recognises the need for technology industries and the role they play in supporting the digital economy. The Plan therefore supports the Proposal's location to service the Western Parkland City.

The Smart Western City Program (NSW Government, 2021) is one of four Digital Connectivity and Smart Technology commitments in the Western Sydney City Deal that outlines the infrastructure, services and resources needed to ensure smart technologies help deliver a vibrant and liveable Western Parkland City. The Program supports the Proposal, as the data centre would be part of the digital "infrastructure, services, and resources needed to ensure the Western Parkland City is a future-focused [and] digitally enabled city".

2.4.2 Western City District Plan

Our Greater Sydney 2056: Western City District Plan (the District Plan) (Greater Sydney Commission, 2018b) was publicly released with the Region Plan. The District Plan covers the Camden LGA and the Site.

Growth Areas are locations where there is heightened demand for a variety of employment opportunities, infrastructure, and services that have been featured in the District Plan. The Proposal is located within the South West Growth Area and would offer a key role in supporting its development by providing the needed digital infrastructure.

The Proposal is strategically supported under Planning Priority W8 in the above Plan, leveraging industry opportunities from the Western Sydney Airport and Badgerys Creek Aerotropolis, as it would bring the needed 'digital technologies' to support a knowledge-intensive economy. The Proposal is therefore part of the District Plan's aim to support and drive tens of thousands of new jobs in 'knowledge-intensive industries to diversify the economy and attract a skilled workforce'. Planning Priority W8 also recognises that 'rapid technological changes and digital advancements are disrupting established business models and workplace'. The Proposal indirectly underpins these needs as it supports the transition to a digital economy.

2.4.3 Future Transport Strategy 2056

The Future Transport Strategy 2056 (the Strategy) sets the 40-year vision, directions, and principles for customer mobility in NSW. It guides long-term transport investment in line with the Greater Sydney Region Plan and the Western City District Plan.

The primary objective of the Western Parkland City Strategy is to foster a community where residents and workers can live within a 30-minute commute, primarily using alternative transportation modes like walking, cycling, and public transit. While the site's location currently presents challenges in terms of accessible active and public transportation options, the proposed Green Travel Plan aims to support this strategy by encouraging individuals to utilise alternative modes of commuting to the data centre. This initiative could potentially expand the pool of potential employees to include those who may have been previously limited by car ownership.

2.4.4 Local Strategic Planning Statement

The Local Strategic Planning Statement (LSPS) provides guidance on land use planning and outlines a vision for future land use in the Camden LGA. The Camden LSPS 2020 provides a 20-year land use vision and framework for future growth and development in the LGA to ensure its natural assets are preserved.

The Proposal aligns with several Productivity Local Priorities as listed in the LSPS including:

- *Increasing the quantity and diversity of local jobs and improving access to jobs across the Western City District* | The Proposal would increase the job opportunities to the local area during construction and operation as it will introduce new knowledge-intensive industries. It will increase the diversity of local job opportunities and attract a skilled workforce to the local economy given the jobs and skills required to operate and maintain a data centre.
- *Ensuring a suitable supply of industrial and urban services land* | The Proposal brings a knowledge-intensive 'urban service' industry to the LGA in line with the evolution and diversification of industrial land within area.
- *Leveraging industry opportunities created by Camden's proximity to the Western Sydney Airport and Aerotropolis* | In line with the influx of highly skilled jobs and industries being attracted to the Aerotropolis, the Proposal will contribute to the diversification of industry and employment opportunities within the Camden LGA.

2.4.5 Camden Economic Development Strategy 2022-2026

This Camden Economic Development Strategy 2022-2026 (Camden Council, 2022a) outlines the Council's priorities for stimulating economic growth and vitality. It provides the framework to delivering key directions of the Camden Community Strategic Plan (Camden Council, 2022b) and the priorities of the Camden LSPS. The overarching vision noted in this Plan is 'to leverage Camden's local strengths and emerging regional advantages to promote attractive and liveable places, stimulate economic and employment growth, and foster a vibrant, diversified and technologically advanced economy'. The Proposal will assist in Camden's vision for a more technologically advanced economy by providing the necessary infrastructure to support digital economies.

2.4.6 Camden Centres and Employment Land Strategy

The Camden Centres and Employment Land Strategy sets out a vision to 2040 for Camden's retail centres and industrial and urban services-lands to offer a range of local job opportunities and access to amenities for residents. The above Strategy notes that most industrial jobs within Camden will continue to be in Gregory Hills, which accounts for 75 percent of employment floor space within the LGA. Protection of this area for employment purposes is therefore a key principle identified within this Strategy as it is the most desirable industrial precinct in Camden. In the case of the Proposal, it would support the vision by providing industrial jobs within Gregory Hills.

The Strategy also notes that increased building heights at Gregory Hills could accommodate projected industrial floor space demand by 2036. The Proposal aligns with this strategy by maximising the available space within the Site through its two-story design, thereby accommodating increased data storage capacity.

2.5 Strategic justification

The proposed data centre development aligns strategically with key government plans for the Western Parkland City. It offers significant economic benefits, including job creation, increased employment diversity, and essential digital infrastructure. By supporting these goals, the data centre can contribute to the sustainable growth and development of the region. The development aligns with the Greater Sydney Region Plan, Western City District Plan, Future Transport Strategy, Local Strategic Planning Statement, Camden Economic Development Strategy, and Camden Centres and Employment Land Strategy. It also supports the creation of jobs, diversification of industries, and the provision of digital infrastructure, contributing to the region's economic vitality.

2.6 Agreements

No agreements have been entered into for this Proposal. This includes voluntary planning agreements, negotiated agreements with landowners, or any benefit-sharing schemes. Therefore, there are no specific terms or conditions related to these agreements that would be relevant to the assessment of the project's impacts.

2.7 Proposal alternatives

As per Section 192 of the EP&A Regulation 2021 and the State Significant Development Guidelines (DPHI, 2024b) this section describes the proposal options and feasible alternatives that were considered and rejected in selecting the preferred Proposal.

2.7.1 Do nothing

This option was not considered further as the objectives of the Proposal would not be met.

Specifically, a 'do nothing' option would hinder the main objective of responding to the demand for data storage centres. It would also be a missed opportunity to support the regional, district, and local strategic plans, which promote the need to invest in digital infrastructure in Sydney to help transition to a knowledge-intensive economy. This would result in a missed opportunity to create local employment opportunities in the industrial and cybersecurity sector, including construction, operational, and maintenance jobs.

2.7.2 Development of an alternative site

The subject Site was selected as the preferred location because it offered the most beneficial outcome in terms of the Proposal's objectives for the following reasons.

- It is on land zoned for employment/industrial use. This reflects the reduced environmental sensitivity of the area and its suitability to support a data centre. Specifically, the location would not result in any significant or unmanageable environmental or social impacts, as confirmed through carrying out more detailed assessment (see Chapter 6). It therefore offers a favourable outcome.
- It would provide various positive social and economic benefits in helping support the growth and development of the Western Parkland City. The Site is also strategically placed between key urban areas, which would help bolster their data resilience given the proximity to the data centre and is supported by general infrastructure with respect to power, water, and communications. This strategic placement is essential for meeting the growing demand for data storage and processing capabilities within the region, ensuring that critical data and services are accessible and reliable.

2.7.3 Alternative designs

Several site configurations were evaluated to determine the most suitable fit within the available land. These options included a single-story layout and a two-story layout.

The design and layout of the Proposal was chosen based on being able to best respond to the Site's topography, access, and existing infrastructure given the current power and water servicing limitations to the Site. The configuration also considered the character of the surrounding industrial area and adjacent riparian corridor by providing landscaped buffers that are setback from the site boundary. Furthermore, the Proposal has evolved overtime with engagement and consultation with Camden Council (see Chapter 5), resulting in the current proposed site layout and road network.

The preferred design maximises the use of the available land and enables the White Cliffs Avenue and eastern access road to fit within the site boundary compared to other site configurations. Overall, the Proposal's scale and built form are considered suitable for the site due to its compatibility with the surrounding industrial uses and its ability to enhance the Site's overall aesthetic and functionality. The design aligns with the zoning objectives by adhering to setback requirements, limiting building heights, and minimising impervious surfaces. It reinforces the industrial character of the identified land through the use of industrial materials, a modern architectural style, and the incorporation of landscaping that complements the surrounding environment.

2.7.4 Power alternatives

A key limitation of a data centre is its need to always remain online to facilitate essential community services such as the Government, medical, and banking sectors. There could be significant social and economic impacts otherwise. This forces the need to include power redundancy. Consideration was given to the best way to power the Site. Conventions in data centre design include at least two forms of back-up power.

Options were considered as to the best power supply configuration, balancing supply certainty compared to renewable/non-renewable energy sources. It was concluded that the Site demands a level of power that could only be supplied by the grid. Therefore, there was no main supply alternative, other than the Proponent selecting a green energy tariff. The same conclusion was reached in terms of the main back-up, resulting in the selection of a second grid-supply line to the Site.

Despite the above providing a high level of redundancy, it would not offer a fail-safe solution. This meant the Proponent needed to identify a power source it could operate and control onsite, independent of the grid, which could be brought online quickly and can support their operations for at least 72 hours. Options were considered to use battery storage or renewable power sources. However, the space needed to provide and store sufficient power to the Site using these alternatives would be significant, way beyond the footprint of the available land. Also, despite the environmental benefits of using renewable power, supply cannot be guaranteed. Therefore, the decision was taken to install back-up diesel generators, as these offer the only cost-effective solution that provides guaranteed power that can supply the data centre power in the short time the generators take to start-up. Despite this option not meeting the objective of being a minimal impact solution, it would only ever be used in the event of a complete power failure, which would be extremely rare. The generators would also be used temporarily during regular maintenance and testing. In addition to back-up generators, battery storage would also be used to minimise down-time and provide immediate power supply while the back-up generators power up, enabling a seamless and stable transition.

Roof-mounted solar panels have also been included in the design to help reduce greenhouse gas emissions providing a clean and renewable energy source independent of grid supplied power.

It was confirmed through detailed assessment that the emissions from the generators could be managed to avoid any health or amenity-based impacts (see Chapter 6) and the operating time would contribute little to the State's greenhouse gas inventory.

2.7.5 Cooling alternatives

Cooling is a critical aspect of data centre operations, as excessive heat can lead to equipment failures and performance degradation. There are two prevalent types of cooling options for data centres:

- Air-cooled systems:
  - *Air-to-Air heat exchangers* | Uses fans to draw-in outside air and exhaust internal heat
  - *Free-air cooling* | Uses free cooling by drawing in outside air
  - *Evaporative cooling* | Leverages the natural process of water evaporation to cool air. Hot air is passed through wet cooling pads where it absorbs the heat and evaporates, resulting in cooler air being circulated into the data centre.
- Liquid-cooled systems:
  - *Liquid-to-Air heat exchangers* | Transfers heat from liquid to outside air.
  - *Direct liquid cooling* | Circulates coolant directly through servers.

Based on the evaluation of various options, cooling will be delivered by a free air-cooling system in the winter and evaporative cooling in the summer.

This was considered as the preferred option due to the following benefits:

- *Energy and water efficiency* | When conditions are suitable, free-air cooling can significantly reduce energy and water consumption and operating costs. While evaporative cooling uses water as part of cooling, it uses significantly less electricity compared to traditional air conditioning systems and up to 90 percent less water than other water-based cooling systems
- *Lower emissions* | Reduced energy consumption can lower carbon emissions.

- *Reliability* | Free-air cooling systems are often simpler and more reliable than complex liquid cooling solutions, reducing the risk of equipment failures and maintenance costs.
- *Cost-effectiveness and availability* | Free-air cooling is a cost-effective cooling option that has become increasingly popular in data centre design.

3. Proposal Description

This Chapter provides a comprehensive and consolidated description of the Proposal.

3.1 Overview

The Proposal involves the construction of a data centre comprising data halls, mechanical and electrical equipment rooms, offices, a substation, security gatehouse, other ancillary support spaces, and external/rooftop, mechanical and electrical equipment.

Historically, the Site has been used for rural residential development. Based on historic mapping the Site has been progressively developed since the 1940s. However, the Site is currently unoccupied following its acquisition by the applicant in 2023. Currently, the Site is vacant, with farm dams and a former residential building remaining present within the extent of the Site. The area surrounding the Site is predominantly commercial/industrial land. Immediately to the east is comprised of a riparian corridor, and farther east comprises of vacant land and residential properties. The Site is zoned IN1 General Industrial under State Environmental Planning Policy (Precincts – Western Parkland City) 2021 (WPC SEPP).

In summary the Proposal's key features are:

- Infrastructure comprising civil works and utilities servicing
- A two-storey data centre comprising:
  - 12 data halls including fit-out of IT racks and equipment, associated cabling and supporting services
  - 27 backup generators

A guard house

- Diesel storage capacity of about 650 kilolitres (kL)
- High-voltage substation incorporating 132/22 kilovolt (kV) transformers and associated switching and control buildings.
- 68 standard car parking spaces, of which five would have EV charging, two would comply with the *Disability Discrimination Act 1992*,
- 10 shared bicycle parking spaces.

The site would operate continually (i.e., 24 hours per day, seven days per week).

A separate development application will be lodged with Camden Council for the site preparation and early works (refer to Section 1.4), including construction of a new eastern access road, turning head at White Cliffs Avenue and connection of Central Hills Drive through the northwestern portion of the site (refer to Figure 3-1). This means that the baseline condition of the Site and impacts associated with the assessment within this EIS assumes the works associated with the DA to have largely been completed prior to construction of the data centre, substation and associated infrastructure.

Following the site preparation and early works, it is expected to take approximately 18 months to build the data centre with construction of the building commencing in Q1 2026 and it being completed in Q2 2027, subject to development consent and weather conditions. It would take an additional 12-months post-construction of the building to fully fit out the data centre. The Proposal is expected to be fully operational in Q2 2028.

Table 3-1 provides a detailed overview of the Proposal. The EIS has been prepared based on the concept of what would be built onsite and a broad understanding of how it would be built, while accounting for site preparation and early works to have been fully executed. While there is a degree of certainty in the Proposal, there are elements that would only be confirmed during detailed design or once a construction contractor is onboard. This is typical of most developments and something the NSW Government recognises in Section 3.4 of Appendix B to its State Significant Development Guidelines (DPHI, 2024b).

Table 3-1: Proposal overview

Term	Definition
The Proposal	A data centre comprising data halls, mechanical and electrical equipment rooms, offices, a substation, a security gatehouse, other ancillary support spaces, and external/rooftop mechanical and electrical equipment.
Physical layout and design	*Overall dimensions* | A building with associated parking, loading zones and landscaping areas. The proposed data centre would be approximately 23 metres high (see Figure 3-3), 190 metres long and 70 metres wide (see Figure 3-4). *Internal fit-out* | Comprising servers, racks, storage devices and other networking equipment supplemented with additional electrical and cooling equipment. *Landscaping* | Local tree species would be planted at intervals to improve aesthetics and amenity and provide amenity passive cooling. The composition would align with Camden Council's flora species list and is shown within the Landscape Plan (see Appendix E, Landscape Plan).
Gross floor area	The total gross floor area for the data centre building is 14,941 m2. The breakdown of the gross floor area is shown in Appendix B (Architectural drawings) and provided below: • Ground floor + mezzanine – 7,530 m2 • Level 1 + mezzanine – 7,383 m2 • Roof – 28m2
The Site	The Proposal is located at 43-61 Turner Road in the suburb of Gregory Hills, NSW 2557. The Site comprises four lots (Lot 14, 15, 16, and 17, DP 28024) and is approximately 9.74 ha. It is located within the Camden Council LGA approximately 45 kilometres southwest of the Sydney CBD, and six kilometres from Campbelltown.
State Significant Development (SSD) Trigger	The proposed data centre building will have a capacity of that is 38 MW above the threshold trigger in Schedule 1 of the State Environmental Planning Policy (Planning Systems) 2021 that classifies data storage centres SSD. Specifically, the centre has a capacity of 53 MW when the SSD threshold is 15 MW.
Estimated development cost	The estimated development cost is about $800 million (see Appendix V (Cost Summary Report/Quantity Surveyor Report).
Power, back-up power supply, and cooling	*Primary grid-supplied power* | Primary mains power would be supplied from the Endeavour Energy network via a private onsite substation. *Back-up generator power (only used in an outage, but periodically tested)* | There would be 27 back-up diesel generators. The back-up diesel generators would generate electricity for less than 200 hours per annum. *Fuel storage (to supply the back-up generators)* | There would be about 650 kL of diesel fuel stored onsite. *Solar power (photovoltaic)*: Solar panels would be provided on top of the roof of the data centre building to provide an alternative renewable energy source.

Term	Definition
	Battery Storage (to provide sufficient power to the centre for a short period in an mains outage) | There would be lithium-ion batteries in the data halls which would operate as back-up power in the event of a power outage to keep security systems, computers, and other electronic equipment running while the back-up generators start. Small uninterruptible power systems would also provide battery backup to various other critical systems. *Cooling (of the IT equipment)* | Cooling would be delivered by fresh air free-cooling systems in winter and evaporative cooling in summer.
Access, circulation and parking	*Access* | Access to the data centre would be via Turner Road via the new eastern access road and internal road network. Access to the substation would be via White Cliffs Avenue. *Circulation* | The internal roads would be designed and built to separate heavy vehicles, light vehicles and pedestrians. They have been designed to allow heavy vehicles to move safely around the Site without needing to reverse. *Parking* | There would be 68 shared regular parking spaces (of which five would have EV charging and two would comply with the *Disability Discrimination Act 1992*. There would also be 10 shared bicycle parking spaces.
Other infrastructure	Other infrastructure required to service the data centre building and substation including necessary stormwater, wastewater, telecommunications and electricity pipes, pits, conduits and nodes.
Land uses and activities	The Site would only be used to support the operation of the data centre. There would be occasional maintenance and delivery vehicles movements. There would also be movement of the workforce arriving and leaving at the start and end of each shift. Essential site and security staff would be working at night; however, most operations would occur during the day.
Hours of operation	24 hours a day, 7 days a week.
Employment	The Proposal would support up to 100 construction jobs and 50 full-time operational jobs.
Phases	The Proposal would be built in a single stage (in planning terms) however would cover three build phases: *Phase 1* | Site establishment *Phase 2* | Initial construction and initial fit out *Phase 3* | Remaining fit out

3.2 Physical layout and design

The facility would include data hall space and supporting plant rooms, administrative spaces incorporating secure entry facilities, a loading dock, storage, end of trip facilities, and staff offices.

3.2.1 Internal fit out

The data halls would be fitted out with IT infrastructure following construction. The internal fit out will occur over 12 months in five stages with the data centre anticipated to be fully operational by Q2 2028. The IT infrastructure would broadly comprise of servers, racks, storage devices, and networking equipment.

3.2.2 Administration facilities and loading dock

While the data halls would occupy most of the main building, there would be an area dedicated to the facility's administration and a loading dock. The administration area within the building would include offices, a kitchen, end-of-trip facilities, and toilets. The loading dock would provide the means for heavy vehicles to offload and remove larger equipment such as servers and racks.

3.2.3 Landscaping

Landscaped areas would be installed around the data centre as shown in Figure 3-2. Appendix E (Landscape Plan) describes the landscape and planting strategy that has been developed in accordance with the Turner Road Precinct DCP and Greener Places Principles. Landscape areas on site will include native planting as well as locally endemic species. Bush fire has also been considered as it is deemed a risk as per the NSW Rural Fire Service (RFS) Bushfire Prone Land map (RFS, 2021).

3.2.4 Design quality

The design principles for the Proposal draws from the Government Architect NSW *Better Placed- an integrated design policy for New South Wales*. Detailed responses to how the Proposal aligns with each of the objectives from Better Placed is provided in Appendix X (Design Report) with a summary of the key design responses provided below.

The buildings are thoughtfully designed to engage with the street and other public areas, featuring quality landscaping along all street frontages. This includes a well-considered landscape setback from Turner Road, establishing a high standard of character and design providing a landscape buffer from Turner Road and natural screening.

Given its proximity to the RE1 zone and associated riparian corridor, the building materials and colour palette have been carefully selected to blend seamlessly with the natural surroundings. The building façade features a mix of grey and green painted concrete, creating a dynamic and articulated appearance along Turner Road. Vertical fins and extruded sections on the front façade further emphasise its articulation. The glazed staircases on the eastern side provide a focal point along the eastern access road, adding an additional design feature when illuminated.

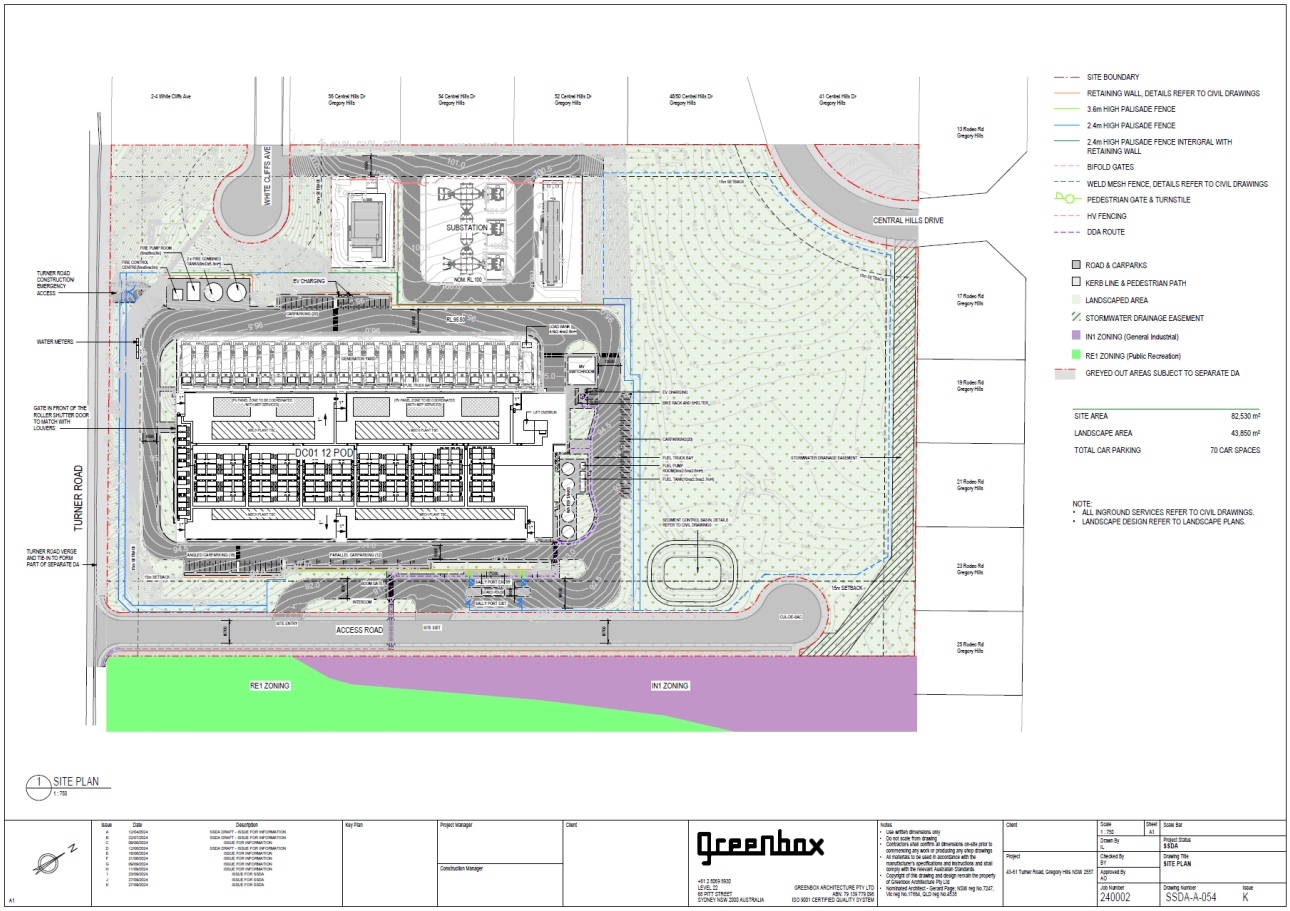


Figure 3-1: Indicative Site layout

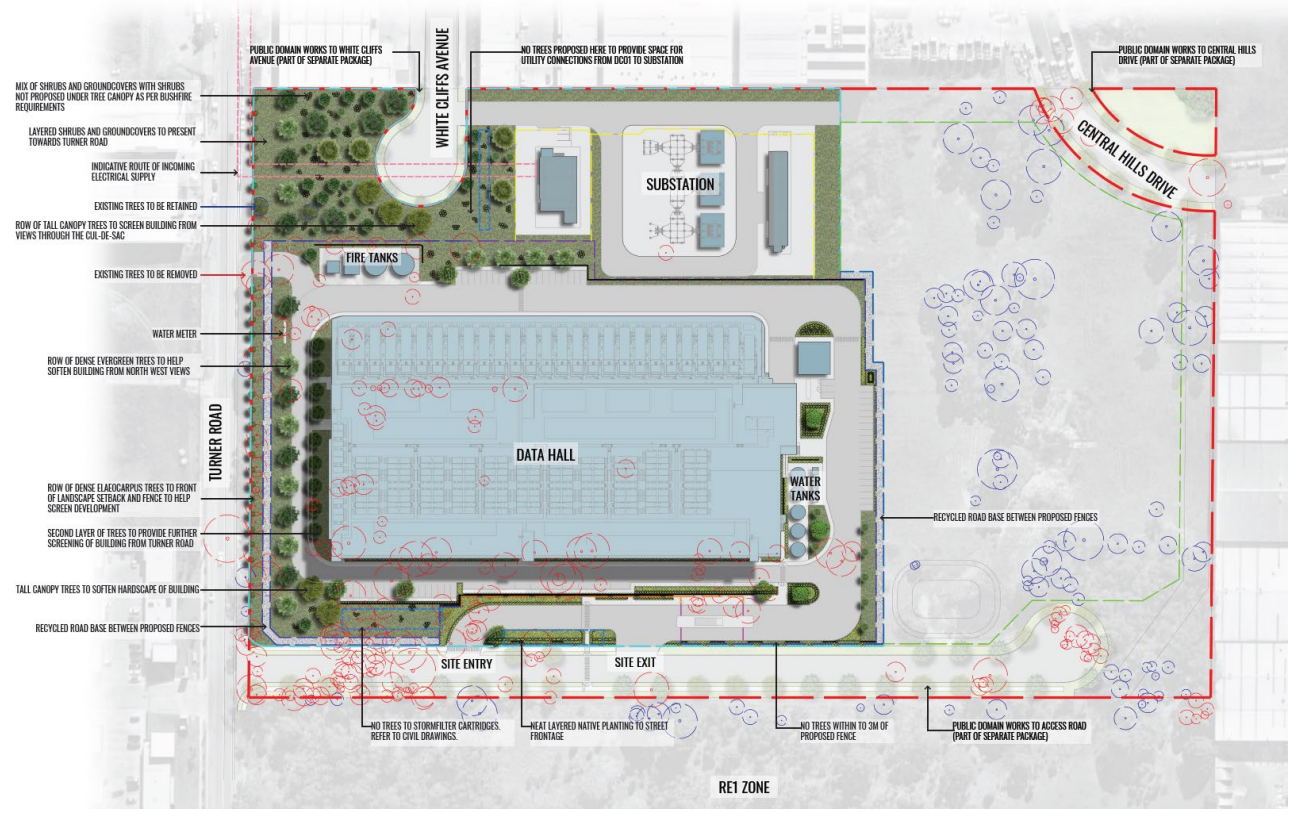


Figure 3-2 Landscaping plan

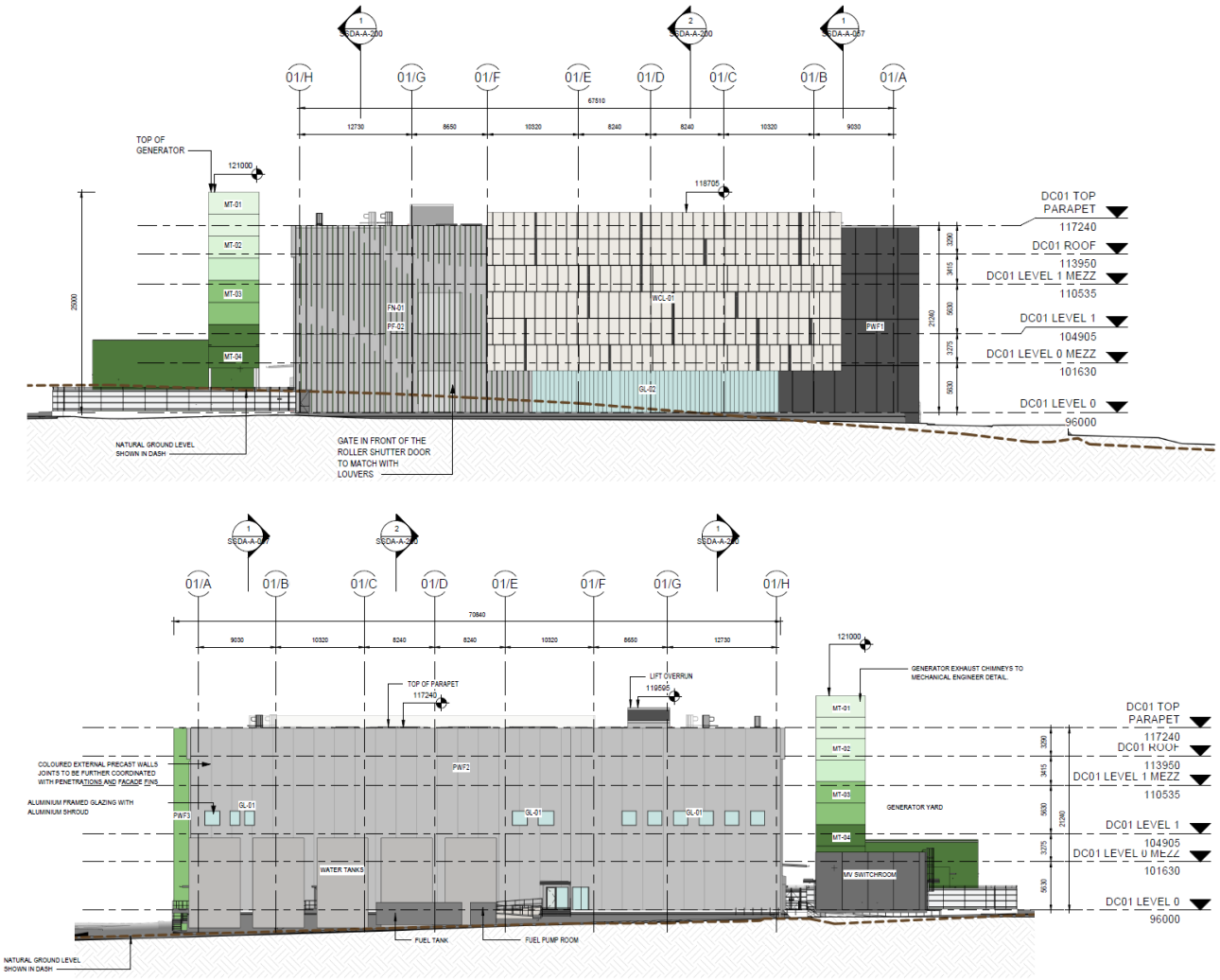


Figure 3-3 Indicative north and south elevations

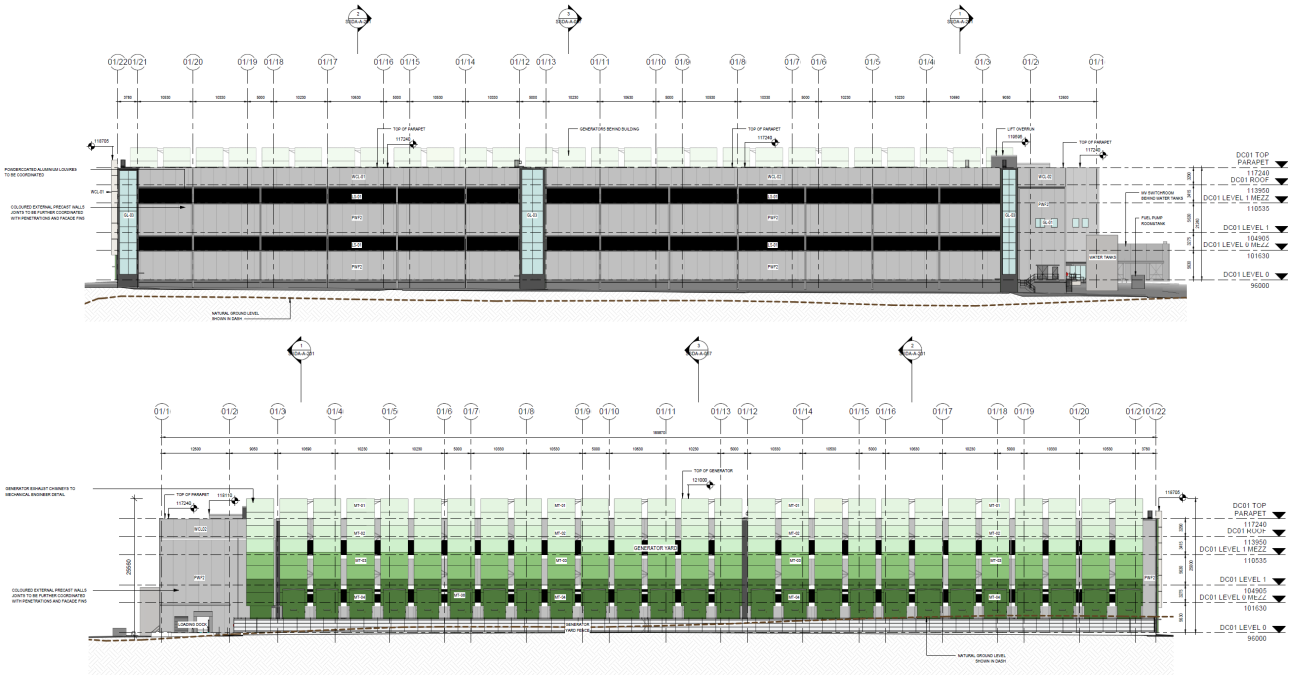


Figure 3-4: Indicative east and west elevations

3.3 Power, back-up power supply, and cooling

Utility power would be delivered via a dedicated onsite electricity substation, with emergency backup power provided by standby generators (see Appendix U, Infrastructure and Services Report for further detail).

3.3.1 Grid-supplied power

The proposal is for Endeavour Energy to supply main power supply that would feed into the substation. This means if there is an outage in the grid supplied power, then the other would be available as a back-up. The back-up diesel generators would only be used (beyond regular maintenance and testing) in the extremely low probability that both mains power supplies would experience an outage at the same time.

3.3.2 Substation

A high-voltage substation incorporating 132/22 kilovolt (kV) transformers and associated switching and control buildings will be installed on the western side of the Site. The supply load will be provided from the Endeavour Energy 132kV network via the new switching station located within the same building as the substation. Both assets will be owned by Endeavour Energy.

3.3.3 Back-up generators

The Proposal includes 27 generators to provide back-up power during a mains power outage.

All generators would be housed in prefabricated, acoustic rated, double-belly diesel fuel tank.

A self-bunded diesel storage tank would store up to 650 kL of diesel fuel above ground. All generator enclosures would be freestanding and located in a hardstand area to the west of the main building, while some mechanical equipment would be located at roof level.

The Australian Energy Regulator (AER) estimates the likelihood of an outage being around 0.05 percent each year with the power loss lasting for typically less than an hour (AER, 2023).

Unlike the scheduled and load testing described below under section 3.6, the generators would not operate under heavy loads (i.e., at full operating capacity).

3.3.4 Solar panels

Roof-mounted solar photovoltaics have been included in the design (see Appendix B (Architectural Drawings)). They would be connected to part of the electrical network where power could be used without compromising critical systems (i.e., the mains power and back-up supply). Design and specification of the solar photovoltaic system will be investigated throughout detailed design, and if feasible, the size of the solar photovoltaic system will be maximised based on available roof space and design parameters.

3.3.5 Battery storage

Lithium-ion batteries will be installed within the data halls. Additional spare and exhausted battery units will be stored within separate dedicated battery rooms. The battery storage locations are shown in Appendix B (Architectural Drawings). They would be used to keep the data centre online for the short period during a mains power outage until the backup generators come online.

3.3.6 Cooling

Cooling will be delivered by fresh air free-cooling systems in the winter and evaporative cooling in the summer to ensure energy consumption is minimised as far as practical. Rainwater harvesting would be used to supplement the water supply for cooling as described in Section 1.8.

3.4 Access, circulation, and parking

The following section describes the access, circulation, and parking onsite.

3.4.1 Access

Primary site access would be via the new eastern access road located off Turner Road. Emergency vehicle access would be provided off Turner Road with access to the substation via White Cliffs Avenue.

Appendix I (Accessibility Report) assessed the Project against accessible design requirements for people with disabilities to ensure consistency and compliance with the National Construction Code of Australia (NCC) Part D4, the Disability (Access to Premises -Buildings) Standards 2010 (Premises Standards) and the *Disability Discrimination Act 1992* and Disability Discrimination Law. A continuous accessible path of travel will be provided from the Site entrance to the building front of house entrance. A continuous accessible path of travel will also be provided from a designated accessible car parking spaces on the allotment in accordance with National Construction Code (NCC) D4D3(1).

3.4.2 Circulation

Operational traffic is discussed in section 6.2.3. It shows how traffic would safely enter, leave and move around the Site. It also shows the route heavy vehicles would take around the Site, and how the roads have been designed to allow for their safe circulation without the need to reverse, other than out of the loading dock. This is called a ‘swept path’ and is shown in Appendix H (Traffic and Transport Assessment Report).

3.4.3 Parking

The Proposal provides a total of 10 bicycle spaces and adequate end-of-trip facilities. Car parking on the Site is shown in Figure 3-1. Based on the DCP requirements and the anticipated parking demand, the Proposal will provide 70 car parking spaces for staff and visitors. These parking bays will be located around the main data centre building and will include five electric vehicle charging bays. The Building Code of Australia outlines that accessible parking spaces should be provided at a rate of 1 per 100 parking spaces. The Proposal will provide two accessible spaces and will be located next to the main entrance.

Two service vehicle spaces are provided to meet the anticipated demand for contractors. These spaces are to be located adjacent to the substation. These spaces will mostly be used by vans and small service vehicles.

3.4.4 Operational traffic and deliveries

Operational traffic would be limited to staff, visitors, and deliveries. There would be about 70 vehicles arriving and leaving Site during the AM and PM peaks. Typical operational traffic would comprise:

- 50 employee vehicles
- 10 visitors
- 10 service vehicles delivering equipment and machinery and removing waste.

3.5 External security

The Proposal would be located behind security fencing and a security gatehouse, meaning only approved personnel and vehicles could access the Site. The Site would be lit with security lighting and designed to prevent crime and promote staff safety.

3.6 Land uses and activities

The Site would only be used to support the operation of the data centre. There would be occasional maintenance and delivery vehicles movements. There would also be movement of the workforce arriving and leaving at the start and end of each shift. Essential site and security staff would be working at night; however, most operations would occur during the day.

About 50 people would be needed to operate the data centre during the day and this would drop to a skeleton crew of around five staff during out-of-hours.

The routine operations onsite would be:

- General office activities
- Operational traffic movements, including deliveries
- Routine equipment testing, including the back-up generators (see Section 3.7)
- Data storage maintenance and equipment management
- Waste management and removal
- Landscape management and maintenance.

Non-routine operations would involve the occasional replacement of IT infrastructure, batteries and supporting equipment.

3.7 Routine testing and maintenance

Equipment and machinery would be routinely tested and maintained as described below.

3.7.1 Routine back-up generator testing

As noted above in section 3.2, the back-up generators would only operate in the event of a mains power outage. However, to ensure the back-up generators could operate optimally under these exceptional circumstances they would need routinely testing and maintaining. Two types of testing would take place as shown below in Table 3-3. Load testing is different from normal operational testing. It involves gradually increasing the electrical 'load' in increments, while monitoring its voltage, frequency stability, and fuel consumption under varying conditions to ensure optimal performance and reliability.

Due to the number of generators onsite, it is expected there will be some level of operational testing every week. The testing of the back-up diesel generators is predicted to generate electricity for less than 200 hours per annum.

Table 3-2: Generator testing schedule

Generator Test	Number of generators tested	Testing type	Approximate run time	Frequency
Operational test	Two units	Not under load	7 minutes (per set of generators)	Fortnightly
Load test	One unit	Under 100 percent load by using an attached 'load device'	60 minutes (per generator) (extended to 90 minutes every 3 years)	Annually

Additionally, the diesel tanks would require refilling about once every six months.

3.7.2 Stormwater maintenance schedule

The Proponent would maintain all stormwater infrastructure onsite. In addition to any specific requirements specified by the manufacturers, the general schedule is summarised in Table 3-3.

Table 3-3: General maintenance schedule summary

Item	Maintenance task	Frequency	Procedure
Inlet to junction pits	Inside of pits	Six months	Remove grate and inspect internal walls and base, repair where required. Remove any collected sediment, debris, and litter.
	Outside of pits	Four months and after heavy rainfall events	Clean the grate of any collected sediment, debris, litter and vegetation.
General stormwater system	General inspections of the complete stormwater drainage system	Two years	Inspect all drainage infrastructure recording any dilapidation in structures and carry out repairs that are required.
Gross pollutant traps	Inspect and remove accumulated litter	Three to six months depending on pollutant loads	Remove the lid and inspect. Remove litter with a vacuum hose or mechanical grab.

3.8 Waste and recycled material management

Waste and recyclable materials would be removed from the Site by licenced contractors and reused, repurposed, or disposed of at licensed facilities, in line with the NSW Waste Classification Guidelines 2014. Appendix R (Waste Management Plan) details the waste management requirements.

3.9 Construction details

To suit demand, construction of the data centre would be phased with the internal fit out occurring over 12 months. The utility and service connections to the data centre and substation would also be installed in phases to complement this. This section describes the main construction works and timing. The final construction methods and timing would be confirmed during detailed design once a contractor is appointed. The consistency of the final design would be confirmed against the Proposal described in the EIS. If there is a material difference, then a modification to the consent would be sought otherwise advice would be sought from DPHI.

Broadly, the construction work would be scheduled across five activities, following the completion of the early works:

- Activity 1 | Site establishment
- Activity 2 | Piling, slab foundations, and utility tie-ins
- Activity 3 | Pavement and external hardstand areas
- Activity 4 | Building construction
- Activity 5 | Plant installation, connection, commissioning, and testing.

Peak construction would occur when the building is being constructed (Activity 4).

3.9.1 Phasing

The scheme would be built as a single stage of development, as defined under the EP&A Act. However, Activity 5 would be split across two phases as described below.

Table 3-4: Construction phasing of Activity 5

Phase	Key utility provision
Phase 1 | initial construction and initial fit out, including data centre shell and administrative facilities	Connection to the substation Connection to stormwater and wastewater services Connection to telecommunication and electricity services Installation of water and rainwater harvesting tank Installation of initial generators
Phase 2 | remaining internal fit out	Installation of remaining generators

3.9.2 Construction hours and duration

This section describes the time it would take to build the Proposal and the working hours.

Start date and length of construction

The exact construction program would be confirmed during detailed design once a contractor is appointed. However, the total program is anticipated to take about two years, with construction planned to start in early 2026 subject to approval, contractor appointment, and supplies and logistics. Broadly, it would take about 18 months to build Phase 1 (initial construction and initial fit out) and 12 months to complete Phase 2 (remaining fit out). The Proposal is anticipated to be fully operational in Q2 2028.

Working hours

The construction work would be carried out within the following standard working hours:

- 7am to 6pm Monday to Friday

- 8am to 1pm on Saturdays
- No work on Sundays or public holidays.

There are no planned night-works. However, there could be occasions where large over-sized equipment, such as the 27 generators, may be delivered at night, due to road access and safety restrictions. The final decision on this would be confirmed by the contractor and manufacturer, and in consultation with Transport for NSW, Council, and NSW Police.

3.9.3 Workforce

About 100 people would be needed to build the Proposal during peak construction stages (Activity 4 and Activity 5) when building construction, and plant installation, connection, commissioning and testing are occurring (see Appendix H, Traffic and Transport Assessment Report).

3.9.4 Plant and equipment

The plant and equipment needed to build the data centre would be typical to any major construction site. It would vary depending on the construction activity. The largest and most complex equipment needed to build and fit out the data centre would be during Activity 4 and Activity 5. The most noise intensive activity would take place when establishing the Site (Activity 1) and piling the foundations and installing the utility tie-ins (Activity 2). The following list indicates the likely plant and equipment that would be used to build the Proposal. The final requirements would be confirmed by the contractor, with the following list being conservative in terms of its capacity and size:

- Backhoe
- Compactor
- Concrete pump
- Concrete pump truck
- Crane (franna)
- Crane (tower)
- Excavator (30t) + hydraulic hammer
- Generator (diesel)
- Grader
- Vehicle (light commercial)
- Jack hammer
- Loader (23t)
- Pavement laying machine
- Piling rig (bored)
- Roller (smooth drum)
- Roller (vibrator)
- Scraper
- Truck (>20 tonne)
- Truck (water cart).

3.9.5 Construction compound, materials, and stockpiling

Construction would be contained within the Site with there being sufficient space to establish a compound. The compound would be used to store the equipment, machinery, and vehicles needed to build the Proposal and it would be located away from any environmentally sensitive areas (i.e., bushfire prone land, flood prone land and areas with ecological, biodiversity or heritage values.) It would also be around 150 metres from the nearest residents. Bulk materials and equipment would be temporarily stored in the compound.

The data centre would be built of materials that are commonly used in construction and widely available in Sydney including: aggregate, steel, concrete, glass, metal, landscaping materials, and other prefabricated infrastructure such as signage, lighting, and fencing. The more specialist IT infrastructure and equipment

would be imported from overseas such as generators and cooling systems. Small amounts of materials such as oils and fuels would be needed to run and operate the equipment and machinery.

Any potentially contaminating materials would be stored onsite in a secure containment area. This would have sufficient capacity to hold 110 per cent of the volume of stored materials, and any spills or discharges would be collected and transported offsite to a licenced facility in accordance with the waste management procedures described in Appendix R (Waste Management Plan).

Any surplus material onsite would be stored on the compound prior to disposal or reuse where possible on Site. Spoil stockpiled on the Site, would be stored in accordance with relevant best practice management guidelines to prevent any leaching, erosion, sediment, and dust dispersion. Vehicle and equipment maintenance would take place in the compound. This would prevent any containment loss in the event of an accidental spill.

3.9.6 Traffic management and access

Provisionally, there would be no need to introduce any specific traffic management controls on Turner Road. However, there may be rare exceptions when large equipment would be delivered to Site, such as the 27 generators. This would likely take place under escort, via a dedicated route agreed with Transport for NSW, Council, and NSW Police. This may require local roads to be temporarily closed for short periods. As noted above, it may also require these trips to take place at night when there is less traffic on the road. During peak construction (Activity 4) about 50 worker vehicles would arrive in the morning and leave in the afternoon, and about 10 heavy vehicles would arrive and leave in the morning and again in the afternoon.

Haul routes

All construction traffic is predicted to access the site via Turner Road and the eastern access road arriving from the west via Camden Valley Way.

4. Statutory Context

This Chapter identifies the statutory context of the Proposal and summarises the relevant statutory requirements. Appendix C (Statutory compliance table) includes a statutory compliance table summarising the information in this Chapter.

4.1 Environmental Planning and Assessment Act 1979 and Regulation 2021

The *Environmental Planning and Assessment* (EP&A) *Act 1979* governs the planning and assessment system in NSW and is supported by the EP&A Regulation 2000 and 2021, State Environmental Planning Policies (SEPPs) and Local Environment Plans (LEPs). The EP&A Act includes provisions to ensure that environmental potential impacts are assessed and considered when deciding to approve development proposals.

Under the EP&A Act, the planning pathway for developments depends on their environmental impacts, capital cost, scale and provisions under other legislation or environmental planning instruments (EPIs). The Proposal's planning pathway is governed by the above Act and Regulations along with the following EPIs as described below in Section 4.3:

- State Environmental Planning Policy (Transport and Infrastructure) 2021
- State Environmental Planning Policy (Planning Systems) 2021
- State Environmental Planning Policy (Western Parkland City) 2021
- State Environmental Planning Policy (Sustainable Buildings) 2022.

4.1.1 Relevant statutory requirements

The following statutory requirements relating to the EP&A Act and Regulation 2021 are relevant to the Proposal.

Power to grant approval

In accordance with Section 4.5 of the EP&A Act, the consent authority for the Proposal would be the NSW Minister for Planning. However, the consent authority would be the Independent Planning Commission (IPC) if:

- The Proponent has made a public donation
- Council makes an objection to the displayed EIS
- There are more than 50 public submissions.

The consent authority evaluates and determines the SSD application in line with the requirements of Section 4.15 of the EP&A Act. Matters for consideration include the likely impacts as defined in the SEARs, relevant EPIs, the Site's suitability, submissions made on the application, and public interest (see Chapter 7).

Permissibility

The Proposal is permissible under Schedule 1, Clause 25 of the Planning Systems SEPP, which states that "Development for the purpose of data centres that has a total power consumption of more than the relevant amount – 15 megawatts". Given that the Proposal would require power consumption of approximately 53

megawatts, it classifies as a State Significant Development (SSD) and is subject to assessment and consent conditions under Division 4.7 of the EP&A Act.

Regarding applications for SSDs, Section 4.12 of the EP&A Act states that they "are to be accompanied by an EIS prepared by, or on behalf of, the applicant in the form prescribed by the Regulations".

Section 192 of the EP&A Regulation sets out the requirements (prescribed form) of an EIS where the content is to be "subject to the environmental assessment requirements that relate to [it]". These environmental assessment requirements are typically sought through an application to DPHI for the Secretary's Environmental Assessment Requirements (SEARs). SEARs are issued by the DPHI and conform the requirements set up under Section 190 and Section 192 of the EP&A Regulation 2021.

This EIS has been prepared against industry specific SEARs (SSD-68013714) to support the development application of the Proposal. The SEARs are included in Appendix A (SEARs table) and show where each requirement has been addressed in this EIS.

Mandatory considerations under the Act and Regulation | Objects of the Act

The objects are guiding principles that are considered by DPHI when making planning decisions under the EP&A Act. They provide a framework to help DPHI assess if the Proposal is consistent with the wider provisions of the Act. A summary of the relevant objects is provided in Table 4-1.

Table 4-1: Assessment against the objects of the EP&A Act

Object of the Act	Comment
To promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources,	The Proposal would not result in any apparent unjustified or unmanageable environmental or social impacts, as confirmed through carrying out the detailed assessment summarised in Chapter 6. Therefore, the Proposal offers a favourable environmental outcome. As noted in Chapter 2, the Proposal supports Sydney's orderly transition to a digital economy. It helps provide wider access to data both for individuals and for a range of other uses, potentially including institutes that deliver social and economic welfare, such as the health sector. Locating the Proposal on a site designated for industrial use helps conserve other areas of the State that have a higher natural capital value. This means the Proposal would be delivered in an area recognised for its reduced environmental sensitivity and suitability to support a data centre. Finally, the Proposal includes a series of ecologically sustainable development (ESD) commitments, which aim to reduce the impact on the State's natural capital (see section 6.3).
To facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment,	The Proposal has considered and facilitated ESD for the reasons described in section 6.3. In summary, it delivers the social and economic benefits of data security across Sydney, and it could achieve this without an unacceptable loss of natural, social, cultural, and economic capital for current and future generations, as described further in Chapter 6 and Chapter 7.
To promote the orderly and economic use and development of land,	The Proposal would be built on land specifically zoned under for industrial/employment use. By building the Proposal on appropriately zoned land it is inherently consistent with the Government's promotion of the orderly and economic use and development of land.

Mandatory considerations under the Act and Regulation | Evaluation

The Minister or IPC must consider the matters listed under Section 4.15 of the EP&A Act when determining the development application. The table below outlines each matter and the location where it is addressed in the EIS.

Table 4-2: Matters of consideration under Section 4.15 of the EP&A Act

Matter	Reference
Any environmental planning instrument	Section 4.3
Any proposed instrument that is, or has been, the subject of public consultation under the EP&A Act	There are no draft instruments that are relevant to the Proposal, Site, or locality.
Any development control plan	Section 4.3
Any planning agreement	There are no planning agreements relevant to the Proposal.
The Regulations	Appendix C (Statutory Compliance Table)
The likely impacts of the development, including environmental impacts on both the natural and built environment, and social and economic impacts on the locality	Chapter 6 and Appendix G (Visual Impact Assessment) to Appendix U (Infrastructure and Services Report)
The suitability of the Site for the development	Chapter 2, Chapter 3, Chapter 6 and Chapter 7
Any submissions made in accordance with the EP&A Act or Regulations	Chapter 5
The public interest	Chapter 7

Mandatory considerations under the Act and Regulation | Relevant concept approval
No pre-conditions related to a concept approval exist for the site which must be satisfied before the Minister or IPC can grant consent for the Proposal.

4.2 Other relevant legislation

The following State and Commonwealth legislation is relevant to the Proposal.

4.2.1 State legislation

Protection of the Environment Operations Act 1997
The objective of the above Act is to provide environmental protection by minimising pollution, managing waste and issuing licences for high-risk activities due to their pollution risk and/or they involve complex waste management issues. These licences are activity-based rather than Site or Proposal based. The following activities are taking place onsite that are in Schedule 1 of the Act:

- Chemical storage
- Electricity generation.

However, neither activity triggers the threshold criteria that require an EPL. Specifically, up to 650 kL of diesel would be stored onsite (see Section 3.2). This is about 543 tonnes, which is well below the 2,000-tonne chemical storage limit requiring an EPL defined under Schedule 1(9) of the POEO Act. The onsite diesel generators would be routinely tested and would generate electricity for less than the 200-hour limit requiring an EPL defined under Schedule 1(17) of the POEO Act.

Additional NSW legislative provisions
The following legislation is considered throughout Chapter 6 and the supporting technical appendices:

- *National Parks and Wildlife Act 1974*, as it relates to the protection of Aboriginal heritage values
- *Heritage Act 1977*, as it relates to the protection of non-Aboriginal heritage values
- *Waste Avoidance and Resource Recovery Act 2001*, as it relates to the need to employ a hierarchy to reduce consumption and to promote recovery and recycling in favour of waste disposal
- *Biosecurity Act 2015*, as it relates to the need to manage pests, pathogens, and weeds.

- *Biodiversity Conservation Act 2016,* as it relates to habitat conservation, threatened species management, and biodiversity offsets
- *Water Management Act 2000,* as it relates to water allocation, water quality, and water conservation.
- *Fisheries Management Act 1994,* as it relates to the protection of aquatic species.

4.2.2 Commonwealth legislation

Environment Protection and Biodiversity Conservation Act 1999

The Australian Government *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the primary environmental legislation at the Commonwealth level to protect and manage Matters of National Environmental Significance (MNES) and activities on Commonwealth land. Activities that have the potential to significantly impact MNES or Commonwealth land would require a referral to the Australian Government. In the case of the Proposal, it is not located on Commonwealth land. Given the Site is located on biodiversity certified land the Proposal would not require referral to the Australian Government.

Disability Discrimination Act 1992

The *Disability Discrimination Act 1992* defines the mechanism to ensure public and workplaces can be made fully accessible. Two parking spaces onsite would be allocated to low mobility access. They have been designed to comply with this Act and the corresponding Australian Standards. The same is true of the data centre and outdoor spaces as described in Appendix I (Accessibility Report).

4.2.3 Relevant statutory requirements

The following statutory requirements relating to the State and Commonwealth legislation are relevant to the Proposal.

Integrated approvals

Section 4.41 of the EP&A Act identifies approvals that are not required for an SSD application. This is because the SSD process effectively integrates such approvals in the consent. Table 4-3 below lists the approvals that would have been required if the project was not an SSD (●) and those that would not be needed (●).

Table 4-3 Approvals not required under Section 4.41 of the EP&A Act

Legislation	Approval type	Relevance to Proposal
Section 201 of the *Fisheries Management Act 1994*	Permit	● | The Proposal would not involve any dredging or reclamation works and no works are proposed in waterways. Therefore, a Section 201 permit would not be required.
Section 205 of the *Fisheries Management Act 1994*	Permit	● | The Proposal would not impact on mangroves, seagrass or marine vegetation and no works are proposed in waterways. Therefore, a Section 205 permit would not be required.
Section 219 of the *Fisheries Management Act 1994*	Permit	● | The Proposal would not result in the blockage of a fish passage and no works are proposed in waterways. Therefore, a Section 219 permit would not be required.
Part 4 of the *Heritage Act 1977*	Approval	● | There are no heritage records on Site or within the surrounding area, as confirmed in Section 6.13.1. As the nearest heritage item is about 1,000 m from the Site, this is beyond the Proposal's limit of impact. Therefore, a Part 4 Heritage approval would not be required.
Section 139 of the *Heritage Act 1977*	Permit	● | Relics have not been discovered on Site or within the surrounding area, as confirmed in section 6.11. Therefore, a Section 139 excavation permit would not be required.
Section 90 of the *National Parks and Wildlife Act 1974*	Permit	● | An Aboriginal cultural heritage assessment (ACHAR) has been prepared and included in Appendix S (Aboriginal Cultural Heritage

Legislation	Approval type	Relevance to Proposal
		Assessment Report). An Aboriginal heritage impact permit (AHIP) would not be required.
Section 100B of the *Rural Fires Act 1997*	Authority	● | While a portion of the Site is located within the bushfire buffer zone, the Site would not be developed for residential, rural residential or special fire protection purposes. Therefore, a bushfire safety authority would not be required.
Section 89 of the *Water Management Act 2000*	Approval	● | The Proposal would not require the use of water as outlined in Section 89. Therefore, a water use approval would not be required.
Section 90 of the *Water Management Act 2000*	Approval	● | The Proposal would not be constructed using a specified water supply work, drainage work or flood work. There would be no need to carry out any water management work on Site. Therefore, water management work approvals would not be required.
Section 91 of the *Water Management Act 2000*	Approval	● | The Proposal would not carry out a specified controlled activity at a specified location on or under waterfront land. In addition the absence of defined channels and banks provides evidence that the subject site's mapped hydrolines do not meet the definition of a 'river' as concluded as part of the Waterways Assessment (Ecologique, 2022) undertaken for the Site as part of the previous DA. Therefore, a controlled activity approval would not be required. ● | The key cause of any impact on groundwater would be due to the installation of the piles needed to support the data centre's slab foundation. However, the scale of the impact would not be sufficient to interfere with the aquifer to the extent that it would require an associated licence under the *Water Management Act 2000*. Therefore, an aquifer interference approval would not be required.

Consistent approvals

Section 4.41 of the EP&A Act identifies approvals that are not required for an SSD application and Section 4.42 of the EP&A Act identifies approvals that cannot be refused to carry out the SSD application. Table 4-4 explains why none of the consistent approvals are needed for the Proposal

Table 4-4 Approvals that cannot be refused under Section 4.42 of the EP&A Act (integrated approvals)

Legislation	Relevance to this EIS
Chapter 3 of the Protection of the Environment Operations Act 1997 (POEO Act)	An environmental protection licence (EPL) is not needed as the Proposal is not classified as a scheduled activity under the POEO Act for the reasons described in Section 4.2.1.
Section 138 of the *Roads Act 1993*.	There is no planned activity under this Proposal that would require occupancy of a public road. While there may be the need to occasionally transport over-sized equipment to Site, this would be subject to a specific agreement with Transport for NSW, Council, and the NSW Police (see section 3.9) and it is not typically done under a road occupancy licence.

EBPC Act approval

As identified in Section 4.2.2, EPBC Act approval is not required.

Other approvals

No other approvals under other legislation would be required for the Proposal.

4.3 Relevant planning instruments and agreements

The following environmental planning instruments and planning arrangements are relevant to the Proposal.

4.3.1 State environmental planning policy

The following State environmental planning policies are relevant to the Proposal.

State Environmental Planning Policy (Planning Systems) 2021

The Planning Systems SEPP identifies State or regionally significant development and infrastructure. As noted above, the Proposal classifies as SSD due to it being a data storage facility that would consume more than 15 megawatts of power as per Schedule 1, Clause 25 of the Planning Systems SEPP.

State Environmental Planning Policy (Western Parkland City) 2021

The SEPP provides a comprehensive framework for the development of the Western Parkland City, including provisions on land use zones, development standards, infrastructure planning, environmental protection, and heritage conservation.

The SEPP establishes various land use zones for different activities, such as residential, commercial, industrial, and recreational. Under the SEPP, the Site is zoned general industrial (IN1).

Figure 4-1 provides an overview of the zoning surrounding the Site. The objective of this zone is to provide a wide range of industrial and warehouse land uses, which includes permitted uses such as data storage centres.

The Site was biodiversity certified under the repealed Sydney Region Growth Centres SEPP, which is now part of the Western Parkland City SEPP. As part of the biodiversity certification process, the impacts of vegetation removal and associated offsets have already been considered and do not require further assessment of impacts on threatened species, populations and ecological communities, or their habitats, that would normally be required by the EP&A Act and EPBC Act. Therefore, a biodiversity development assessment report (BDAR) is not required.

The proposal is generally consistent with the objectives and provisions of the SEPP, with the exception of Clause 4.3 (5)(b) – Height of building for which a Clause 4.6 Variation Request has been prepared to address the non-compliance (refer to Appendix AA). Specifically, the site is subject to a 15m height of buildings development standard prescribed by Clause 4.3(5)(b) of the SEPP. The proposal seeks a maximum building height of about 23m, which exceeds the 15m development standard by 8m or 53%.

It is considered that the variation to Clause 4.3(5)(b) of the SEPP is well-founded in this instance and is appropriate in the circumstances. Furthermore, the variation request is considered to be well-founded for the following reasons as outlined in Clause 4.6 of the SEPP:

- The development is consistent with the objectives of the particular standard;
- The development is consistent with the objectives for development within the zone and long term strategic intentions to maintain and preserve employment land;
- Compliance with the development standard is unreasonable and unnecessary in the circumstances;
- There are sufficient environmental planning grounds to justify contravening the development standard;
- The proposal is consistent with the objectives of the EP&A Act;
- The development does not give rise to any matter of significance for the State or regional environmental planning and is consistent with the visions and objectives of the relevant strategic plans; and

- The objectives of the standard are achieved notwithstanding the non-compliance with the standard.

Overall, it is considered that the proposed variation to the maximum building height control is entirely appropriate and can be clearly justified having regard to the matters listed within Clause 4.6 of the SEPP.

State Environmental Planning Policy (Transport and Infrastructure) 2021

The Transport and Infrastructure SEPP defines what types of development can be built in NSW. It also sets restrictions on whether the development needs consent, or if the development can only be built in certain land use zones. Data centres can be built on land zoned IN1: General Industrial with consent. As noted, this is the land use zoning on the subject Site. Therefore, the proposal is permissible providing consent is secured either from the Minister or IPC in this case.

State Environmental Planning Policy (Sustainable Buildings) 2022

The Sustainable Buildings SEPP encourages the design and construction of more sustainable buildings across NSW.

Chapter 3 of the SEPP contains sustainability standards for non-residential buildings with a capital value of more than $5 million and therefore applies to the Proposal. The ESD Report prepared to support the EIS (see Appendix J, Ecologically Sustainable Development Report) details further how compliance with Chapter 3 of Sustainable Buildings SEPP is met. Based on the assessment, the Proposal is considered to meet the general sustainability measures outlined in Chapter 3.2(1) of the SEPP, as the Proposal has included features such as passive cooling, solar panels and batteries.

To ensure consistency in the measurement of embodied emissions, all impacted new non-residential development need to complete the National Australian Built Environment Rating System (NABERS) Embodied Emissions Material Form, as included in Appendix J (Ecologically Sustainable Development Report). The proposed design is highly energy efficient. The estimated annual average power usage effectiveness of 1.15 is expected, which places the proposed development above NABERS Energy Star rating of five stars.

Given that the proposed office space for the development exceeds 1,000 sqm, a Net Zero Statement is required to be prepared (refer to Appendix J, Ecologically Sustainable Development Report). The Sustainable Buildings SEPP requires that the office spaces are designed to be either fossil fuel-free immediately upon occupation and use or where fossil fuel-dependent building systems are used, provide a transition strategy to confirm how it will operate fossil fuel-free by 2035.

Legend

Proposal area

Land Zoning

- SP2 - Infrastructure
- E3 - Productivity Support
- E4 - General Industrial
- B5 - Business Development
- C4 - Environmental Living
- R1 - General Residential
- R2 - Low Density Residential
- R3 - Medium Density Residential
- R5 - Large Lot Residential
- RE1 - Public Recreation
- RE2 - Private Recreation
- IN1 - General Industrial

Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere

0 50 100 200 Metres

ARUP

151 Clarence Street
Sydney NSW 2000
Tel +61 2 9320 9320
www.arup.com

Client
Confidential

Project Name
43-61 Turner Road Data Centre

Drawing Title
Land use zoning

Scale at A4
1:8,244

Project Number
299816-00

Figure No.
4-1

Rev	Date	By	Chkd	Appd	Authd
A	26/09/24	MD	CS	CS	CS

4.3.2 Local environmental plans

While the Site is located within the Camden LGA the planning controls and zoning provisions of the Precincts – Western Parkland City SEPP prevail, meaning the Camden LEP does not apply. The key provisions of the above SEPP are described above. Further, the Turner Road Precinct Development Control Plan (DCP) was updated in 2018 to reflect the change in planning and development control under the SEPP. This DCP is applicable to the Site.

4.3.3 Non legislative instruments

The following non-legislative instruments are relevant to the Proposal.

Development control plan

Development control plans support SEPPs and LEPs by providing specific and detailed development controls relating to complex aspects of design and providing guidance. These controls include minimum rates of car parking, setbacks for buildings and minimum landscaping requirements. The Turner Road Precinct DCP is applicable to the Site and has considered these controls in the development of the design of the Proposal. Compliance with a DCP is more flexible than the controls stated in a SEPP/LEP as it is not a legislative instrument. Section 3.42 of the EP&A Act provides flexibility in applying the controls set out in a DCP where alternative solutions can be applied to give effect to the SEPP/LEP, facilitate development and the objectives of the zone as they are regulations and not a statutory requirement. Consideration of the relevant provisions within the Turner Road Precinct Development Control Plan is provided in Appendix C.

4.3.4 Relevant statutory requirements

The following table provides the statutory requirements relating to pre-conditions to exercising the power to grant approval which are relevant to the Proposal. Mandatory matters of consideration by the consent authority are outlined in Appendix C (Statutory compliance table) of this EIS.

Statutory reference	Pre-condition	Relevance	Where addressed
State Environmental Planning Policy (Resilience and Hazards) 2021	Clause 4.6 - Remediation of land	Detailed site investigations of the subject site have identified that remediation is required to make the land suitable for the Proposal. However, these works will be undertaken as part of the early works DA.	Section 6.8
State Environmental Planning Policy (Transport and Infrastructure) 2021	Clause 2.47 - Development likely to affect an electricity transmission or distribution network	The Proposal involves construction of a new substation that would require connection to the transmission and distribution network operated by Endeavour Energy.	Section 6.10
	Clause 2.112 - Traffic-generating development	The development is considered traffic generating development, pursuant to Schedule 3 of the Transport and Infrastructure SEPP.	Section 6.2
State Environmental Planning Policy (Biodiversity and Conservation) 2021	Clause 2.14 - Approval of Native Vegetation Panel for clearing native vegetation in non-rural areas	Vegetation removal would be undertaken as part of the early works DA.	Section 6.5

Statutory reference	Pre-condition	Relevance	Where addressed
	Clause 6.8(1) - Flooding	The Site is not located within a regulated catchment under Clause 6.1 of the B&C SEPP.	N/A
	Clause 6.10 - Total catchment management	The Site is not located within a regulated catchment under Clause 6.1 of the B&C SEPP.	N/A
State Environmental Planning Policy (Sustainable Buildings) 2022	Clause 3.2 - Development consent for non-residential development	The ESD Report details that the proposal seeks to minimise greenhouse gas emissions and consumption of energy, water (including water sensitive urban design) and material resources. The NABERS Embodied Emissions form has been completed and is appended.	Section 6.4 Appendix J
	Clause 3.4 - Other considerations for certain State significant development	The design concluded that the most suitable option for the Proposal required power generation was the use of generators running on diesel in combination with solar panels and batteries. A Net Zero Statement is included in Appendix J (Ecologically Sustainable Development Report) outlines how the office space will minimise the use of on-site fossil fuels, as part of the goal of achieving net zero emissions in New South Wales by 2050.	Section 2.7 Appendix J

4.4 Relevant approvals

4.4.1 Planning agreements

As noted in Section 1.4 the Proposal is not restricted by any existing covenants, easements or tenures. No planning agreements relevant to the Site have been entered in to for the Proposal.

4.4.2 DA consents

As noted in Section 1.4, a separate development application (DA) is being lodged with Camden Council for the site preparation and early works that relates to the future industrial use of the Site as a data storage centre. The consent for this DA would be required for this Proposal to proceed.

4.4.3 Concept approval

No concept approval or gateway determinations are in place or applicable to the Site.

4.5 Consistency with request for SEARs

Since the request for SEARs was lodged, the design has progressed from the preliminary design described at that stage. This includes changes to the overall site layout based on consultation with Camden Council (refer to Section 5.4) and the delineation of the works with those proposed early works DA (refer to Section 1.4). The main changes to the key features as described in the request for SEARs include, but not limited to; number of back-up diesel generators and associated diesel fuel storage, amendments to the proposed access arrangements to the Site based on consultation with Camden Council and the estimated development cost which has been revised to align with the proposed design.

5. Engagement

This Chapter summarises the findings of the community engagement carried out when preparing the EIS. It also summarises the planned future engagement. The full engagement report is provided in Appendix D (Engagement Report).

5.1 Engagement approach

Consultation with various stakeholders and community members is an ongoing process. The adopted engagement approach was guided by the International Association for Public Participation's (IAP2) Core Values and Public Participation Spectrum (IAP, 2017) and the Undertaking Engagement Guidelines for State Significant Projects (DPHI, 2024c). The Spectrum defines the public's role in any community engagement program. The 'consult level' of engagement was adopted for this Proposal. This was valid over the more 'empowering levels' given the Site's location in a designated industrial area. The aim of this level of participation is to "obtain public feedback on the analysis, alternatives and/or other decisions". This is underpinned by the promise to "keep the public informed, listen to and acknowledge concerns and aspirations, and provide feedback on how public input influenced decisions" around the EIS and the Proposal. A mapping and analysis process was carried out to identify key stakeholder and community groups. A summary of the engagement is provided in Section 5.3 and Section 5.4 below.

5.2 Engagement objectives

The following objectives were applied to support the engagement activities.

- Identify the people or groups who are interested in or are likely to be affected by the Proposal
- Use appropriate engagement techniques.
- Ensure the community is provided with safe, respectful, and inclusive opportunities to express their views
- Involve the community, councils, and Government agencies early in the development of the Proposal, to enable their views to be considered in project planning and design
- Provide clear and concise information about what is proposed and the likely impacts for the relevant people or group they are engaging with
- Clearly outline how and when the community can be involved in the process
- Make it easy for the community to access information and provide feedback
- Seek to understand issues of concern for all affected people and groups and respond appropriately to those concerns
- Provide feedback about how community and stakeholder views were used to shape the project or considered in making decisions
- Be able to demonstrate how the demography of the area affected has been considered in how and what engagement activities have been undertaken.

5.3 Community engagement

The purpose of this engagement was to inform the community about the Proposal and expected impacts and to consult them to understand key issues, concerns and/or support for the Proposal.

5.3.1 Key stakeholders

The key community groups invited to participate in engagement activities were:

- Adjoining landowners and leaseholders
- Businesses and residents of Gregory Hills and adjoining suburb Smeaton Grange including Culturally and Linguistically Diverse (CALD) communities
- Registered Aboriginal Parties (RAPs)
- Relevant government agencies and utilities.

5.3.2 Actions taken

Community engagement included an invitation to an online information session on 4 April 2024. Invitations to the information session were distributed to neighbouring businesses and residents within Gregory Hills and Smeaton Grange (a total of 828 letters) on 22 March 2024. An online survey was also sent to businesses and residents within the same area and was held open for two weeks from 22 March 2024 to 7 April 2024. An email address was also provided to receive stakeholder enquiries and manage RSVPs to the online information session.

However, despite the opportunities to engage with the Proposal, no responses to the survey or the invitation to attend the online session were received. Furthermore, no responses have been received at the time of writing this EIS. This lack of engagement may be attributed to various factors, including potential challenges in accessing online resources or a lack of interest in the Proposal, as has been seen in many other data centre proposals in industrial areas.

Separate engagement activities were held with First Nations Peoples to inform the Aboriginal Cultural Heritage Assessment Report.

5.3.3 Views

To date no feedback or commentary has been received. This may be due to a variety of factors. One such factor could be consultation fatigue given that Camden is within a key growth area, and as such is undergoing significant development for things like the Western Sydney International Aerotropolis. The Proposal is also located within an industrial precinct which could decrease the level of interest in the Proposal for members of the local community.

5.4 Government agency and key stakeholder consultation

Government agency and key stakeholder consultation was used to inform the design and scope the environmental assessment.

5.4.1 Key stakeholders

The following relevant Government agencies and key stakeholders were consulted:

- Camden Council
- NSW DPHI
- Western Parkland City Authority (WPCA)
- Transport for NSW
- Sydney Water
- Endeavour Energy
- NSW Environment Protection Agency
- NSW Rural Fire Service.

5.4.2 Actions taken

Stakeholder meetings, phone calls and emails were sent to the above. They were used to seek feedback, and identify key environmental issues and opportunities, potential safeguards, and management measures.
A scoping meeting with DPHI was also held in April 2024.

5.4.3 Views

Arup met with Camden Council and DPHI in April 2024 to discuss the Proposal and EIS. Several follow-up meetings were held with Camden Council to discuss stormwater, drainage, and road infrastructure, as well as landscaping and façade architectural treatments for the building. These discussions also informed the scope of the early works DA (which was endorsed and agreed upon by Camden Council), site layout, and road design for the new eastern access road.

Table 5-1 summarises the additional Government agency and key stakeholder views regarding the Proposal.

Table 5-1: Key issues raised through Government and key stakeholder consultation

Consultation	Response received and category	How this has been considered and addressed
Camden Council	**General** Council provided advice in regard to a number of aspects of the Proposal, including town planning, environment and engineering. Plans and documents requested by Council included: • Aboriginal cultural heritage assessment report • Acoustic report • Bushfire report • Contamination report • Flood impact assessment • Landscaping plan • Design plans	The feedback from Council has been addressed throughout the EIS and associated appendices, including: • Appendix E (Landscape Plan) • Appendix M (Noise and Vibration Assessment Report) • Appendix N1 (Preliminary Site Investigation) • Appendix N2 (Detailed Site Investigation) • Appendix N3 (Groundwater assessment) • Appendix O (Surface Water Management and Flood Impact Assessment) • Appendix Q (Bushfire Report) • Appendix S (Aboriginal Cultural Heritage Assessment Report) • Appendix X (Design Report)
Western City Parkland Authority	**General** WPCA had no specific comment in relation to the Proposal but recommended consulting with Sydney Water, electricity providers and Transport for NSW.	Consultation with Endeavour Energy (the electricity network operator) is ongoing as part of the data centre and substation design. Consultation with Sydney Water and Transport for NSW was carried out (see below).
NSW Environment Protection Agency	**Air quality** NSW EPA noted that the Proposal does not constitute a Scheduled Activity under Schedule 1 of the POEO Act and therefore would not require EPL. The Agency provided a list of assessment requirements to be considered in the EIS related to emergency backup generators, air quality, chemicals, water, noise and contamination, while it also recommended consulting with Camden Council.	The assessment requirements raised by NSW EPA have been considered and addressed in (Section 6.3 (Ecologically sustainable development) , Section 6.5 (Air quality), Section 6.6 (Noise and vibration), Section 6.8 (Flooding), and Section 6.9 (Hazards and risk)) and associated appendices. Consultation and engagement with Camden Council has occurred throughout the Proposal's design which has evolved overtime (see Section 2.7).
Transport for NSW	**Traffic and transport** Transport for NSW noted that the subject site has to date no road or rail infrastructure proposal that currently requires any part of the property for acquisition. Transport for NSW also provided a list of general matters for consideration as part of the	A Traffic and Transport Assessment has been prepared as part of this EIS and is provided in Appendix H (Traffic and Transport Assessment Report).

Consultation	Response received and category	How this has been considered and addressed
	preparation of a Traffic Impact Assessment relating to the assessment methodology.	
NSW Rural Fire Service	**Bushfire** NSW RFS noted that a Bushfire Assessment Report should be prepared in accordance with Planning for Bush Fire Protection (PBP) 2019. The RFS also noted that the Proposal would need to facilitate the maintenance of asset protection zones considering the ecologically significant vegetation present on the site and provide access for firefighting on site.	A Bushfire Assessment Report has been prepared for the Proposal (see Appendix Q (Bushfire Report)). The outcomes of this are summarised in Section 6.9. The Landscape Plan for the Site has also been developed in accordance with the PBP.
Endeavour Energy	**Substation design** Endeavour Energy outlined the design requirements for the new substation and switching station.	The design requirements outlined by Endeavour Energy have been incorporated into the design of the substation and switching station as part of the ongoing consultation and engagement process.
Sydney Water	Provided no comment to date.	N/A

5.5 Engagement to be carried out

Following the EIS lodgement, it is expected that DPHI will continue to seek comments from relevant agencies and the community throughout the public exhibition phase. Issues raised during this process will be considered by the broader project team and a Response to Submissions Report will be prepared.

5.5.1 Response to submissions

This EIS will be placed on public exhibition and will offer an opportunity for Government agencies, stakeholders, and the community to provide comments on the Proposal. Following this, DPHI will consolidate any submissions. The Proponent will provide responses in the Submissions Report. If the comments require any adjustments, refinements, or amendments to the Proposal, these would be provided. The Response to Submissions report will also be published. Those who made submissions will be notified regarding their comments and a community update will be distributed. This update will summarise the process and any relevant actions taken to address these comments.

5.5.2 Construction consultation

The appointed contractor(s) will be required to consult with the community, Camden Council, relevant Government agencies, First Nation stakeholders, and utility providers prior to, and during, construction. This process would be managed under the construction environment management plan (CEMP). The CEMP would include specific consultation and notification processes (see Appendix F (Summary of mitigation and management measures)). It would also include a complaints handling, reporting, corrective action, and feedback process.

5.5.3 Operational consultation

The Site would adopt an operational environment management plan (OEMP). Consistent with the CEMP, the OEMP would maintain specific consultation and notification requirements along with a complaints handling, reporting, corrective action, and feedback process (see Appendix F (Summary of mitigation and management measures)).

5.5.4 Summary

To engage with the community and key stakeholders, we conducted letter-box drops, online surveys, held an information session, and conducted targeted outreach to First Nations Peoples. While we received no direct responses to the engagement activities, we have been actively consulting with government agencies and other stakeholders throughout the development of the Proposal. We will continue to engage with the community during the public exhibition phase and throughout the Proposal's implementation, ensuring their voices are heard and their concerns are addressed.

6. Assessment of Impacts

This Chapter summarises and assesses the Proposal's potential impacts during construction and operation. The summaries should be read in conjunction with Appendix G (Visual Impact Assessment) to Appendix U (Infrastructure and Services Report), which include various technical studies and supporting information.

6.1 Visual impacts

This section summarises the potential visual impacts. Appendix G (Visual Impact Assessment) includes the supporting technical assessment.

6.1.1 Method

The visual impact assessment presented in Appendix G (Visual Impact Assessment) involved the following:

- A site visit to evaluate the existing visual character of the area and carry out analysis to determine the Zone of Visibility (viewshed or catchment), that is, the zone(s) in which the Proposal would be visible
- Photographic recording of identified locations that would potentially experience visual impacts from the Proposal.
- Preparation of a digital three-dimensional model of the Proposal
- Generation of photomontages (computer generated visualisations) to create simulated views of the Proposal as seen from the selected viewpoints
- Assessment of visual receptor sensitivity and magnitude of change due to the Proposal. Sensitivity refers to a combination of a receptors' visual susceptibility and the value or importance that they are likely to attribute (or not) to their available views. Magnitude of change refers to the scale of the change introduced by the Proposal
- Assessment of the significance of visual impacts on a scale from 'none' to 'high'. For each receptor, the sensitivity of the location was combined with the predicted magnitude of change to determine the impact.

6.1.2 Existing environment

The Site is currently vacant, with large dams remaining present within its extent. As noted in Section 2.2.2, the Site generally slopes downward from the northwest corner to the southeast corner. Ground elevations vary from around 91 to 104 metres AHD in line with the general northwest to southeast topography.

Land use and landscape character

The Site is surrounded by the following specific land uses:

- The Site is bound to the south by Turner Road, which is a two-lane road running east to west from Camden Valley Way in Gregory Hills to Currans Hill. There are several other industrial developments either approved, constructed or under construction alongside Turner Road. Turner Road forms a key spine road through the area linking Camden Valley Way and residential areas of

Gregory Hills and Currans Hill. Further south the Smeaton Grange industrial precinct continues to the edge of Narellan Road. Pockets of existing vegetation run through Smeaton Grange and follow artificial and natural waterways such as Narellan Creek and Kenny Creek.

- There is the riparian corridor of a tributary to Kenny Creek along the Site's eastern boundary. Despite being classified as recreational land, it is currently not actively used by the public given the limited amount of amenity or facilities present within this area. Beyond the riparian corridor are residential properties within Gregory Hills. The riparian corridor forms a physical and visual barrier between the Site and many residential properties. Long distance views of the Blue Mountains are possible from elevated residential areas of Gregory Hills when looking towards the Site. Further east along Turner Road the industrial land use continues and includes the Bluett Road Data Centre to the southeast.
- To the immediate west of the Site the land has been subdivided by Stockland Group for future industrial development. The subdivision extends to Camden Valley Way.
- To the north are a number of industrial units, some of which are still under construction. These are owned by a series of individual landowners.

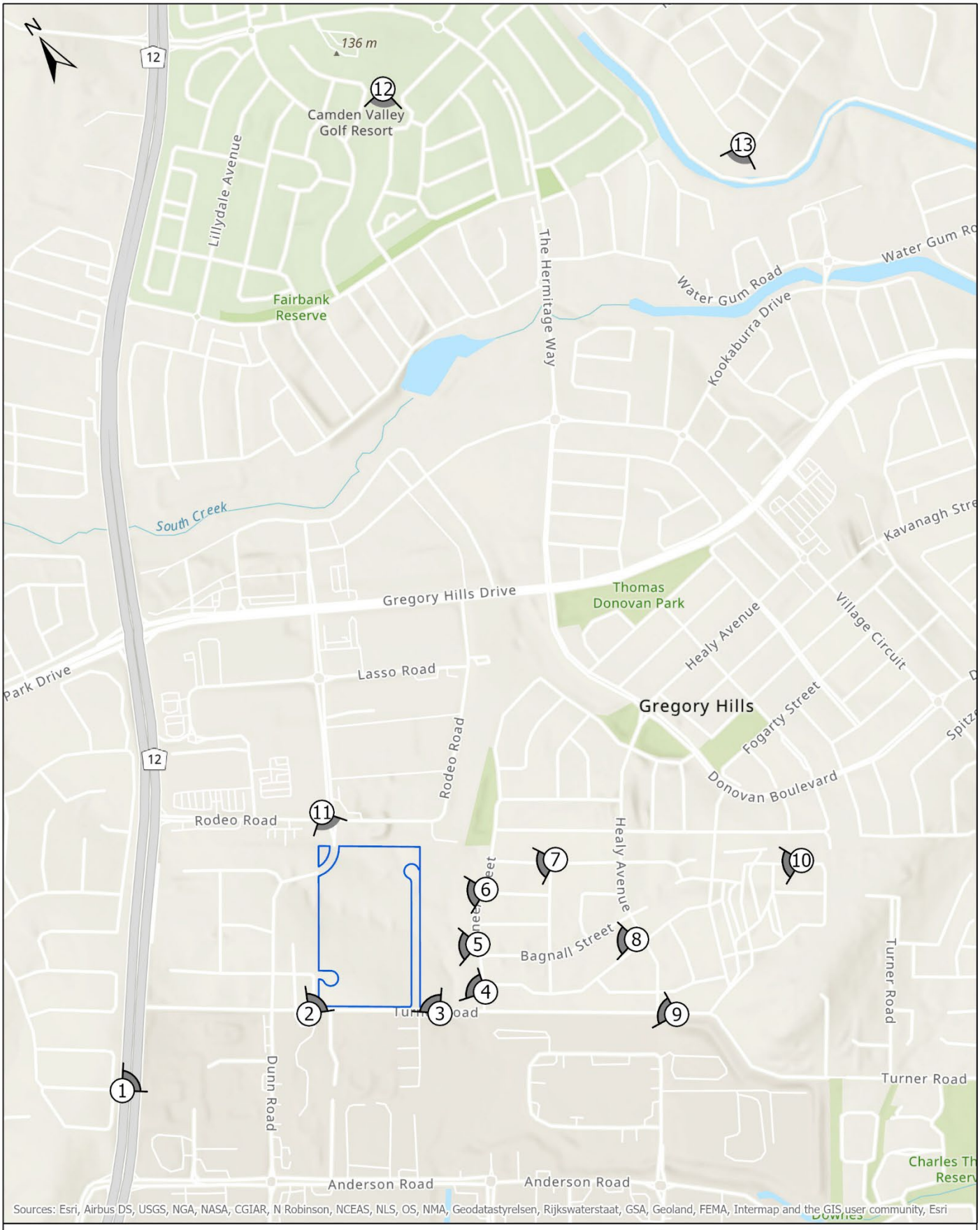
Based on the analysis of the surrounding environment above, site visits and aerial drone photography it is clear that the Site's landscape character is under transition. What was once characterised by the semi-rural open character of a landscape that captures the rolling topography typical of Western Sydney and distant views to the Blue Mountains, is now under transition into an industrial setting. There is an increased order and intensity to the development, characterised by a functional aesthetic prioritising practicality over natural amenity. More modern, denser, orderly (grid layout) development is taking precedence, with largely blocked units and scaled frontages dominating the environment. The other key change is the vegetation transition from a natural semi-managed character to the introduction of ordered landscape planting which is a feature of the industrial development rather than dominating and defining the landscape character. A few remnants remain, including the pockets of bushland and creeks along the riparian corridors, including the tributary to Kenny Creek to the east. This provides natural contrast to the growing urban environment. Visually, these remanent corridors and the wider residential areas are the most sensitive viewpoints in the landscape.

Visual receivers and viewpoints

There are five distinct receiver-types that may be impacted by the Proposal:

- Residents in Gregory Hills to the east of the Site
- Recreational users at Healy Reserve to the east of the Site
- Pedestrians and cyclists using the shared footpath on the western side of Camden Valley Way
- Motorists travelling on Turner Road and Camden Valley Way
- Workers in the Smeaton Grange and Turner Road precincts.

To understand how each group would be impacted, 13 viewpoints (VPs) were identified around the area that represent key locations where these receivers would have views of the development. Figure 6-1 below shows the location and direction of each viewpoint. Table 6-1 provides a description of each viewpoint.



Legend

- Proposal area
- Viewpoints
- Viewlines
- Fields of view

Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere

0 90 180 360 Metres

ARUP

151 Clarence Street
Sydney NSW 2000
Tel +61 2 9320 9320
www.arup.com

Client
Confidential

Project Name
43-61 Turner Road Data Centre

Drawing Title
Viewpoint locations

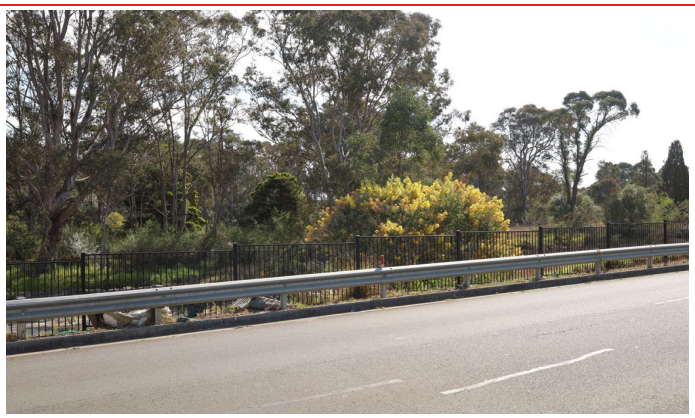
Scale at A4
1:15,300

Project Number
299816-00

Figure No.
6-1

Rev	Date	By	Chkd	Appd	Authd
A	15/11/24	GL	CS	CS	CS

Table 6-1: Viewpoints

VP	Picture (baseline)	Representation, views and sensitivity
VP1		*Representation* | Motorists travelling north on Camden Valley Way and pedestrians and cyclists using the shared footpath. *Views* | The visual baseline contains a busy road. Gaps are visible through the tree canopy with the industrial area of Gregory Hills seen beyond. *Sensitivity* | ● Very low
VP2		*Representation* | Motorists travelling east on Turner Road towards the development site. *Views* | The recently constructed industrial development at 4 White Cliffs Avenue is seen to the left of the image with the Site immediately beyond. Views of the wider landscape are limited. Sensitivity | ● Low
VP3		*Representation* | Motorists travelling west on Turner Road towards the development site. *Views* | Recently constructed industrial development is seen to the left of the image at 63 Turner Road with the Site further north beyond the tree line to the right. Views of the wider landscape are limited. Sensitivity | ● Low
VP4		*Representation* | Residential receptors living on Pioneer Street in the housing estate to the east of the Proposal. VP4, VP5 and VP6 represent the closest residential visual receptors. *Views* | Immediately opposite on the other side of the road are the RE1 lots, which contain drainage infrastructure and significant vegetation. The baseline image does not presently contain any large-scale industrial development; however, the 62 Turner Road development is present to the west. Sensitivity | ● Medium

VP	Picture (baseline)	Representation, views and sensitivity
VP5		*Representation* | Residential receptors living farther east on Pioneer Street in the housing estate to the east of the Proposal. *Views* | The influence of industrial character is much less apparent within the visual context. There are some visual detractors within the view such as the substation and Colourbond fencing, but these are generally minor components. The baseline image does not presently contain any large-scale industrial development and the vegetation east of Turner Road effectively screens industrial units to the north along Central Hills Drive. Sensitivity | ● High
VP6		*Representation* | Residential receptors living even further east on Pioneer Street at the corner of Booth Street, in the housing estate to the east of the Proposal. *Views* | The industrial character of Smeaton Grange and Gregory hills is not visible at street level and the baseline image does not presently contain any large-scale industrial development. The vegetation is denser at this location. Sensitivity | ● High
VP7		*Representation* | Residential receptors living farther to the east, and also farther away from the Proposal. *Views* | The baseline image does not presently contain any large-scale industrial development. At street level views are generally contained to the foreground with streets and other residential housing curtailing views. Sensitivity | ● Medium
VP8		*Representation* | Users of Healy Park. *Views* | Views from the park include the backdrop of the RE1 land south of the Site with residential housing and streets also seen. Vegetation from the RE1 land curtails the view due north; however, longer distance views to the Blue Mountains National Park are also possible. While the presence of existing large scale industrial development is predominantly screened from view, a few warehouse buildings are visible. Sensitivity | ● High

VP	Picture (baseline)	Representation, views and sensitivity
VP9		*Representation* | Motorists travelling northwest on Turner Road towards the Proposal. *Views* | The existing baseline contains a mix of residential and industrial character. The Site is to the right of Turner Road behind housing and the RE1 land visible in the baseline photograph. Sensitivity | ● Low
VP10		*Representation* | Residential receptors at higher elevations within the housing estate to the east of the Proposal. *Views* | Views of the wider landscape including long distance views of the Blue Mountains. However, due to the additional elevation, this is approximately 20 metres higher than VP8, existing industrial development within Gregory Hills is also visible within the view with several industrial buildings clearly seen above the tree line and to the right in the baseline image. Sensitivity | ● Medium
VP11		*Representation* | Public footpath close to the roundabout servicing Rodeo Road and Central Hills Drive to the north west of the Proposal. *Views* | Views of the wider landscape are limited but views would be experienced predominately by motorists travelling through the industrial area of Gregory Hills. Sensitivity | ● Low
VP12		*Representation* | Gledswood Hills Reserve, view was taken from the more elevated northern section of the park from a small garden and seating area. *Views* | The elevation results in views over the Gregory Hills and Smeaton Grange precincts and beyond to Razor Back Ridge on the horizon. Industrial character is clearly noticeable and makes up the intermediate proportion of the view corridor contained between layers of vegetation. Sensitivity | ● Medium

VP	Picture (baseline)	Representation, views and sensitivity
VP13		*Representation* | Residential properties along Pheasant Circuit to the north east of the Proposal *Views* | Views towards the Proposal would be expected from the street and also from upper floor windows of residential dwellings. RE2 zoned land and Gledswood Hills Upper Canal separates the area from other residential estates to the south. Longer distant views over the landscape and to the Razorback Ridge are possible, however the industrial area of Gregory Hills is present in the view corridor with several industrial buildings clearly seen in above the tree line and to the right of the baseline image. An electrical transmission easement crosses the view. Sensitivity | ● Medium

6.1.3 Assessment

A summary of the predicted construction and operational impacts is as follows.

Construction

During construction, a common theme from most VPs would be a noticeable increase in activity around the area when the works are being carried out during construction and fit-out of the data centre, with these impacts lasting over a period of around 2.5 years, see Section 3.9.2 above. There would be a particularly noticeable impact from the larger equipment and machinery that is needed to build elements of the Proposal, such as cranes and loaders. In all cases, the impacts would be temporary, only lasting for the duration of construction during which those VPs near and overlooking the Site (i.e., VP1-VP3) having a greater extent of their views interrupted with various activities. This compares to those VPs farther from the Site otherwise partly screened from the Site, whose amenity would be affected by the introduction of occasional (tall) equipment or machinery into part of their viewscape (i.e., VP4-VP13). Views in these locations would be impacted less due to much of the viewscape being preserved.

Operation

During operation visual impacts for the closest residential dwellings to the east of the Proposal along Pioneer Street (VP4 to VP6) will experience a minor-to-moderate adverse impact, based on the rating scale included in Section 2.7 of Appendix G (Visual Impact Assessment). This is due to a combination of lower elevation and the dense visual screening created by significant vegetation to public land (RE1) situated directly south of the Subject Site meaning the views would not be wholly occupied by the Proposal, however the very top of the Proposal will be seen above the tree line at VP6. Similarly, VP7 will experience a minor/negligible adverse impact as the Proposal will be mostly hidden behind existing residences with only the top corner of the Proposal expected to be visible. At higher elevations, the Proposal will be visible above the tree line, forming a new and recognisable element within the views of VP8, VP9, VP10 and VP13. However, the industrial development in the area has already impacted the amenity of the views from these locations. Longer distance views out towards the Blue Mountains remain and the proposed addition of the Data Centre into the viewshed would not be out of character with the existing industrial development.

Any visual impacts at the industrial receptors close to the Site are also rated minor (VP2 and VP3). Although the Proposal would be clearly noticeable from these viewpoints, the sensitivity is considered to be low as it

would form part of an already emerging viewscape dominated by an industrial landscape character. These views would also only be experienced for a short period of time as VP2 and VP3 are representative of motorists traveling along Turner Road and past the frontage of the Site. Once matured, the proposed landscaping would lessen the mass, scale and dominance of the Proposal, further reducing the impact to the adjacent receivers.

The predicted impacts on the view from Camden Valley Way (VP1) are rated negligible. While the Proposal will form a new and recognisable element within the viewshed which is likely to be recognised from this viewpoint, the data centre will be partially hidden behind existing buildings and vegetation within the riparian corridor of Kenny's Creek. The planned landscaping will further screen the western facade, which is expected to become effective once mature.

The view from Healy Reserve (VP8) is rated moderate as the development will be seen above the tree line, and it will be recognised as a new industrial element within the view from this point. However, occasional views beyond to the Blue Mountains would be preserved.

Table 6-2 summarises the operational visual impacts and their significance ratings as defined in Section 8 of Appendix G (Visual Impact Assessment). The photomontages represent views 15 years following construction, when the proposed landscaping has matured.

Table 6-2: Operational visual impacts

VP	Photomontage	Sensitivity	Magnitude	Significance
VP1		● Very low	● Low	● Negligible
VP2		● Low	● Medium	● Minor

VP	Photomontage	Sensitivity	Magnitude	Significance
VP3		● Low	● Low	● Minor/ ● negligible
VP4		● Medium	● Very low	● Minor/ ● negligible
VP5		● High	● Low	● Moderate/ ● minor
VP6		● High	● Low	● Moderate/ ● minor

VP	Photomontage	Sensitivity	Magnitude	Significance
VP7		● Medium	● Very low	● Minor/ ● negligible
VP8		● High	● Medium	● Moderate
VP9		● Low	● Medium	● Minor
VP10		● Medium	● Medium	● Moderate/ ● minor

VP	Photomontage	Sensitivity	Magnitude	Significance
VP11		● Low	● Low	● Minor/ ● negligible
VP12		● Medium	● Very low	● Minor/ ● negligible
VP13		● Medium	● Very low	● Minor/ ● negligible

Lighting

As detailed in Section 3.5, the Site would be lit with security lighting and designed to prevent crime and promote staff safety. Lighting would be designed in accordance with AS 4282-1997 Control of the Obtrusive Effects of Outdoor Lighting (Standards Australia, 1997) to ensure it would provide sufficient coverage to be consistent with the requirements of the Crime Prevention Through Environmental Design (CPTED), while preventing light spill and glare. This may involve using filter, directional lighting, and backplates to focus the light.

6.1.4 Mitigation and management

Table 6-3 below outlines the proposed measures to mitigate and manage potential visual impacts.

Table 6-3: Visual impacts mitigation and management

ID	Impacts	Mitigation	Responsibility	Timing
V01	Lighting	Lighting would be designed in accordance with AS 4282-1997 Control of the Obtrusive Effects of Outdoor Lighting (Standards Australia, 1997).	Proponent	Detailed design
V02	Presence of construction elements	All areas and activities in the construction footprint will be managed to ensure the appropriate storage of equipment, parking, stockpile screening and arrangements for the storage and removal or waste and materials.	Contractor	Construction
V03	Disruptions to the landscape and visual amenity	Landscaping on the site will be provided in accordance with the Landscape Plan in Appendix E.	Proponent	Operation

6.2 Traffic, transport, and accessibility

This section summarises the potential traffic, transport, and accessibility impacts. Appendix H (Traffic and Transport Assessment Report) and Appendix I (Accessibility Report) include the supporting technical assessments.

6.2.1 Method

The Traffic and Transport Impact Assessment presented in Appendix H involved:

- A traffic count survey carried out at key intersections in 15-minute intervals for three hours in the morning (7am – 10am) and in the afternoon (3pm – 6pm) on 19 July 2023. Light vehicles (LV), heavy vehicles (HV), and buses were counted.
- Signalised Intersection Design and Research Aid (SIDRA) modelling
- Review of crash data between 2018 and 2022
- Identification and assessment of impacts to traffic volumes and access.

The Accessibility Report presented in Appendix I assessed the Project against accessible design requirements for people with disabilities to ensure consistency and compliance with the National Construction Code of Australia (NCC) Part D4, the Disability (Access to Premises -Buildings) Standards 2010 (Premises Standards) and the *Disability Discrimination Act 1992* and Disability Discrimination Law.

6.2.2 Existing environment

This section summarises the existing traffic conditions surrounding the Proposal.

Access

The Site is currently accessible from Turner Road. The public highway network surrounding the Proposal includes the following roads (see Figure 6-2):

- *Camden Valley Way* | a key arterial (classified state road) running in a north-south less than 500 metres from the Site. It connects to the M7 Motorway and the A9 Motorway, and has a posted speed limit of 80 km/h.

- *Turner Road* | a local road running east-west immediately south of the Site with an 80 km/h posted speed limit. There are sections of unrestricted kerbside parking along this road. Turner Road provides three access points to the Site as noted above.
- *Anderson Road* | a dual carriageway running east-west, parallel with Turner Road, to the south of the Site with a 60 km/h posted speed limit. Bus stops are located along this road as well as sections of unrestricted parking towards the east.
- *Dunn Road /Central Hills Drive* | Dunn Road merges with Central Hills Drive at the intersection with Turner Road about 100 metres to the west of the Site. This road runs north south, connecting Turner Road and Anderson Road. Dunn Road has unrestricted parking on either side and a 60 km/h posted speed limit.

A new access road to the east of the Site is being proposed as part of a separate DA for early works (see Section 1.4 above). Referred to as the Eastern Access Road, this proposed road will form a new intersection with Turner Road at the southwest corner of the Site. Access to the Site from the proposed Eastern Access Road will be formed off a separate entry and exit point, with a turning circle included at the northeastern end of the Eastern Access Road to enable right-turn vehicle movements into the Site and left-turn vehicle movements from the Site to the Eastern Access Road. For the purpose of this assessment, it has been assumed the Eastern Access Road will be operational prior to the construction of the data centre.

Figure 6-2: Public highway network surrounding the Proposal

The following key intersections are along the routes that provide the shortest and easiest route to and from the state road network (i.e., Camden Valley Way), with the numbered list below corresponding to the intersection locations shown on Figure 6-3:

1. Camden Valley Way/Anderson Road/Site Warwick Fairfax Drive

2. Anderson Road/Dunn Road
3. Turner Road/Dunn Road/Central Hills Drive
4. Turner Road/Eastern Access Road
5. Site Access/Eastern Access Road.

Additionally, the following road upgrades are planned which will improve connectivity of the surrounding road network, resulting in improved accessibility of Turner Road and the Site.

- *The A9 Northern Road Upgrade* | this 35km road upgrade has been completed and will improve connection between Western Sydney Airport and Camden Valley Way. It has been upgraded into a dual carriageway with bus lanes. This improves the accessibility of the Site to the wider region.
- *Camden DCP* | future upgrades to Turner Road are required under the DCP to align with an industrial road standard including a 20-metre road reserve, a 13-metre carriageway, and additional lanes.

Figure 6-3: Key intersections

Traffic conditions

The traffic count survey identified the peak hours of 07:45-08:45 am (AM peak) and 16:30-17:30 pm (PM peak). Analysis and modelling of intersection performance based on the following metrics was undertaken as part of the Traffic and Transport Impact Assessment provided in Appendix H.

- *Degree of Saturation (DoS)* | indicates how traffic moves through an intersection on a green light. A DoS score of 1.0 indicates an intersection is operating at capacity, whilst the maximum desirable DoS for an intersection is 0.9 (or 90 percent).

- *Level of Service (LoS)* | describes the operational conditions within a traffic stream, reflecting the level of congestion and overall performance of an intersection based, where an LoS-A supports free-flowing traffic movements, and below LoS-C the intersection cannot support the volume of traffic using it (i.e., the traffic flows start to breakdown)
- *Average delay* | is the additional time a vehicle spends at an intersection due to traffic conditions, compared to the time it would take without any delays. The average delay is a factor of the LoS, with the acceptable delay of a free-flowing signalised intersections (LoS-A) being 0-10 seconds, and anything below LoS-D (marginal to unacceptable) being over 25 seconds.
- *95th percentile queue length* | is an estimate of the number of vehicles waiting at an intersection for 95 percent of the time, which is generally acceptable if it is more than 10 to 20 percent of the available storage space, or blocks traffic or extends onto a main road.

A summary of the DoS and LoS of the three existing key intersections (intersection numbers 1, 2 and 3) for the Proposal is set out below in Table 6-4, with further information pertaining to all four metrics provided in Appendix H (Traffic and Transport Assessment Report). The traffic light colours show networks performance relative to the traffic conditions described above.

Table 6-4: Existing traffic conditions at the key intersections

ID	AM peak	PM peak
Existing intersections		
Camden Valley Way/Anderson Road/Sir Warwick Fairfax Drive	LoS | C DoS | 0.72	LoS | C DoS | 0.84
Anderson Road/Dunn Road	LoS | B DoS | 0. 47	LoS | B DoS | 0.57
Dunn Road/Central Hills Drive/Turner Road	LoS | A DoS | 0.54	LoS | B DoS | 0.67

Road-traffic accidents

Crash data for the local road network shows that most crashes occurred at the Camden Valley Way, Anderson Road and Sir Warick Fairfax Drive intersection (intersection number 1 in Figure 6-3), with 12 crashes recorded during this time, although none of these were fatal. The crashes have been put down to driver error given the nature of the incident (i.e., mainly rear-end crashes). No crashes occurred at the Site access point in this period.

Active transport provision

There are no footpaths alongside the roads surrounding the Site meaning people would need to walk within the road verges on patches of grass and across driveways. Further, Gregory Hills has limited walkability supported by the fact that there are limited shops or other local amenities located within a reasonable walking distance (i.e., 800 metres) from the Site (refer to Section 6.12).

There are no cycling provisions near the Site or within Gregory Hills. However, Camden Valley Way is the nearest location to include a dedicated shared use path. The shared use path is located about 450 metres from site. There are also various shared use paths and on road parking lanes in Gregory Hills, Harrington Park and Currans Hill.

Public transport

There are two bus stops along Anderson Road served by the 897 bus service connecting to Campbelltown Station. This service operates Monday to Friday during peak hour only. The closest bus stop, which supports

the 896/897 service, is an eight-minute walk from Site next to the roundabout at Dunn Road. However, there is no connecting pedestrian access between this bus stop and the Site.

The closest railway station to the Site is Campbelltown Station located around eight kilometres southeast of the Site, as serviced and supported by the above bus routes.

6.2.3 Assessment

This section describes the potential impact on traffic, transport, and access conditions arising from the construction and operation of the Proposal. Potential construction phase traffic-related effects are addressed in more detail within Section 5 of Appendix H (Traffic and Transport Assessment Report), while the potential operation phase traffic-related effects are addressed in further detail in Section 6 of Appendix H (Traffic and Transport Assessment Report).

Construction

The following section summarises the predicted construction related impacts.

Network performance

It is estimated that construction would require a maximum of 75 HVs per day accessing the Site. It is anticipated that up to ten HVs would access and egress the Site (equalling 20 two-way HV movements) during both the AM and PM peak.

As well as construction vehicles, up to 80 light vehicles, used by construction staff, are predicted to arrive and leave the Site per day during fit out, the peak construction period as described above in Section 3.9.1. These workers will mostly be specialist contractors and likely not be on Site for the full day. This means they would not necessarily arrive and leave site in a typical shift pattern (i.e., during the AM and PM peak periods). For assessing construction stage potential traffic and transport impacts, it is assumed that all Site personnel drive their personal vehicle to Site. It is also assumed that 30 percent of construction staff arrive during the AM peak and leave during the PM peak, whilst 10 percent of construct staff leave during the AM peak and arrive during the PM peak.

Construction staff will parked onsite, removing potential impacts to parking availability on public roads. All construction traffic will access the site via Turner Road and the eastern access road arriving from the west via Camden Valley Way. Similarly, all construction traffic will egress the site via the eastern access road, Turner Road and Camden Valley Way. The construction traffic distribution routes are shown below in Figure 6-4.

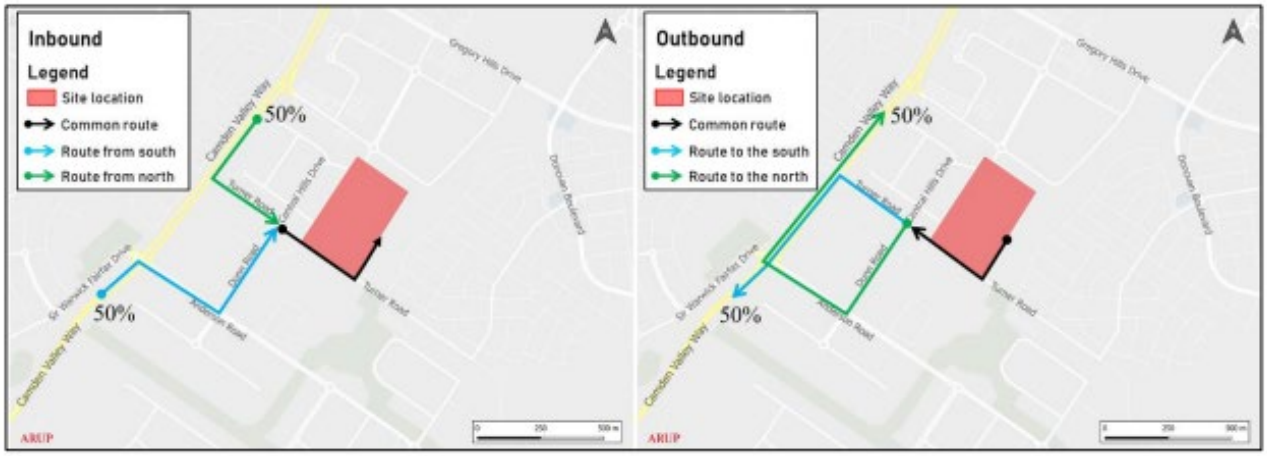


Figure 6-4: Construction traffic distribution routes

Traffic modelling carried out for the Proposal indicates that the construction phase would result in the following LoS and DoS changes for each of the key intersections. Table 6-5 below shows the impact of construction traffic on the five key intersections local to the site. The traffic light colours show networks performance relative to the traffic conditions described above, with the information in brackets showing the relative change from the existing conditions (with any increase shown in red).

Table 6-5: Construction impacts on intersection performance

ID	AM peak change	PM peak change
Existing intersections		
Camden Valley Way/Anderson Road/Sir Warwick Fairfax Drive	LoS | C (none) DoS | 0.89 (+0.17)	LoS | C (none) DoS | 0.95 (+0.11)
Anderson Road/Dunn Road	LoS | B (none) DoS | 0. 54 (+0.07)	LoS | B (none) DoS | 0.65 (+0.08)
Dunn Road/Central Hills Drive/Turner Road	LoS | B (A to B) DoS | 0.68 (+0.14)	LoS | B (none) DoS | 0.84 (+0.17)
New intersections		
Turner Road/Eastern Access Road	LoS | C DoS | 0.27	LoS | B DoS | 0.28
Eastern Access Road/Site Access	LoS | A DoS | 0.03	LoS | A DoS | 0.04

The above modelling includes consideration for likely impacts caused by surrounding committed developments (as identified in Table 13 of Appendix H) as well as construction activities for the Proposal. This means the cumulative impacts have been considered in the modelling, which is typical of traffic modelling and impact assessment. The results indicate that, during construction, these intersections will be able to operate within existing capacity. While there are some increases in DOS (for example at the Camden Valley Way/Anderson Road/Sir Warwick Fairfax Drive intersection) and changes in LOS (for example at the Dunn Road/Central Hills Drive/Turne Road intersection), impacts during construction would be temporary and only occur during peak fit out stages. In most construction stages the works are expected to have a reduced impact on the surrounding road network.

Access

As described in Section 3.9.6, all construction traffic is predicted to access the site via Turner Road and the eastern access road arriving from the west via Camden Valley Way.

Provisionally, there would be no need to introduce any specific traffic management controls on Turner Road. However, there may be rare exceptions when large equipment would be delivered to Site, such as the 27 generators. This would likely take place under escort, via a dedicated route agreed with Transport for NSW, Council, and NSW Police. This may require local roads to be temporarily closed for short periods. As noted above, it may also require these trips to take place at night when there is less traffic on the road.

Operation

The following section summarises the predicted construction related impacts.

Network performance

Staff, visitors, and service vehicles would arrive and leave the operational site. Up to 50 full-time employees, comprising 26 office personnel and 24 non-office personnel will be present onsite in a typical day. Office staff will work regular office hours (8.30am and 5pm) and non-office staff will work in 12-hour shifts with an equal split of personnel (12-on, 12-off) rotating at 6am and 6pm to ensure 24-hour operation of the Site.

For this assessment, it is assumed that both office and non-office staff arrive to Site during the AM peak and leave during the PM peak, using their own personal vehicle to represent a worst-case scenario. The modelling also assumes a linear profile of visitor and service vehicle movements distributed evenly across any given day, equalling two LV and two HV movements to and from into Site during the AM peak and the same during the PM peak.

As such, it is assumed there will be a total of 42 vehicles arriving at site during the AM peak and 16 vehicles leaving the Site. During the PM peak, 16 vehicles will arrive at site and 42 vehicles will leave Site. All vehicles travelling to and from the Site would do so via Camden Valley Way, as shown in Figure 6-5.

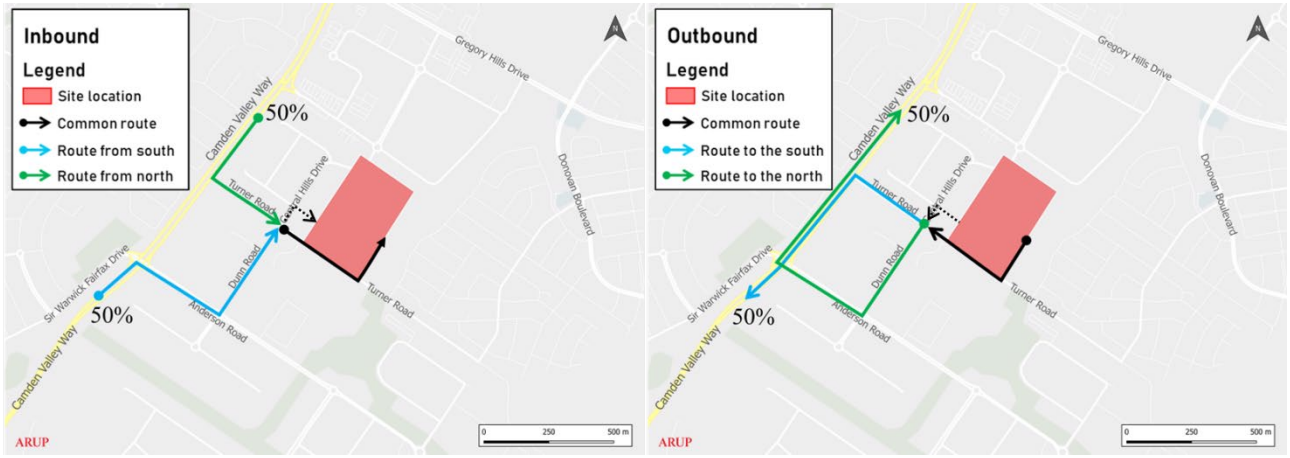


Figure 6-5: Operational traffic distribution routes

Traffic modelling carried out indicates that the operation phase of the Proposal (during the year 2028) would result in the following LoS and DoS for each of the key intersections. Table 6-6 below shows the impact of operational traffic on the five key intersections local to the site. The traffic light colours show networks performance relative to the traffic conditions described above, with the information in brackets showing the relative change from the existing conditions (with any increase shown in red).

Table 6-6: Operational traffic impacts summary

ID	AM peak change	PM peak change
Existing intersections		
Camden Valley Way/Anderson Road/Sir Warwick Fairfax Drive	LoS | C (none) DoS | 0.88 (+0.16)	LoS | C (none) DoS | 0.95 (+0.11)
Anderson Road/Dunn Road	LoS | B (none) DoS | 0.84 (+0.37)	LoS | B (none) DoS | 0.65 (+0.08)
Dunn Road/Central Hills Drive/Turner Road	LoS | B (A to B) DoS | 0.68 (+0.14)	LoS | B (none) DoS | 0.83 (+0.16)
New intersections		
Turner Road/Eastern Access Road	LoS | B DoS | 0.27	LoS | B DoS | 0.28
Eastern Access Road/Site Access	LoS | C DoS | 0.03	LoS | B DoS | 0.04

These results indicate that during operation, these intersections will be able to operate within the respective existing capacities. Although increase in DoS can be seen at several intersections, they are considered to operate with an acceptable level of delay.

Green and active travel and public transport.

During operation there will be new footpaths along the frontage of the Site and the Eastern Access Road which will provide for better pedestrian accessibility. No bus stops will be added or relocated as part of the Proposal.

Access

Access to the Site during operation will be via the eastern access road. The access has a separate entry and exit, with the arrangement allowing for vehicles to safely enter and exit in a forward direction. The swept paths for vehicle movements are provided in Appendix H (Traffic and Transport Assessment Report).

The substation will be accessed from White Cliffs Avenue via Central Hills Drive to the northwest of the Site.

Emergency vehicle access would be provided off Turner Road at the access point previously used during construction.

Pedestrians and cyclists will use a separate access, also off the eastern access road. They will then follow the internal footpath route to the building entrance or cycle parking. Zebra crossings will be installed at each location pedestrians or cyclists are required to cross the internal access road.

Loading dock

The Proposal will provide a loading dock with two loading bays. These are to be located on the northwest corner of the building. The loading dock and access roads have been designed to accommodate large vehicles up to 19-metres, however, it is expected that most service vehicles accessing the site will be smaller than this. The loading dock will be managed, and vehicles will be required to book a slot for deliveries. Waste collection will also be undertaken from the loading dock and will be managed outside of scheduled servicing movements.

Occasionally, large vehicles such as a crane will be required to access the site in order to replace generators. This is likely to occur up to a maximum of twice a year. Generator replacements would be planned outside of

peak hours when internal traffic movements are at a minimum. The crane will stop along the internal road beside the generators while loading and unloading.

Parking

As described in Section 3.4.3, the Proposal provides a total of 10 bicycle spaces and adequate end-of-trip facilities. Based on the DCP requirements and the anticipated parking demand, the Proposal will provide 70 car parking spaces for staff and visitors. These parking bays will be located around the main data centre building and will include five electric vehicle charging bays. The Building Code of Australia outlines that accessible parking spaces should be provided at a rate of 1 per 100 parking spaces. The Proposal will provide two accessible spaces and will be located next to the main entrance.

Two service vehicle spaces are provided to meet the anticipated demand for contractors. These spaces are to be located adjacent to the substation. These spaces will mostly be used by vans and small service vehicles.

Queuing

The site queuing analysis presented in Section 4.6 of Appendix H (Traffic and Transport Assessment Report) shows that, under a scenario of 42 vehicles accessing the site per hour via one access point and a service rate of 80 vehicles per hour, the queue length is 28 metres, or approximately five cars. This can be accommodated by the internal entrance road.

Potential queues will occur primarily during the AM peak, as this is when the largest number of inbound trips is expected. The risk of overflow queueing could be further reduced if operators schedule staggered office employee start times throughout the morning peak.

Queues involving heavy vehicles are unlikely, due to their low arrival frequency and scheduling of deliveries through the loading dock booking system. This would aim to schedule servicing vehicle movements outside of peak staff movement periods where possible.

6.2.4 Mitigation and management

Table 6-7 sets out the proposed control measures to be implemented in order to mitigate and manage the potential traffic, transport, and access related effects assessed.

Table 6-7: Traffic, transport and access mitigation and management measures

ID	Impacts	Mitigation	Responsibility	Timing
TTA01	Overall traffic, transport and access impact	The outline **Construction Traffic Management Plan** (CTMP) will be updated and finalised, before being implemented and monitored onsite. The CTMP will finalise construction vehicle movements, routes, and access and parking arrangements. It will account for the other construction occurring in the area to show how impacts on existing traffic, pedestrian, and bicycle networks will be managed and mitigated. The CTMP will form part of the CEMP. It must be: • Prepared by a suitably qualified and experienced person • Prepared in consultation with Council and Transport for NSW • Detail the measures to be implemented to ensure road safety and network efficiency during construction • Detail HV routes, access, and parking arrangements	Contractor	Detailed design

ID	Impacts	Mitigation	Responsibility	Timing
		• Include a Driver Code of Conduct to: – Minimise the impact of construction traffic on the local and regional road network – Minimise conflicts with other road users.		
TTA02	Safe access	The CTMP will include safety plans to guide pedestrians and cyclists through or past the Site will be prepared and implemented. Any alternative routes will be clearly identified with signage. This plan will include appropriate signage, line marking and crossing facilities provided in accordance with AS 1742.2:2009 – Management of Uniform Traffic Control Devices (Standards Australia, 2009).	Contractor	Pre-construction / Construction
TTA03	Active and sustainable transport options	The outline **Green Travel Plan** (GTP) will be updated and finalised, before being implemented and monitored onsite. It will present site-specific options and policies to encourage sustainable travel to and from the Site. These objectives include: • Collectively agree upon sustainable strategies by relevant stakeholders that are suitable for the Site • Setting future mode share targets to encourage staff to utilise existing public or active transport options • Promote healthy living by providing end of trip facilities for cycling and walking to work journeys • Facilitate safe and sustainable travel with adequate onsite facilities for staff and visitors • Reduce the number of unnecessary private or servicing vehicle journeys • Raise awareness of sustainable transport choices amongst staff.	Proponent	Pre-operation/ Operation

6.3 Ecologically sustainable development

This section summarises how the Proposal has considered ecologically sustainable development (ESD) initiatives. Appendix J (Ecologically Sustainable Development Report) includes the supporting technical assessment NABERS Embodied Emissions Material Form, as required by the SEARs.

6.3.1 Method

The assessment of ESD was prepared in accordance with the relevant policies and planning documents outlined in Table 2 of Appendix J (Ecologically Sustainable Development Report).

Scope 1, Scope 2 and Scope 3 greenhouse gas emissions estimates have been calculated based on two scenarios.

Scope 1 | Direct emissions from sources within the boundary of the Site, meaning emissions estimates for the Proposal are based on diesel fuel consumption for generator testing (as described in Section 3.7.1).

Scope 2 | Emissions resulting from the consumption of imported electricity from the local electricity grid.

Scope 3 | Indirect emissions attributable to losses through the electricity transmission and distribution network.

Scope 2 and Scope 3 emissions estimates for the Proposal have counted for local historic weather data, cooling system efficiency performance and other energy used during operation, such as for lighting. The assessment is based on the following two scenarios.

Scenario 1 | The gradual decarbonisation of the electricity grid is accounted for, and the Proponent's emissions reduction targets are not in place.

Scenario 2 | The gradual decarbonisation of the electricity grid is accounted for, and the Proponent's emissions reduction targets are in place and are met.

6.3.2 Existing environment

A description of the existing air quality in the area with respect to greenhouse gases is provided in Section 6.5.2. Background concentrations are generally below the NSW Approved Methods' (EPA, 2022a) impact assessment criteria.

6.3.3 Assessment

The following section describes the initiatives (impacts) that will be integrated into the Proposal's design, construction, and operational to help achieve the above ESD principles and reduce greenhouse gas emissions.

ESD initiatives

The following section describes the proposed ESD design initiatives and organisational initiatives that will be adopted in the Proposal, and initiatives for investigation.

Design and operational initiatives

Table 6-8 outlines the ESD design initiatives are incorporated into the design and operation of the development.

Table 6-8: ESD design initiatives

Aspect	Initiative
Materials	
Low carbon concrete	The project is committed to sourcing in-situ concrete with >30% lower embodied carbon.
Lightweighting	Design to reduce the volume of materials required to achieve the same function e.g., through 'lightweighting.'
NABERS embodied emissions materials form	Quantities of key materials and associated embodied emissions will be disclosed in the NABERS Embodied Emissions Materials Form (attached in Appendix J (Ecologically Sustainable Development Report)).
Water use	
Dehumidifying air handling unit water cycle optimisation	Evaporative coolers integrated within air handling units will enable the reuse of excess water that remains unevaporated until the concentration of solids in the cooler's sump water reaches three times that of the incoming water. This process will achieve three cycles of concentration, effectively minimising discharge to the sewer system and reducing overall water consumption.
Direct outside air cooling for data hall with evaporative cooling utilised during peak summer	The evaporative cooling system is designed to activate only when the ambient temperature exceeds 28.4°C. When the temperature is below this threshold, the system will supply ambient air directly without any cooling or water usage.
Planting water efficient native plants	Water efficient native plants have been included at this stage of reference design, in line with Turner Road Precinct DCP.

Aspect	Initiative
Rainwater recycling	An on-site rainwater tank is predicted to capture 150 kilolitres of rainwater per year. Rainwater captured through rainwater harvesting systems will be reused to irrigate landscape areas and recirculated through to industrial water tanks to maintain cooling towers on-site.
Water efficient appliances	Water efficient equipment will be installed onsite including toilets, urinals, taps and showerheads. They will display a water use rating based on Water Efficiency Labelling and Standards (WELS). They will have a minimum 4-Star WELS rating, where possible.
Water metering	Water use will be metered and monitored at the potable water inlet, across data hall air handlers, and irrigation, fire water, industrial water and front of house systems. This will be used to identify leaks, bad practices, inefficiencies and to prevent unnecessary losses. It will be used to develop and implement targeted water management strategies to reduce consumption.
Fire pump testing	Water used for fire pump testing will be recirculated and recycled. This will reduce potable water use.
Energy use	
Power utilisation effectiveness reduction	The Proposal includes an evaporative cooling system, which performs above the industry standard. It would reduce energy consumption by around 36 percent compared to a NABERS 3-Star "Average" rating and 14 percent compared to a NABERS 5-Star "Excellent" rating.
Energy metering	Energy use will be metered and monitored onsite throughout the electrical network. This will be used to identify bad practices and inefficiencies. Energy and emissions data will be reported annually under the National Greenhouse and Energy Reporting (NGER) scheme. It will be used to develop and implement targeted energy management strategies to reduce consumption.
Roof-mounted solar photovoltaics	Roof-mounted solar photovoltaics will provide an additional clean and renewable power source.
Hot aisle containment configuration	The IT infrastructure design will follow hot aisle containment configuration[1], which is more compact and maximises the effectiveness of cooling computer hardware.
Distributed uninterrupted power supply (UPS) architecture	Distributed battery systems will be used to reduce energy loss compared to conventional double-conversion UPSs.
Refrigerants	
Refrigerant use reduction	The system is primarily based on free cooling and evaporative cooling.
Waste	
Storage and collection of recyclables	A dedicated area will be included onsite to store and segregate mixed paper, cardboard, metals and e-waste. Separating these materials at source will maximise the potential for their recovery and reuse.
Construction and demolition waste management planning	A Construction Waste Management Plan will be developed and implemented (see section 6.10.4). It will detail all major waste streams that will be generated onsite, including disposal and diversion rates and proposed arrangements for management and collection of waste and recyclables. Where suitable and practicable, soil will be reused on Site to balance cut and fill onsite.
Electronic waste recycling	Electronic waste will be managed responsibly by implementing e-waste collection systems and utilising external recovery and recycling programs to minimise the environmental impact.
Lighting	
Energy efficient lighting	Energy efficient LED lighting will be used. This will be set on timers or installed with motion detectors to reduce energy consumption.

[1] Hot aisle containment configuration is a cooling strategy used in data centres to improve the efficiency of cooling IT equipment such as servers. In this setup, hot air generated by the servers is isolated and contained within designated 'hot aisles,' preventing it from mixing with the cooler air in the rest of the data centre.

Aspect	Initiative
Air pollution	
Active and public transport use	A **Green Travel Plan** will be prepared to encourage walking, cycling, and public transport use (see Section 6.2). Ten bicycle racks will be provided along with end-of trip facilities for staff (see section 3.2).
EV changing infrastructure	Five EV chargers will be provided to encourage use of EVs and reduce greenhouse gas emissions.
Fuel systems	All generators will be housed in prefabricated, acoustic rated, generator enclosures with double-skinned fuel-storage belly tanks. Other safety and leak detection equipment will be installed onsite. A fuel interceptor will be installed within the stormwater drainage system.
Biodiversity	
Landscaping	Landscaped areas will promote the use of native species that complement the local endemic vegetation, reflects the ecological character of the surrounding ecosystems and enhances the adjacent riparian corridor, in line with the ESD principle of conserving biological diversity and ecological integrity (see 6.3.1 above).
CEMP	Environmental impacts during construction will be managed by implementing a best practice, site-specific environmental management plan that will include measures such as revegetation and the establishment of 'no go zones' (refer to Section 6.4.4).

These ESD design initiatives act to reduce the potential impacts of the Proposal and are designed to significantly reduce resource consumption. The measurable benefits will be conducted during the detailed design.

Organisational initiatives

Table 6-9 outlines the ESD organisational initiatives under the Proponent's sustainability policy.

Table 6-9: ESD organisational policy initiatives

Aspect	Initiative
Green power	
Energy	The Proponent has committed to 100 percent renewable energy for all operations by 2025. The Proposal will generate onsite solar electricity, and all other electricity will be sourced through renewable energy power purchase agreements.
Carbon neutrality	
Net zero carbon	The Proponent has committed to achieving 'net zero' by 2040 for its global operations. The Proponent will remove an equal amount of carbon to its emissions via a portfolio of emission technologies potentially including afforestation and reforestation, soil carbon sequestration, bioenergy with carbon capture and storage and direct air capture.
Carbon footprint services	The Proponent provides its customers with transparent data on the carbon emissions associated with their cloud services usage and provides educational material on how to use those services in a more carbon efficient way.
Water stewardship	
Water	The Proponent has committed to achieving 'water positive' by 2030 for its global operations. Water conservation, reuse and recycling are the core components of the Proponent's water stewardship in data centres. The Proponent is engaged in several community water programs designed to return more water to the environment and communities than it uses in its direct operations. Additionally, through partnerships with global non-profits, the Proponent has delivered watershed restoration, clean water provision, wetland creation and water quality projects.
Climate neutrality	
Energy, water, circular economy	The Proponent is a signatory of the European Green Deal and the Climate Neutral Data Centres Initiative, which aims to make data centres climate neutral by 2030. Actions include annual power and water usage effectiveness targets, purchasing 100 percent renewable energy for electricity by 2030, and implementing circular economy practices for its servers. It is expected that in response to innovations in Europe, these will become global best practice.

Aspect	Initiative
Waste reduction and resource use	
Materials and Waste	The Proponent has developed programs to extend the life of equipment as well as strategies to increase recycling rates as much as possible to divert waste from landfill. This extends to purchasing recycle materials such as 90%+ recycled steel where it is available.

Greenhouse gas emissions

Scope 1 | Generator testing (per the schedule described in Section 3.7.1) would result in emissions of 75.19 tCO2e for standard annual tests and 104.3 tCO2e for tests occurring every three years.

Scope 2 and 3 | In the first year of operation, an estimated 0.33 Mt CO_2-e will be generated from electricity consumption through the grid.

Under Scenario 1, the Proposal would have an average annual 36 per cent CO_2-e reduction improvement when compared to 3-Star NABERS 'Average' and 14 per cent when compared to 5-Star NABERS 'Excellent' ratings.

Under Scenario 2, the Proposal would have an average annual 99.9 percent CO_2-e reduction improvement when compared to 3-Star or 5-Star NABERS benchmarks. Through the combination of a decarbonised grid and implementation of the Proponent's organisational policy targets being met (Scenario 2), the Proposal will have minimal operational GHG contributions by 2025.

Resource consumption and embodied energy

As noted above in Section 4.3.1, the Proposal must comply with Chapter 3 of Sustainable Buildings SEPP. The Proposal is considered to meet the general sustainability measures outlined in Chapter 3.2(1) of the SEPP as it includes features such as evaporative cooling and solar panels.

To ensure consistency in the measurement of embodied emissions, all impacted new non-residential development need to complete the NABERS Embodied Emissions Material Form, as included in Appendix J (Ecologically Sustainable Development Report). The proposed design is highly energy efficient. The estimated annual average power usage effectiveness of 1.15 is expected, which places the proposed development above NABERS Energy Star rating of five stars.

6.3.4 Mitigation and management

Table 6-10 below outlines the proposed measures to mitigate and manage potential ESD impacts. Table 5 in Appendix J (Ecologically Sustainable Development Report)

Table 6-10: ESD mitigation and management measures

ID	Impacts	Mitigation	Responsibility	Timing
ESD01	ESD targets including, waste, water and carbon targets, are not met	The final ESD initiatives will be confirmed during the detailed design and their performance and benefit will be measured. The Proponent will report on their implementation in its operational and corporate key performance indicator reporting. The initiatives will be revised or revisited if: • They are not aligned with, or achieving, the NSW Government's net zero emission goals as they relate to the use of natural capital provisions (i.e., energy, water, natural resources) • The Proposal falls below the Proponent's corporate standards.	Proponent	Detailed design / construction / operation

6.4 Biodiversity

This section summarises the potential biodiversity impacts for the Proposal. Appendix K (Biodiversity Assessment) includes the supporting technical assessment.

6.4.1 Method

The biodiversity assessment presented in Appendix K involved the following.

- Database searches and a literature review of the:
  - BioNet Vegetation Classification
  - BioNet Atlas of flora and fauna records
  - Areas of Outstanding Biodiversity Values
  - Biodiversity Values Map of areas of high biodiversity values
  - Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest: A Guide to Identifying and Protecting the Nationally Threatened Ecological Community (DEWHA, 2010)
  - Cumberland Plain Woodland in the Sydney Basin Bioregion - Critically Endangered Ecological Community Listing (TSSC, 2010)
  - Existing State Vegetation Mapping.
- Field survey comprising:
  - Validation of existing vegetation mapping by determining type, condition, and extent within the Site
  - Identification of threatened fauna habitat, including important habitat features such as hollow bearing trees or waterways.

The study area included the Site and extends to 10 metres beyond the boundary on the adjacent council-owned lot (Lot 18 DP28024) and the vegetated verge on Turner Road. This helped inform both direct and indirect impacts.

The desktop searches covered an extent 10 kilometres beyond the site boundary to help understand regional ecological features and values that could extend across and within the study area.

6.4.2 Existing environment

The proposal is currently subject to an ‘early works’ development application, which includes earthworks and other enabling works, which would result in the clearing of the Site. If approved, this would result in the removal of any residual ecological values. The impact of this is being assessed and covered in this application. This EIS therefore considers the environmental baseline assuming this application to be approved and the associated work to have been completed. This means the only residual ecological values are those associated with the adjacent land and riparian corridor. For completeness, the description of the existing environment considers the current ecological condition onsite ahead of any early works.

Certified and non-certified land

The Site is located on biodiversity certified land under the WPC SEPP. As part of the biodiversity certification process, the impacts of vegetation removal and associated offsets have been considered and do not require further assessment of impacts on threatened species, populations, and ecological communities, or

their habitats, that would normally be required by the NSW *Biodiversity Conservation Act 2016* and Commonwealth *Environment Protection and Biodiversity Conversation Act 1999*. However, the adjacent Public Recreation (RE1) zoned land (Lot 18 DP28024) is not covered under this certification and therefore consideration of indirect impacts to this area has been assessed.

Key values

There are no areas of outstanding biodiversity value in the study area or locally. The nearest such area is 50 kilometres to the north west of the site and beyond the extent of the Proposal's impact.

The riparian area to the east of the Site is mapped on the Biodiversity Values Map as being of high biodiversity value in terms of supporting threatened species or communities that are susceptible to serious and irreversible impacts. This area contains a vegetation mix that meets the definition and protection of Cumberland Plain Woodland as described below.

Threatened biota

Ecological communities

As noted above, the vegetation within the adjacent lot is consistent with Cumberland Shale Plains Woodland (plant community type 3320), which extends to be classified as a critically endangered threatened ecological community as protected under the State and Commonwealth legislation.

Flora

Based on a BioNet Atlas search undertaken on 2nd October 2024, five threatened flora species have identified sightings within 10 kilometres of the Site. Table 6-11 below summarises the identified species and listings under the BC Act and EPBC Act.

Table 6-11: Threatened flora species

Common name	Scientific name	NSW Status (BC Act)	Commonwealth Status (EPBC Act)
Marsdenia viridiflora R. Br. subsp. viridiflora population in Camden	*Marsdenia viridiflora subsp. viridiflora*	Endangered	-
Seaforth Mintbush	*Prostanthera marifolia*	Critically Endangered	Critically Endangered
Camden White Gum	*Eucalyptus benthamii*	Critically Endangered	Vulnerable
Brown Pomaderris	*Pomaderris brunnea*	Endangered	Vulnerable
Spiked Rice-flower	*Pimelea spicata*	Endangered	Endangered

Fauna

Based on a BioNet Atlas search undertaken on 2nd October 2024, 34 threatened fauna species have identified sightings within 10 kilometres of the Site. Table 6-12 below summarises the identified species and listings under the BC Act and EPBC Act.

Table 6-12: Threatened fauna species

Common name	Scientific name	NSW Status (BC Act)	Commonwealth Status (EPBC Act)
Green and Golden Bell Frog	*Litoria aurea*	Endangered	Vulnerable
Australasian Bittern	*Botaurus poiciloptilus*	Endangered	Endangered
White-bellied Sea-Eagle	*Haliaeetus leucogaster*	Vulnerable	-
Little Eagle	*Hieraaetus morphnoides*	Vulnerable	-
Square-tailed Kite	*Lophoictinia isura*	Vulnerable	-
Grey Plover	*Pluvialis squatarola*	-	CAMBA, JAMBA, ROKAMBA
Red Knot	*Calidris canutus*	-	Endangered, CAMBA, JAMBA, ROKAMBA
Latham's Snipe	*Gallinago hardwickii*	Vulnerable	Vulnerable, JAMBA, ROKAMBA
Gang-gang Cockatoo	*Callocephalon fimbriatum*	Endangered	Endangered
South-eastern Glossy Black-Cockatoo	*Calyptorhynchus lathami lathami*	Vulnerable	Vulnerable
Little Lorikeet	*Glossopsitta pusilla*	Vulnerable	-
Swift Parrot	*Lathamus discolor*	Endangered	Critically Endangered
Turquoise Parrot	*Neophema pulchella*	Vulnerable	-
Powerful Owl	*Ninox strenua*	Vulnerable	-
Masked Owl	*Tyto novaehollandiae*	Vulnerable	-
Brown Treecreeper (eastern subspecies)	*Climacteris picumnus victoriae*	Vulnerable	Vulnerable
Speckled Warbler	*Chthonicola sagittata*	Vulnerable	-
Regent Honeyeater	*Anthochaera phrygia*	Critically Endangered	Critically Endangered
Varied Sittella	*Daphoenositta chrysoptera*	Vulnerable	-
Dusky Woodswallow	*Artamus cyanopterus cyanopterus*	Vulnerable	-
Scarlet Robin	*Petroica boodang*	Vulnerable	-
Spotted-tailed Quoll	*Dasyurus maculatus*	Vulnerable	Endangered
Koala	*Phascolarctos cinereus*	Endangered	Endangered
Eastern Pygmy-possum	*Cercartetus nanus*	Vulnerable	-
Grey-headed Flying-fox	*Pteropus poliocephalus*	Vulnerable	Vulnerable
Yellow-bellied Sheathtail-bat	*Saccolaimus flaviventris*	Vulnerable	-

Common name	Scientific name	NSW Status (BC Act)	Commonwealth Status (EPBC Act)
Eastern Coastal Free-tailed Bat	*Micronomus norfolkensis*	Vulnerable	-
Large-eared Pied Bat	*Chalinolobus dwyeri*	Endangered	Endangered
Eastern False Pipistrelle	*Falsistrellus tasmaniensis*	Vulnerable	-
Southern Myotis	*Myotis macropus*	Vulnerable	-
Greater Broad-nosed Bat	*Scoteanax rueppellii*	Vulnerable	-
Little Bent-winged Bat	*Miniopterus australis*	Vulnerable	-
Large Bent-winged Bat	*Miniopterus orianae oceanensis*	Vulnerable	-

Figure 6-6: Biodiversity values (Source: Niche, 2024)

Weeds

Significant weed incursion is present on the Site which has been identified in surveys including, African Olive (*Olea europaea subsp. cuspidate*), Firethorn (*Pyrcantha spp.*), Japanese honeysuckle (*Lonicera japonica*) and Moth vine (*Araujia sericifera*), Paspalum (*Paspalum dilatatum*) and Setaria (*Setaria sphacelata var. sericea*).

6.4.3 Assessment

The following section considers the indirect impacts associated with the Proposal's construction and operation along the riparian corridor.

Construction

Direct impacts

The Proposal would not result in vegetation removal as the Site would be cleared as part of the early works DA. In addition. as the entirety of the Proposal occurs on biodiversity certified land, direct impacts as a result of the Proposal have not been considered further.

Indirect impacts

Potential indirect impacts to the adjacent riparian area (Lot 18 DP28024) include:

- Changes to hydrology and increased runoff as a result of increased impermeable (concrete) surface area on the Site
- Introduction of pollutants from construction materials, construction vehicles and plant
- Introduction of weeds from construction vehicles and plant, as well as soil disturbance
- Sediment and silt migration
- Light, noise and dust pollution.

However, with the implementation of mitigation measures no significant indirect impacts to the adjacent riparian area are expected as a result of the construction of the Proposal.

Operation

During operation, there would be no direct impacts associated with the Proposal. However, indirect impacts would occur during operation, associated with changes to hydrology and increased runoff as a result of increased impermeable (concrete) surface area on the Site and light and noise pollution associated with external security and street lighting and operation of the back-up generators. However, with the implementation of mitigation measures no significant indirect impacts to the adjacent riparian area are expected as a result of the operation of the Proposal.

Landscaped areas would be installed around the data centre as shown in Appendix E (Landscape Plan). Landscape areas on Site will include native planting as well as locally endemic species.

6.4.4 Mitigation and management

Table 6-13 below outlines the proposed measures to mitigate and manage potential biodiversity impacts.

Table 6-13: Biodiversity mitigation and management

ID	Impacts	Mitigation	Responsibility	Timing
B01	Migration of non-indigenous species into the riparian area	During detailed design, revegetation adjacent to the RE1 zoned land should investigate appropriate ground cover species that are characteristic of PCT 3320.	Proponent	Detailed design
B02	Introduction of weeds	A Weed Management Plan will be prepared as part of the CEMP to prevent and control weeds on Site.	Proponent / contractor	Pre-construction / construction
B03	Damage to vegetation in the riparian areas as a result of construction activities	The installation of clear demarcating tape or fencing will be used to delineate the Site boundary and RE1 zoned land during construction and will be identified on plans as a 'no go zone'.	Contractor	Construction
B04	Weeds	Weed suppression within the Site should be best practice and minimise any chance of herbicide drift into the RE1 zoned land.	Proponent	Operation

6.5 Air quality

This section summarises the potential air quality impacts for the Proposal. Appendix L (Air Quality Technical Report) includes the supporting technical assessment.

6.5.1 Method

The air quality assessment presented in Appendix L (Air Quality Technical Report) has been prepared in accordance with the *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (EPA, 2022a). The assessment involved the following:

- Identified the nearest sensitive receivers in the surrounding area
- Established ambient air quality and weather conditions using publicly available data
- Assessed potential changes in air quality during construction
- Used modelling to predict the impact on nearby sensitive, commercial and industrial receptors
- Identified management measures to mitigate any impacts or risks.

6.5.2 Existing environment

Local meteorology conditions can affect the dispersal of pollutants in the local area. Data from the nearest NSW Government air quality monitoring station (AQMS) located at Campbelltown West, approximately five kilometres to the south-east of the Site.

To provide site representative meteorological data and all parameters required by the dispersion model, meteorological data was sourced from Lakes Environment based on the Weather Research and Forecasting prognostic model with 1km grid resolution. The prognostic data was interpolated from nearby forecasted and monitored data. Analysis of meteorological data for the past five years indicated similar meteorological patterns, and therefore 2022 (the latest year with complete datasets for both meteorology and background pollutant concentrations) was selected for this assessment and correlated with background air quality data.

Meteorological conditions

On average, winds at the Site are most prevalent from the south-west-west with an annual average speed of 3.46 m/s. Prevailing wind direction varies seasonally. Autumn and winter seasons are dominated by south-

westerly prevailing winds, whereas summer and spring seasons are dominated by north-easterly prevailing winds. Light winds (i.e. those less than 0.5 m/s) are most prevalent during autumn from the southwest.

Air quality

The maximum monitored pollutant concentrations for 2022 at Campbelltown West AQMS are summarised in Table 6-14. They show that the background concentrations are all below the NSW Approved Methods' impact assessment criteria, except for particulate matter (PM_{10} and $PM_{2.5}$). Exceedances of the particulate matter criteria is not uncommon and often due to events such as bushfires, dust storms, or hazard reduction burns.

Table 6-14: Maximum monitored air quality concentrations

Pollutant	Averaging Period	Maximum Monitored Concentrations, µg/m³	Impact Assessment Criteria, µg/m³
CO	1-hour	● 805	30,000
	8-hour	● 460	10,000
NO_2	1-hour	● 78.9	164
SO_2	1-hour	● 26.2	286
	24-hour	● 8.0	57
O_3	1-hour	● 139.2	n/a
PM_{10}	24-hour	● 59.9	50
$PM_{2.5}$	24-hour	● 35.8	25

CO | carbon monoxide, NO_2 | nitrogen dioxide, SO_2 | sulfur dioxide. O_3 | ozone, PM_{10} | particulate matter with a diameter of 10 micrometres or less, $PM_{2.5}$ | particulate matter with a diameter of 2.5 micrometres or less.

A review of the National Pollutant Inventory (NPI) database also identified 16 registered industries within an approximately 10 kilometre radius surrounding the Site which likely contribute to these identified ambient air quality concentrations supplemented by road traffic pollutants.

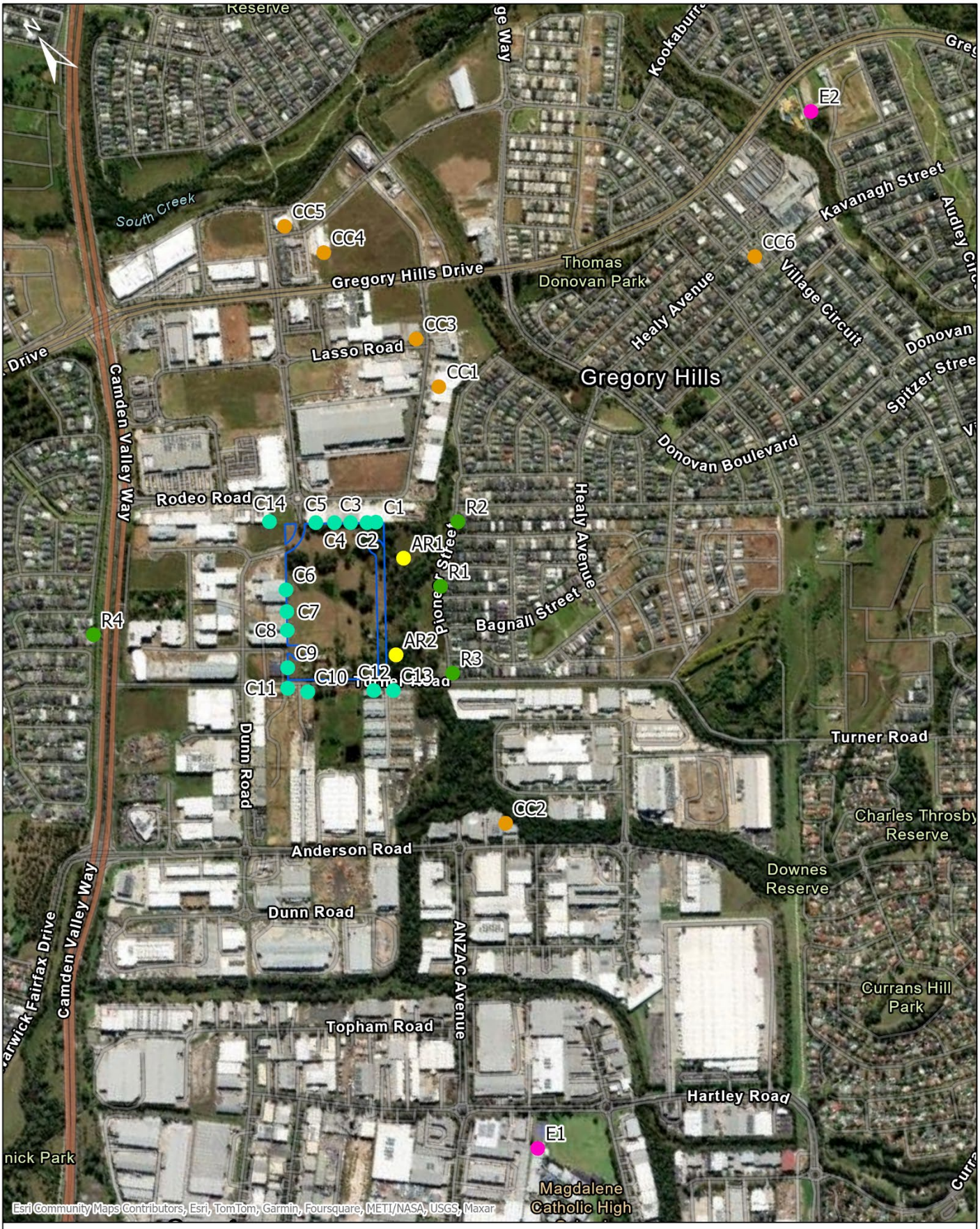
Sensitive receivers

Table 6-15 summarises the nearby receivers that are sensitive to a reduction in air quality. The locations of these are shown in Figure 6-7.

Table 6-15: Identified nearby air quality sensitive receivers

Receiver ID	Receiver address/name	Approximate distance from the Site boundary (m)
Residential		
R1	29 Pioneer St, Gregory Hills NSW 2557	140
R2	9 Pioneer St, Gregory Hills NSW 2557	170
R3	63 Pioneer St, Gregory Hills NSW 2557	190
R4	21 Doolan Cres, Harrington Park NSW 2567	480
Childcare facilities		
CC1	Young Academics Early Learning Centre - Gregory Hills, 47 Rodeo Rd, Gregory Hills NSW 2557	370
CC2	Young Academics Early Learning Centre - Smeaton Grange, 89 Anderson Rd, Smeaton Grange NSW 2567	450

Receiver ID	Receiver address/name	Approximate distance from the Site boundary (m)
CC3	Jenny's Kindergarten & Early Learning Gregory Hills, 87 Lasso Rd, Gregory Hills NSW 2557	460
CC4	Raising Stars Gregory Hills Early Learning Centre, 4 Digitaria Dr, Gledswood Hills NSW 2557	670
CC5	Nido Early School Gregory Hills, 13 Holborn Cct, Gledswood Hills NSW 2557	730
CC6	Great Beginnings Gregory Hills, 72 Village Cct, Gregory Hills NSW 2557	1,130
Commercial		
C1	25 Rodeo Rd (John McDonald Group, National Hardware Vendor Services), Gregory Hills NSW 2557	Immediately adjacent to the north of the Site boundary.
C2	23 Rodeo Rd (Totrec, Team Dance), Gregory Hills NSW 2557	
C3	21 Rodeo Rd (Total Metering Services, ABYSS Aquariums), Gregory Hills NSW 2557	
C4	19 Rodeo Rd (O-Brien AutoGlass), Gregory Hills NSW 2557	
C5	17 Rodeo Rd (Aus Reo), Gregory Hills NSW 2557	
C6	RDM Pizza Australia, 52A Central Hills Dr, Gregory Hills NSW 2557	Immediately adjacent to the west of the Site boundary.
C7	49 Central Hills Dr, Gregory Hills NSW 2557	
C8	56 Central Hills Dr, Gregory Hills NSW 2557	
C9	4 White Cliffs Ave, Gregory Hills NSW 2557	
C10	42 Turner Rd, Smeaton Grange NSW 2567	30
C11	(Future Commercial), 36 Turner Rd, Smeaton Grange NSW 2567	20
C12	Warehouse units, 62-66 Turner Road, Smeaton Grange, NSW 2567	20
C13	Warehouse units, 62-66 Turner Road, Smeaton Grange, NSW 2567	35
C14	Macarthur Vet, 13 Rodeo Rd, Gregory Hills NSW 2557	35
Education		
E1	Magdalene Catholic College	1,200
E2	Gregory Hills Public School	1,470
Recreation		
AR1	Riparian area	Immediately adjacent to the east of the Site boundary.
AR2	Riparian area	



Legend

Proposal area

Receiver Type

- Childcare
- Commercial
- Education
- Residential
- Recreation

Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere

0 95 190 380 Metres

ARUP

151 Clarence Street
Sydney NSW 2000
Tel +61 2 9320 9320
www.arup.com

Client
Confidential

Project Name
43-61 Turner Road Data Centre

Drawing Title
Air quality sensitive receivers

Scale at A4
1:15,699

Project Number
299816-00

Figure No.
6-7

Rev	Date	By	Chkd	Appd	Authd
A	26/09/24	MD	CS	CS	CS

6.5.3 Assessment

The following section summarises the assessment presented in Appendix L (Air Quality Technical Report).

Construction

Given the scale and duration of construction, the main potential impact would be amenity-related due to the risk of dust generation and emissions to air from equipment and machinery generated by fuel combustion.

Dust emissions

The potential dust generating activities would result from:

- Site establishment
- Piling
- Construction of pavements, services, and hardstand.

All dust-generating activities would occur within the Site boundary. The closest sensitive receivers are commercial/industrial premises next to the site. These receivers are typically less sensitive when considering amenity impacts compared to residential receivers.

The closest sensitive residential receivers are approximately 140 metres from the Site. Given this distance and the temporary nature of the dust-generating activities, the risk of amenity/nuisance issues and human health impacts would be low and typically manageable via management measures to control the generation and spread of dust outlined in Section 6.5.4.

Equipment and machinery emissions

Exhaust emissions from construction plant, machinery and vehicles may also generate impacts on local air quality. Such emissions (particularly NO_2, PM_{10} and $PM_{2.5}$) are associated with the combustion of fossil fuels during vehicle movement and the operation of on-site plant and construction machinery. No diesel fuelled generators are proposed for use onsite during construction.

Given the distance to residential receivers, temporary nature of construction and intermittent use of equipment and machinery within the Site, the risk of human health impacts would be low and managed with the implementation of standard mitigation measures outlined in Section 6.5.4.

Operation

Generator testing

The primary source of emissions during operation will be the backup generators that are needed in the event of mains power loss or damage of electrical infrastructure onsite. As noted under Section 3.7.1, there needs to be the regular and routine testing of the back-up generators to make sure they are ready to operate should an unexpected interruption to mains power occur. The air quality assessment has therefore considered two scenarios in which the backup generators would be operating and therefore, emitting pollutants.

- *Scenario 1 (peak emission and air pollutant scenario)* | Justified but highly unlikely worst-case scenario, where all generators would be operating under a loss of mains power situation, which is only likely to occur 0.05 per cent each year with the power loss lasting for typically less than an hour (see Section 3.3.3).
- *Scenario 2 (testing of the back-up power systems)* | Realistic operations, where routine operational testing would take place every fortnight at no load and load testing undertaken annually.

While in use, standby generators produce a range of pollutants including total unburned hydrocarbons, oxides of nitrogen (NO_x), carbon monoxide (CO), particulate matter (PM), sulfur dioxide (SO_2) and volatile organic compounds (VOC). The release of these emissions has the potential to impact local air quality in the surrounding area. Due to the fuel type proposed (e.g., diesel), the pollutant of greatest concern in relation to the use of generators is typically NO_x, as these emissions are orders of magnitude greater than for other pollutants.

Scenario 1 (peak emission and air pollutant scenario) | The combined NO_2 ground level concentrations, including existing background concentrations described above in Section 6.5.2, are predicted to exceed the impact assessment criterion at all receivers, with the highest concentration predicted at in adjacent riparian corridor (*AR2*).

Combined PM_{10} and $PM_{2.5}$ ground level concentrations are predicted to exceed the impact assessment criterion at several surrounding sensitive receivers. For PM_{10}, exceedances are predicted at two locations (the commercial property at 42 Tuner Road [C10] and along the riparian corridor [AR2]). For $PM_{2.5}$, exceedances are predicted at 16 locations (9, 29 and 63 Pioneer Street [*R1 to R3*], the commercial receivers along Rodeo Road, except for the MacArthur Vets, 59 and 52A Central Hilld Drive [*C1 to C7*], all commercial properties on Turner Road [*C10 to C13*], and the riparian corridor next to the site [*AR1 and AR2*]). The highest PM_{10} and $PM_{2.5}$ concentrations are predicted at next to the site along the riparian corridor (AR2), given its proximity to the site and likely building downwash effects.

All other assessed pollutants (CO, SO_2, Benzene and polyaromatic hydrocarbons (PAH)) are predicted to be below the relevant impact assessment criteria at all receivers, and therefore no exposure or pollutant impact is predicted.

As there is a 0.05 percent chance for a power outage in any year (see Section 3.3.3), and the outages only last for around an hour, while there will be a recorded exceedance of the health-based criteria, the low frequency and short-term nature of any emissions will mean any actual health-based impacts are avoided.

Scenario 2 (testing of the back-up power systems) | The combined ground level concentrations of all pollutants, accounting for the background concentrations described above in Section 6.5.2, are predicted to be below the relevant impact assessment criteria at all receivers.

6.5.4 Mitigation and management

Table 6-16 below outlines the proposed measures to mitigate and manage potential air quality impacts.

Table 6-16: Air quality mitigation and management measures

ID	Impacts	Mitigation	Responsibility	Timing
AQ01	Risks to air quality during construction from fugitive dust	A **Dust and Air Quality Management Plan** will be prepared and implemented as part of the Proposal's CEMP. The Plan will: • Identify potential sources of air pollution during construction, such as dust, vehicles, odour transporting waste, plant and equipment. • Include mitigation and suppression measures, such as, but not limited to: – Spraying or covering exposed surfaces – Provision of vehicle clean down areas – Covering of loads	Contractor	Pre-construction / Construction

ID	Impacts	Mitigation	Responsibility	Timing
		– Street cleaning – Use of dust screens • Maintenance of plant in accordance with manufacturer's instructions and specifications • Pre-start vehicle and equipment checklists to make sure they are maintained and in good working order. • Methods to manage works during strong winds or other adverse weather conditions • A progressive rehabilitation strategy for exposed surfaces • When the air quality, suppression and management measures need to be applied, who is responsible, and how effectives will be assessed. • Community notification and complaint handling procedures, as required. Air quality management objectives will be consistent with any relevant published EPA Guidelines.		
AQ02	Risks to air quality during maintenance of standby generators	Operation of standby generators during testing and maintenance should be minimised as far as practicable. The back-up generators and other equipment will be routinely serviced to manufacturer specifications to maintain their operational efficiency.	Operator	Operation
AQ03	Risks to air quality during operation of standby generators in the event of a loss of mains power	A Back-up Generator Incident Report will be prepared within 30 days of the system being used in an emergency. The Report will detail: • The date and time of the power outage • The total number of back-up generators used to power the site • The total number of hours the back-up generators were operated • The total quantity of diesel used to feed the back-up generators • The total amount of electricity produced by the generators • Evidence to prove the air quality goals were not exceeded.	Operator	Operation

6.6 Noise and vibration

This section summarises the potential noise and vibration impacts for the Proposal. Appendix M (Noise and Vibration Assessment Report) includes the supporting technical assessment.

6.6.1 Method

The noise and vibration assessment presented in Appendix M (Noise and Vibration Assessment Report) involved the following.

- Identified the nearest sensitive receivers in the surrounding area
- Established ambient noise conditions using short-term noise monitoring at four locations.

- Assessed construction noise impacts
- Assessed operational noise impacts
- Identified management measures to mitigate any impacts or risks.

Modelling was used to predict the construction and operational impacts as described in Sections 5 and 6 of Appendix M (Noise and Vibration Assessment Report). Table 6-17 below shows where noise was monitored for 15-minute periods and the source of the noise was recorded (termed short-term attenuated monitoring, A01 to A04). This compares to the two locations where noise loggers were left onsite unattended for 14 days between 20 July 2023 and 2 August 2023, termed long-term unattended monitoring, L1 and L2.

Table 6-17: Monitoring locations

ID	Address	Approximate distance from the Site boundary (m)
Unattended		
L1	79 Barrett Street, Gregory Hills	160
L2	7 Whitten Parade, Harrington Park	700
Attended		
A01	79 Barrett Street, Gregory Hills	160
A02	19 Booth Street, Gregory Hills	160
A03	7 Whitten Parade, Harrington Park	700
A04	39 Whitten Parade, Harrington Park	550

6.6.2 Existing environment

The following section describes the ambient noise levels the surrounding area based on the monitoring carried out in the locations described above.

Ambient noise levels

The ambient noise environment is dominated by local traffic and natural sounds including animals and insects during the day and insects in the evening and night. Noise from industrial activities was discernible at 19 Booth Street (A02) during the day. Table 6-18 below shows the ambient noise level at the two long-term monitoring locations and that while reasonably quiet, the noise levels are broadly consistent during the day, evening, and at night.

Table 6-18: Long term noise monitoring results

Location	Time period[1]	Rating background noise levels, dBL_{A90}	Ambient noise levels, dBL_{Aeq}
79 Barrett Street, Gregory Hills (L1)	Day	39	55
	Evening	42	54
	Night	37	52
7 Whitten Parade, Harrington Park (L2)	Day	35	58
	Evening	41	56
	Night	33	51

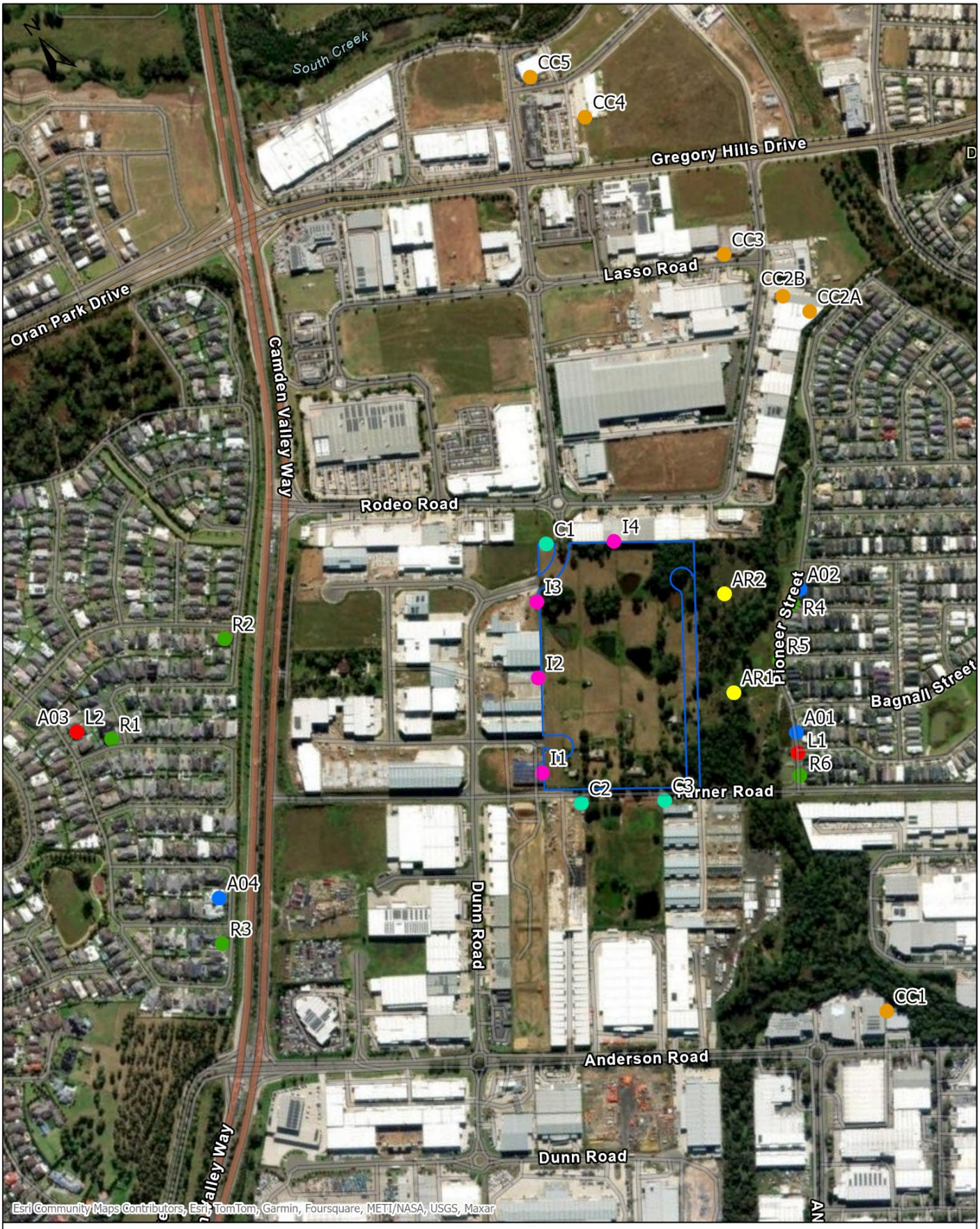
Notes:
Day | 7 am to 6 pm Monday to Saturday and 8 am to 6 pm Sundays & Public Holidays
Evening | 6pm to 10 pm
Night | 10 pm to 7 am Monday to Saturday and 10 pm to 8 am Sundays & Public Holidays

Sensitive receivers

Table 6-19 summarises the nearby noise sensitive receivers. The locations of these are shown in Figure 6-8.

Table 6-19: Identified nearby noise sensitive receivers

Receiver ID	Receiver address/name	Approximate distance from the Site boundary (m)
Residential		
R1	34 Sorell Way, Harrington Park NSW 2567	680
R2	38 Wingham Ave, Harrington Park NSW 2567	500
R3	44 Whitten Parade, Harrington Park NSW 2567	570
R4	19 Pioneer St, Gregory Hills NSW 2557	160
R5	33 Pioneer St, Gregory Hills NSW 2557	135
R6	63 Pioneer St, Gregory Hills NSW 2557	180
Childcare facilities		
CC1	Young Academics Early Learning Centre - Smeaton Grange, 89 Anderson Rd, Smeaton Grange NSW 2567	450
CC2A and CC2B	Young Academics Early Learning Centre - Gregory Hills, 47 Rodeo Rd, Gregory Hills NSW 2557	370
CC3	Jenny's Kindergarten & Early Learning Gregory Hills, 87 Lasso Rd, Gregory Hills NSW 2557	460
CC4	Raising Stars Gregory Hills Early Learning Centre, 4 Digitaria Dr, Gledswood Hills NSW 2557	670
CC5	Nido Early School Gregory Hills, 13 Holborn Cct, Gledswood Hills NSW 2557	730
Commercial		
C1	15 Rodeo Rd, Gregory Hills NSW 2557	Immediately adjacent to the north of the Site boundary.
C2	42 Turner Rd, Smeaton Grange NSW 2567	30
C3	Warehouse units, 62-66 Turner Road, Smeaton Grange, NSW, 2567	20
Industrial		
I1	4 White Cliffs Ave, Gregory Hills NSW 2557	Immediately adjacent to the west of the Site boundary.
I2	52 Central Hills Dr, Gregory Hills NSW 2557	
I3	48 Central Hills Dr, Gregory Hills NSW 2557	
I4	19 Rodeo Rd (O-Brien AutoGlass), Gregory Hills NSW 2557	Immediately adjacent to the north of the Site boundary.
Recreation		
AR1	Riparian area	Immediately adjacent to the east of the Site boundary.
AR2	Riparian area	



Legend

Proposal area

Receiver type

- Childcare
- Commercial
- Industrial
- Recreation
- Residential

Monitoring locations

- Attended
- Unattended

Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere

0 60 120 240 Metres

ARUP

151 Clarence Street
Sydney NSW 2000
Tel +61 2 9320 9320
www.arup.com

Client

Confidential

Project Name

43-61 Turner Road Data Centre

Drawing Title

Noise sensitive receivers and monitoring locations

Scale at A4

1:9,947

Project Number

299816-00

Figure No.

6-8

Rev	Date	By	Chkd	Appd	Authd
A	26/09/24	MD	CS	CS	CS

6.6.3 Assessment

The following section summarises the assessment presented in Appendix M (Noise and Vibration Assessment Report).

Construction

Equipment and machinery emissions

Machinery and equipment noise will be generated during construction principally from using excavators, compactors, jack hammers and heavy and light vehicles over the 18 month construction period of the data centre building.

Table 6-20 outlines the predicted noise levels generated for different stages of construction against each of the sensitive receivers. These results show that construction noise levels are predicted to exceed the levels at the nearest residential, commercial, industrial and childcare receivers where noise management measures need implementing, when carrying out the five activities listed in Section 3.9.

The predicted noise levels are conservative, based on a worst-case scenario of a 15-minute period where all equipment is operating simultaneously at its maximum output at the site boundary. Such exceedances are expected to be rare and temporary, with lower impacts anticipated during other times. In practice, noise levels will vary in intensity and occur only during specific work periods. Nonetheless, mitigation measures will be implemented to manage impacts due to noise. Exceedances are marked with a red dot (●).

Based on the predicted noise levels, residential receivers along Pioneer Street are the most sensitive receivers and would be most affected during Activity 1 and Activity 3 which are the noisiest activities. Commercial and industrial receivers along Turner Road and Central Hills drive also experience exceedances during Activity 1 and Activity 3 given their proximity immediately adjacent to the Site. Recreational receivers associated with the Kenny Creek riparian corridor have exceedances during Activities 1, 2, 3 and 4.

Table 6-20: Predicted noise levels during construction

Receiver ID	NML, $dBL_{Aeq\ 15min}$		Predicted noise level, $dBL_{Aeq\ 15min}$				
	Standard hours	Highly Noise Affected	Activity 1 Site establishment	Activity 2 Piling, slab foundations & utility tie-ins	Activity 3 Pavement & external hard stand	Activity 4 Building construction	Activity 5 Plant installation, connection, commission & testing
Residential							
R1	*45*	*75*	41	25	37	25	12
R2	*45*	*75*	● 55	39	51	39	25
R3	*45*	*75*	● 58	42	● 54	43	29
R4	*49*	*75*	● 58	42	● 54	43	29
R5	*49*	*75*	● 71	● 55	● 67	● 56	42
R6	*49*	*75*	● 71	● 55	● 67	● 56	42
Childcare facilities							
CC1	*55*	-	● 63	47	● 59	47	33
Commercial							
C1	*70*	-	● 81	65	● 77	65	51
C2	*70*	-	● 78	62	● 74	63	49
C3	*70*	-	● 78	62	● 74	63	49
Industrial							

Receiver ID	NML, dBL$_{Aeq\ 15min}$		Predicted noise level, dBL$_{Aeq\ 15min}$				
	Standard hours	Highly Noise Affected	Activity 1 Site establishment	Activity 2 Piling, slab foundations & utility tie-ins	Activity 3 Pavement & external hard stand	Activity 4 Building construction	Activity 5 Plant installation, connection, commission & testing
I1	*75*	-	● 82	66	● 78	67	53
I2	*75*	-	● 83	67	● 79	67	53
I3	*75*	-	● 82	66	● 78	67	53
I4	*75*	-	● 82	66	● 78	67	53
Recreational							
AR1	60	-	● 83	● 67	● 79	● 67	53
AR2	60	-	● 77	● 61	● 73	● 61	48

Traffic emissions

The noise generated from the increase in construction traffic or the temporary changes in network performance as described above in Section 6.2.3 would be marginal. This is simply because the changes in traffic numbers on any given road would be insufficient to result in a perceptible noise impact, which is taken as being a 3dB increase, the equivalent to a doubling in traffic.

The exception would be the noise generated form the vehicles entering and leaving site via the new Turner Road/Eastern Access Road and Eastern Access Road/Site Access intersections as this would introduce traffic into an area currently not exposed to any related noise, meaning the impact would be perceptible. It is predicted there would be around 75 heavy vehicles and 80 light vehicles arriving and leaving site every day from these intersections mainly in the AM and PM peak period (see Section 6.2.3). Despite the construction activity dominating the noise landscape and resulting in the exceedances above, with a negligible contribution from traffic noise, the characteristics of both sources differ. This means there is still predicted to be a perception of traffic noise introduced in construction, mainly at the times when no construction is taking place onsite (i.e., at the start and end of the day) and potentially during the quieter period (i.e., Activity 5). Regardless, any impacts would be short-term and temporary limited to the peak periods when the most traffic arrives and leave site.

Vibration

During construction, vibration impacts will be influenced by factors such as the equipment type, size, quantity, and proximity to sensitive areas.

As outlined in Table 9 of Appendix M (Noise and Vibration Assessment Report), which references the Construction Noise and Vibration Guidelines (CNVG), there is a risk of adverse vibration impacts when vibration-generating equipment is located within minimum working distances of structures, particularly those along the western and northern boundary of the Site. Given the close proximity of the Proposal to adjacent properties, vibration mitigation measures will be necessary. If equipment is positioned within the minimum working distances, the Contractor will implement strategies such as:

- Selecting low-vibration equipment
- Vibration monitoring to assess compliance with vibration criteria. The vibration criteria to be adhered to during monitoring will be as specified in Appendix M (Noise and Vibration Assessment Report).

Operation

Equipment and machinery emissions (including generator testing)

Three different operating scenarios were assessed to consider the noisiest operational activities likely to occur.

- *Scenario 1 (peak emission scenario)* | Justified but highly unlikely worst-case scenario, where all generators and equipment would be operating under a loss of mains power situation, which is only likely to occur 0.05 per cent each year with the power loss lasting for typically less than an hour (see Section 3.3.3).
- *Scenario 2 (testing of the back-up power systems)* | Realistic operations, where routine operational testing would take place every fortnight and load testing would take place every year as per the details in Table 3-3 above.
- *Scenario 3 (standard operations)* | When all equipment is operating except the generators, a scenario not considered for the air quality assessment as there will be no onsite air quality emissions during standard operations.

Noise levels were predicted for both standard (no wind) and noise-enhancing (windy) weather conditions for all scenarios.

In order to mitigate the noise impacts of the generators, load banks and exhaust fans they would be contained within acoustic enclosures. The substation would also be provided with blast walls around the transformers to minimise noise impacts.

Scenario 1 (peak emission scenario) | As noted in Section 3.3.3, there is a 0.05 per cent chance for a power outage in any year and the outages only last for around an hour. This means the likelihood of an outage resulting all generators operating at the same time would be exceptionally low. Table 6-21 below shows the noise generated under this scenario. The results are provided for reference as there is no equivalent noise criterion for such an emergency scenario.

Table 6-21: Predicted noise levels – emergency operation

Receiver ID	Predicted level, $L_{eq,15min}$ dB(A)	
	Standard weather conditions	Enhanced weather conditions
Residential		
R1	31	34
R2	39	42
R3	40	44
R4	44	45
R5	45	46
R6	44	45
Childcare facilities		
CC1	38	41
CC2	39	42
CC3	29	32
CC4	37	41

Receiver ID	Predicted level, $L_{eq,15min}$ dB(A)	
	Standard weather conditions	Enhanced weather conditions
CC5	31	34
Commercial		
C1	52	53
C2	57	58
C3	48	49
Industrial		
I1	60	61
I2	60	61
I3	53	54
I4	51	52
Recreational		
AR1	43	43
AR2	44	46

Scenario 2 (testing of the back-up power systems) | Maintenance operation noise emissions from the Site have been assessed in accordance with the Noise Policy for Industry (NPfI) (EPA, 2017). As confirmed in Table 14 and 15 of Appendix M, operational noise levels are predicted to comply with all criteria defined under the above Policy for all receiver types during standard operations at all receivers under both standard and enhanced weather conditions.

Scenario 3 (standard operations) | Standard operation noise emissions from the Site have been assessed in accordance with the Noise Policy for Industry (NPfI) (EPA, 2017). As confirmed in Table 16 and 17 of Appendix M, standard operational noise levels are predicted to comply with all criteria defined under the above Policy for all receiver types under both standard and enhanced weather conditions.

Traffic emissions

During the site's operation there would be fewer vehicles entering and leaving site, which as described in Section 6.2.3 would be in the context of worsening traffic conditions on the key roads in the area. This means the operational project would continue to have no material noise related impact on the three key roads in the area as it would not result in a doubling in traffic to generate a perceptible increase in noise. The routine use of the two new intersections once the site is operational may introduce noise that is perceptible to those receivers immediately adjacent to the site (see Table 6-20) who currently experience low ambient noise levels. However, this would be in the context of an area that is undergoing a gradual industrial transition, meaning that any site traffic noise would be consistent and characteristic of the area's emerging land use. Certainly, noise levels would be insufficient to require any specific treatment or management due to the low vehicle numbers associated with the Proposal.

Low frequency noise and vibration

Low frequency noise has been assessed in accordance with the NPfI. This assessment determined that there is no predicted imbalance in the spectrum of the low-frequency noise emissions. This means that the distribution of energy across different frequencies within the low-frequency range is relatively balanced,

resulting in reducing potential annoyance or adverse effects. Site noise emissions are assumed to not exhibit tonal characteristics.

6.6.4 Mitigation and management

Table 6-22 below outlines the proposed measures to mitigate and manage potential noise and vibration impacts.

Table 6-22: Noise and vibration mitigation and management measures

ID	Impacts	Mitigation	Responsibility	Timing
NV01	Overall noise and vibration impact	A **Construction Noise and Vibration Management Plan** will be prepared and implemented as part of the CEMP. This plan will include but not be limited to the following: • Roles and responsibilities • Noise sensitive receiver locations • Areas of potential impact • Mitigation strategy • Monitoring methodology • Community engagement strategy.	Proponent / contractor	Pre-construction / Construction
NV02	Noise generated during construction	Temporary noise barriers will be installed along the Site boundary, particularly on the eastern side, to shield the nearby sensitive receivers from construction noise.	Contractor	Construction
NV03	Noise generated by construction staff	The following noise mitigation practices will be adopted on Site: • Regularly train workers and contractors (such as at toolbox talks) to use equipment in ways to minimise noise. • Site managers to periodically check the Site and nearby residences for noise problems so that solutions can be quickly applied. • Avoid the use of radios or stereos outdoors. • Avoid the overuse of public address systems. • Avoid dropping items from height. • Avoid shouting, and minimise talking loudly and slamming vehicle doors. • Turn off all plant and equipment when not in use.	Contractor	Construction
NV04	Vibration impact during construction	All vibration intensive equipment will adopt at least the minimum safe-working distances set under guidance. By precaution, should equipment be located within these distances, additional mitigation measures, such as reselection of low vibration generating equipment and/or vibration monitoring, will be used.	Contractor	Construction
NV05	Noise generated from operational equipment	Generators, load banks, and exhaust fan units will be contained within an acoustic enclosure.	Contractor	Operation
NV06	Noise generated from operational equipment	Attenuators will be included at the air handling unit (AHU) room intake.	Contractor	Operation

6.7 Ground and water conditions

This section summaries the potential impact on ground and water conditions. Appendix N1 (Preliminary Site Investigation), Appendix N2 (Detailed Site Investigation), Appendix N3 (Groundwater Assessment), Appendix N4 (Contamination Assessment), Appendix N5 (Geotechnical Report) and Appendix O (Surface Water Management and Flood Impact Assessment) include the supporting technical assessments considered and summarised in this section. An integrated water management plan was also prepared, refer to Section 6.6 of Appendix O (Surface Water Management and Flood Impact Assessment).

6.7.1 Method

The preliminary site investigation presented in Appendix N1 involved the following.

- Completing a desktop review of available information and validating this onsite to assess the potential for encountering and mobilising contaminants on and offsite.
- Identifying the potential for construction and operation activities to potentially involve contaminants of potential concern (COPC), which could impact the receiving environment.
- Assessing the impact of developing the site as a data centre form the perspective of causing or encountering pollution, contamination, or impacting on the values of the receiving environment and determining the need to carry out targeted sampling onsite.

The detailed site investigation presented in Appendix N2 involved the following.

- Sampling the soil and groundwater, followed by laboratory analysis.
- Assessing analytical data against adopted Site assessment criteria.
- Assessing the nature, extent, and risk to human and/or ecological health of potential contamination associated with historical use of the Site.
- Providing recommendations for further assessment, management and/or remediation.
- Describing the measures to manage, mitigate, and monitor any impacts.

The groundwater assessment presented in Appendix N3 was undertaken to address data gaps identified in the detailed site investigation and involved the following.

- Preparing a sampling and analysis quality plan
- Installing and sampling of groundwater monitoring wells
- Carrying out surface water sampling and analysing the samples for the COPC
- Assessing hydraulic conductivity in the groundwater across the site.

The contamination assessment presented in Appendix N4 was undertaken to address data gaps identified in the soil contamination investigations undertaken on the Site and involved the following.

- Summarise the works completed
- Identify if remediation of the Site is required.

The geotechnical assessment presented in Appendix N5 was undertaken to address data gaps identified in the detailed site investigation and involved the following.

- Review of previous geotechnical investigation reports relevant to the Site
- Field works to carry out borehole drilling and sampling
- Laboratory tests to determine chemical and physical properties of subsurface soils and bedrock.

The surface water management and flood impact assessment presented in Appendix O involved the following.

- A review of the baseline surface water environment and the interaction between the Site and surrounding stormwater infrastructure
- Development of a drainage strategy to minimise impacts on receiving watercourses and riparian land
- Development of a water sensitive urban design system for the Site and used MUSIC modelling software to demonstrate compliance with relevant water quality guidelines
- Development of a strategy to minimise use of water on Site.
- Further assessment as described in Section 6.8.

6.7.2 Existing environment

The following section describes ground and water conditions onsite.

Ground conditions

The ground conditions at the Site are summarised below.

Site topography

The topography of the Site ranges from approximately 91 to 104 metres above AHD, as described above in Section 2.2.2. The topography of the Site is undulating, sloping downward from the northwest corner of the Site to the eastern boundary of the Site. Under the early works development application (see Section 1.4), the site will be graded and include a retaining wall separating upper and lower platforms.

Geology

Geology at the Site is dominated by the Bringelly Shale unit. This is a mix of shale, carbonaceous claystone, laminate, sandstone, rare coal and tuff[2]. The shale unit is underlain by sandstone (part of the Wianamatta group) which comprises fine-to-medium grained quartz-lithic sandstone. Bedrock underlays the sandstone and generally consists of weathered yellowish brown to grey shale across the Site. This geology including the presence of shale and tuff, relatively weak rock type, can increase the risk of slope instability.

Soils

The Site is underlain by the Blacktown Residual Soils. This soil landscape is prone to water erosion and localised seasonal waterlogging. The soils are characteristic of the underling shale geology and are typical and expansive across this part of Sydney. Under the early works development application (see Section 1.4)

[2] Tuff is a type of soft, porous rock made from compacted volcanic ash.

ground works are planned to result in excavation and earthworks across the Site in order to provide a level and flat area to be built upon.

In terms of wider soil chemistry risks, there is an extremely low probability of acid sulfate soils occurring onsite given the geology and soils present on the Site, as confirmed through a review of the Australian Soil Resource Information System's Acid Sulfate Soil Map (CSIRO, 2014). A review of the Salinity Potential in Western Sydney 1:100K map (DIPNR, 2002) indicates the site is in an area of known salinity. Saline soils are well documented in Western Sydney with naturally high levels of saline groundwater due to the underlying shale bedrock and clay-rich soils that can hold onto salts, preventing them from leaching out. Further, a small area of confirmed saline soils was identified in the south-eastern portion of the Site during soil and groundwater testing.

Water conditions

The surface water and groundwater conditions at the Site are summarised below.

Surface water

Five surface waterbodies are present onsite, consisting of constructed agricultural farm dams drawing from an historical natural waterway. The dams are currently in the centre and north of the Site however they will be infilled as part of the planned early works, as described in Section 1.4.

Surface water runoff follows the topography, therefore flowing eastward and discharging about 60 metres east of the Site boundary into a tributary to Kenny Creek, oriented approximately parallel to the eastern Site boundary. Under the proposed early works onsite stormwater detention basins would be temporarily installed. Kenny Creek flows south where it joins Narellan Creek about 600 metres south of the Site. Narellan Creek flows to the southwest where it joins the Nepean River at Camden Weir, about 5.5 kilometres southwest of the Site.

Groundwater

While the aquifer characteristics under the Site comprise a porous and extensive geology (relating to the sandstone and bedrock described above), they only support low-to-moderate flows. The groundwater flows north-northeast to south-southeast. Groundwater is typically encountered 10 metres below ground level.

Groundwater and inflow dependent ecosystems

There is currently one terrestrial high potential groundwater dependent ecosystem (vegetation) was identified in the southeast corner of the Site relating to a stand of vegetation. There is also one inflow dependent ecosystem currently onsite associated with the farm dams. Under the early works the vegetation and farm dams associated with these GDEs would be removed.

Contamination

Site history

The Site has remained under small-scale agricultural land use since the 1940s, with the land comprising rural residential lots. In 2018, the Site was bought for development and the existing residence is now unoccupied.

Based on the historical site activities, the potential sources of contamination are:

- Current/former structures containing hazardous building materials
- Historical agricultural activities such as the application of herbicides and pesticides

- Operation of agricultural plant/machinery and motor vehicles
- Stockpiled material, which was found on site, including plastic pipes, building rubble, fill material and metal bars.
- The agricultural farm dams across the site
- Potentially contaminated runoff entering the Site from adjoining properties recently redeveloped as an industrial subdivision.

Site investigations

Contamination on site was confirmed through site investigations. The findings are detailed below.

Soil

The presence of asbestos was confirmed on the ground surface and within stockpiled material at the Site. While analytical soil results indicated detections of arsenic and various metals (i.e., chromium, copper, lead, nickel, zinc) across the Site, the concentrations were below the human health risk criteria. It was concluded that the metal concentrations are likely indicative of regional background concentrations and do not represent anthropogenic (artificial) contaminants.

Additional investigation undertaken as part of the contamination assessment (Appendix N4) has however, identified localised asbestos contamination to be present. This includes asbestos surface fragments across the former building footprint areas on the southern boundary of the Site. As such, a Remediation Action Plan (RAP) has been developed for the removal of asbestos contamination which will form part of the early works DA.

Surface water

Nitrogen, zinc, and copper had previously been detected in the onsite dam waters in concentrations that exceeded criteria that would impact aquatic ecology (Geo-Logix, 2022). Faecal coliforms were also detected however at concentrations that would not cause harm to human health.

Groundwater

While hydrocarbons were detected in the groundwater during the detailed site investigation, they were not detected in the subsequent groundwater investigation. This was attributed in differences in aquifer conditions at the time of sampling. Therefore, no unacceptable risk to current or future site users from vapour intrusion was identified.

Heavy metals (i.e., copper, nickel, zinc) are present groundwater at concentrations that can potentially harm ecological values. Given the metal concentrations observed in groundwater this indicates a regional problem beyond the site.

6.7.3 Assessment

This section describes the impact on ground and water conditions. Historical site contamination will not pose a risk to sensitive receptors (such as workers, adjacent site users, groundwater and inflow dependent ecosystems and ecological receptors) as the Site will undergo rehabilitation and remediation prior to construction as part of the separate development application (DA/2024/616/1) described in Section 1.4. There will also be no impacts to or from the surface water contained in the existing dams onsite as they will be dewatered and infilled as part of the separate works as well (see Section 1.4).

Construction

Ground conditions

The following impacts may occur because of construction activities, particularly works involving excavations, earthworks and piling:

- Associated soil quality impacts through accidental spills caused by:
  - Use of chemicals outside of contained areas
  - Traffic accidents, including loading and unloading risks
  - Leaks and drips from poorly maintained vehicles, machinery, and equipment
  - Leaching resulting from temporary storage and management of spoil and waste
- Washout, erosion, and sediment discharge of exposed soils
- Erosion, leaching, and dust generation from stockpiled materials
- Loss of soil quality and condition from material stockpiling
- Encountering saline soils.

Excavation, earthworks and piling is also likely to cause ground movement and subsequent settlement. The extent of this impact is predicted to be limited. These activities are not anticipated to impact existing, publicly owned infrastructure or utilities located outside of the Site.

Surface water

Potential surface water runoff and associated water quality impacts during construction could occur because of:

- Earthworks or movement of soil resulting in sediment laden runoff and sedimentation, as well as the release of any in situ contaminated material within the soils
- Contamination from accidental spillages of fuels, lubricants, effluent and other chemicals and materials used during construction in the exceptional
- Dewatering open excavations following periods of rainfall, which may contain sediments and other mobilised pollutants.

Where sediments from the Site enter receiving waterways, namely the tributary to Kenny Creek located 60 metres east of the Site, there is the potential to adversely impact water quality, by increasing turbidity, lowering dissolved oxygen levels, increasing nutrients and introducing pollutants.

While the above impacts could feasibility occur, by adopting the mitigation measures in Section 6.7.4, which are widely implemented given the proof of their effectiveness, such impacts can be minimised or likely avoided.

Groundwater

Groundwater will not be encountered as the planned maximum excavation depth associated with the piling would be less than the depth to groundwater which is around 10 metres. Impacts during construction are therefore limited to potential pollutant infiltration to groundwater associated with piling.

Operation

The following impacts may occur because of operational activities taking place at the Site.

Ground conditions

The proposed landscape planting would allow exposed soil to stabilise and re-establish over time helping to prevent soil erosion and runoff. However, in the short-term there would be the potential for:

- Soil erosion and sedimentation
- Loss in soil quality from direct and indirect runoff, for example stormwater drains if they are not properly maintained and back-up.

However, by the adoption of proven and effective mitigation in the short-term as described below in Section 6.7.4 will minimise and likely avoid the above impacts.

Water conditions

Impacts to surface and groundwater from carrying out operational activities may result in:

- Ongoing scour, erosion and sedimentation around overland flow discharge points due to changes in hydrology
- Spills and leaks during operation and specifically diesel spillage during the refilling of storage tanks, which would only take place once every six months (see Section 3.7.1).

Proposed stormwater infrastructure will act to improve the quality of stormwater discharge for the Site via the use of filter baskets and gross pollutant traps. The Site will also have a rainwater harvesting tank for water cycle management, which will further improve the quality of stormwater discharge.

6.7.4 Mitigation and management

Table 6-23 lists the proposed measures to mitigate and manage impacts to ground and water conditions.

Table 6-23: Ground and water conditions mitigation and management

ID	Impacts	Mitigation	Responsibility	Timing
GW01	Soils and water quality impacts	A **Soil and Water Management Plan** will be prepared and implemented as part of the CEMP. The Plan will identify all reasonably foreseeable risks relating to ground and water condition impacts and describe how these risks will be addressed during construction. It will require all erosion and sediment control measures to be provided onsite before construction starts. It will be prepared using the various volumes of Urban Stormwater Soils and Construction (Landcom, 2004). It will set out erosion and sediment control measures for various construction activities, including the clearing, excavation, and stockpiling to mitigate impacts. The Plan will include strategies to manage: • Appropriate locations of stockpiles, construction materials, fuels, and chemicals, including bunding where required • Divert or capture the overland flow water for filtration prior to discharge • Saline soils • Contaminated soils • The import of (virgin) excavated natural material for use onsite • Testing under the Resource Recovery Exemptions (EPA, 2022b) to reuse material • Discharge limits in accordance with section 120 of the POEO Act	Proponent / Contractor	Pre-construction / Construction

ID	Impacts	Mitigation	Responsibility	Timing
		• Records of the volume and type of fill • Installation of stabilised Site entry/exit points and wheel wash bays to minimise the transportation of construction materials onto adjoining roads • Sediment fencing to contain and manage runoff within the Site • Reuse of the temporary sediment basin to collect the runoff on the construction Site • Reuse of the stormwater collected in the temporary sediment basin for dust suppression • Use of mesh and gravel and geotextile inlet filters • Implementation of a maintenance plan for the Site and wider private stormwater network.		
GW02	Risk of impacts to water and soil quality from unexpected spills	A Site-specific Emergency Spill Plan will be developed and implemented as part of the CEMP. It will include management measures and relevant EPA guidelines. The Plan will address measures to be implemented in the event of a spill, including initial response and containment and the notification of emergency services and relevant authorities, including the EPA.	Proponent / Contractor	Pre-construction / Construction
GW03	Risk of erosion and sediment movement during construction	Suitable erosion and sediment controls will be installed before construction starts in accordance with the Erosion and Sediment Control Plan and Urban Stormwater Soils and Construction Volume 1 (Landcom, 2004). Further environmental assessment will be carried out if they need locating outside of the Site.	Contractor	Pre-construction / Construction
GW04	Environmental impacts from sediment movement	All stockpiles will be designed, established, operated, and decommissioned in accordance with the Stockpile Management Guidelines (EPA, 2021b).	Contractor	Pre-construction / Construction
GW05	Risk of mixing saline soils and non-saline soils	Testing will verify the Site-specific soil and groundwater aggressivity. Following this, an earthworks management strategy will be developed to avoid mixing of saline soils in areas of lower or non-saline soils.	Contractor	Pre-construction / Construction
GW06	Risk of spreading contaminated materials throughout the Site and into the environment	Any potentially contaminating materials will be stored onsite in a secure containment area in the compound. This will have sufficient capacity to hold 110 percent of the stored volume, and any spills or discharges will be collected and transported offsite to a licenced facility in accordance with the established waste management procedures.	Contractor	Pre-construction / Construction
GW07	Risk of fuel and chemical spills during construction	Vehicle and equipment maintenance will take place in the contained area in the Site compound to prevent any loss in the event of an accidental spill. Equipment and machinery will not be refuelled onsite. All equipment will be checked prior to use to ensure there are no oil, fuel and other leaks.	Contractor	Pre-construction / Construction
GW08	Risk of fuel and chemical spills during operation	An Emergency Spill Plan will continue to be implemented onsite during operation.	Proponent	Operation
GW09	Risk of ground movement and	A Site reinstatement inspection will be carried out to confirm the area is stabilised and there is no residual erosion or sediment risk.	Proponent	Pre-operation / Operation

ID	Impacts	Mitigation	Responsibility	Timing
	erosion during operation			

6.8 Flooding risk

This section summarises the potential hydrology and flooding impacts. Appendix O (Surface Water Management and Flood Impact Assessment) includes the supporting technical assessment.

6.8.1 Method

The method used to carry out the stormwater and flooding assessment is as follows:

- Assessing the topography of the Site by reviewing baseline conditions such as topography and utility connections and identifying any changes required
- Reviewing the interaction between the Site and stormwater infrastructure
- Reviewing the water recycling and reuse opportunities for the Proposal
- Calculating the site water balance
- Reviewing available flood assessments/mapping
- Identification of flood-risk on site with regard to adopted flood studies, the potential effects of climate change and relevant provisions of the NSW floodplain development manual
- Using a site-specific hydraulic flood (TUFLOW) model to assess potential impacts of flooding downstream
- Confirming that the proposed Finished Floor Levels[3] are positioned above the Flood Planning Levels[4] for the Site.
- Developing:
  - Erosion and sediment control plan
  - Drainage strategy
  - Water sensitive urban design system for the Site using stormwater (MUSIC) modelling software to demonstrate compliance with relevant water quality guidelines
  - A proposed case hydraulic model to assess development impacts with respect to infrastructure requirements and overland flows within the Site and adjacent land
  - Strategy to minimise use of water on Site.

6.8.2 Existing environment

Topography and surface water features are described in Section 6.7.2 above. A description of the existing stormwater and flooding environment is provided below.

[3] The Finished Floor Level refers to the height at which the floor of a building is proposed to be built.

[4] The Flood Planning Level is a height use to set floor levels for new developments in flood prone areas. The Flood Planning Level listed in the Camden Council Flood Risk Management Policy (Camden Council, 2023) is the 1% AEP flood level plus 500 millimetres.

Stormwater

There is currently no existing piped stormwater infrastructure present within the site. The nearest stormwater system is located along the adjoining roads to the site, Turner Road, White Cliff Avenue and Central Hills Drive.

Currently, rainfall runoff on site follows existing contours and flows into one of five farm dams present on site. Surface channels/swales convey overland flows to the dams, which ultimately discharge into adjacent Lot 18 and the un-named tributary located approximately 60 metres east of the subject site boundary, as described in Section 6.7.2 above.

Flooding

A site-specific hydraulic model was developed to assess flooding risk for the site. The results are presented in Appendix O (Surface Water Management and Flood Impact Assessment). The information provided below is based on the 1% Annual Exceedance Probability (AEP) flood event, which is a flood that has a one per cent chance of occurring, or being exceeded, in any one year.

In general, the Site is not subject to mainstream flooding, however it is subject to a limited extent of overland flow flooding under the following circumstances.

Peak flood depths

Flood depths for the 1% AEP event are illustrated in Figure 6-9.

The figure illustrates that the existing overland flow paths through the Site are concentrated to within the natural gullies (where the existing dams are located). Peak flood depths outside of the existing dams are generally less than 0.3 metres in the 1% AEP event, meaning there is a one per cent chance of flood depths to reaching or exceeding 0.3 metres in any one year. Through the remainder of the Site, surface water currently drains away as sheet flow, a thin layer of water flowing over the ground surface, either into the natural gully lines, or directly off the Site into the tributary to Kenny Creek 60 metres east of the Site. Overland flows drain quickly away from the Site due to the sloped nature of the site area, aside from the water retained in the existing dams. A small amount of surface water also drains away via infiltration into the soil.

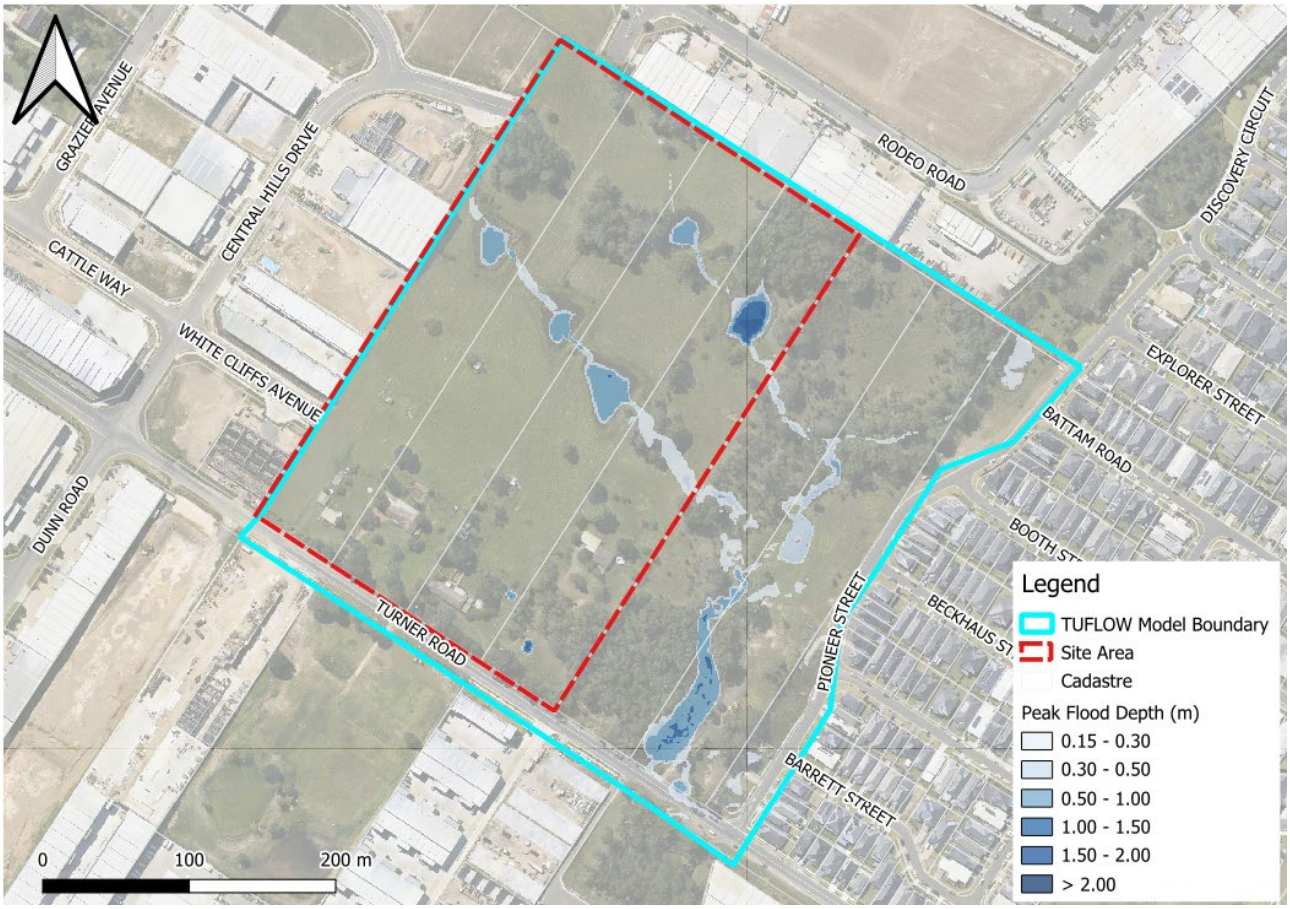


Figure 6-9: Peak flood depths – 1% AEP event

Peak velocity

Flood velocity for the 1% AEP event is illustrated in Figure 6-10.

The figure indicates the higher flow velocities currently occur within the existing gully lines, with the highest velocities occurring immediately downstream of the dams due to the topography of the site sloping downwards in this direction. Currently, the peak velocities generally do not exceed 2.0 m/s in the 1% AEP event are therefore considered to be moderate to low.

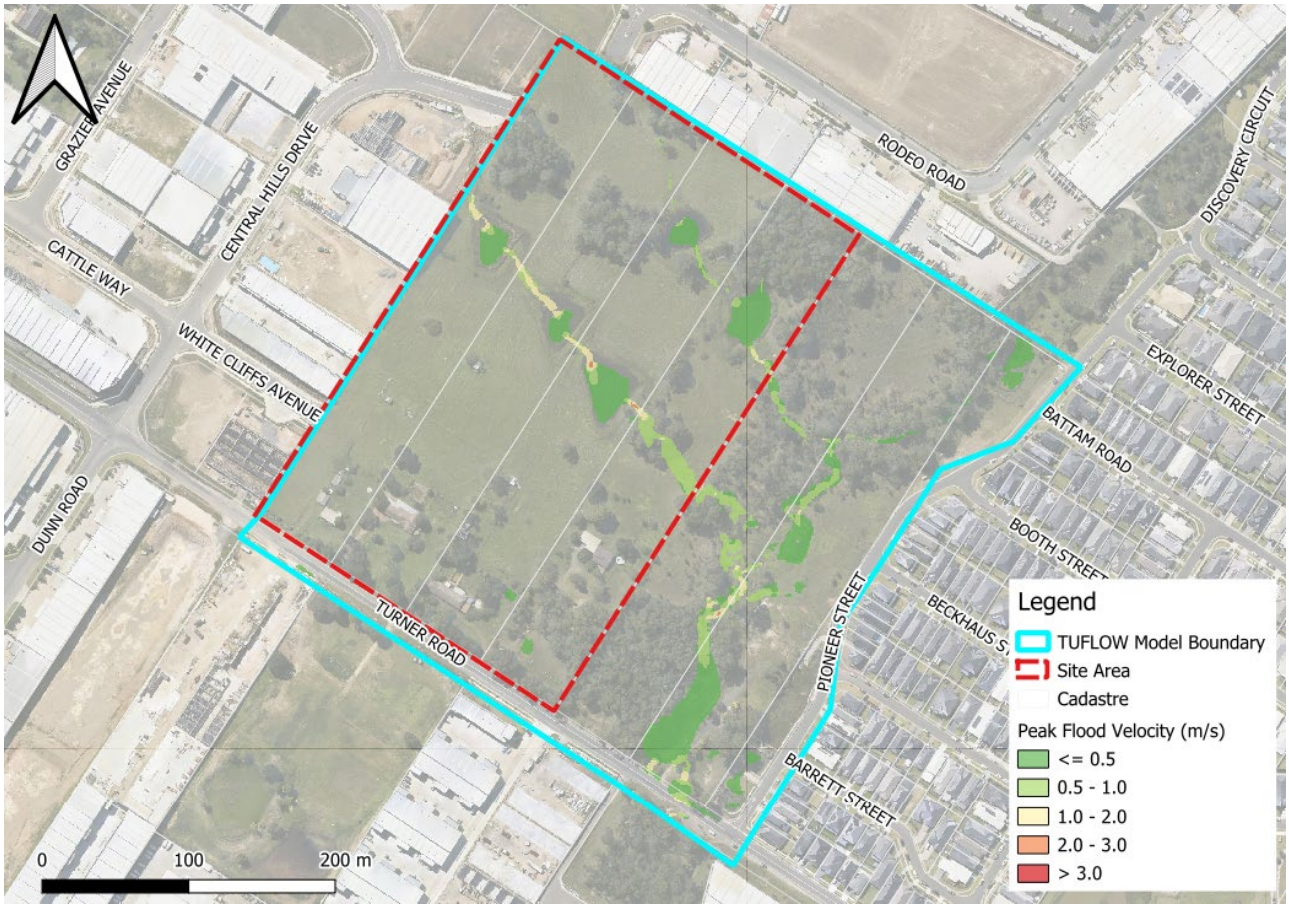


Figure 6-10: Peak flood velocity – 1% AEP event

Provisional flood hazard

Provisional Flood hazard for the 1% AEP event is illustrated in Figure 6-11.

The Australian Rainfall and Runoff Guide to Flood Estimation (Ball *et al.*, 2019) uses the above information to classify flood hazards into six categories (H1, considered generally safe for vehicles people and buildings, to H6, considered unsafe for vehicles and people and all buildings types considered vulnerable to failure). Figure 6-11 indicates the greatest flood hazard is currently highest within the existing dams, reaching the H4 (unsafe for vehicles and people) category in the 1% AEP. The flood hazard is currently either H2 (unsafe for small vehicles) or less in the 1% AEP for all areas outside of the dams, which is a considered a safe level for people.

It can be inferred from the results that the flood hazard within the Site is currently contained to within with the existing dams and overland flow paths, with the remainder of the Site not being subject to significant hydraulic hazard due to the shallow flood depths.

Figure 6-11: Provisional flood hazard – 1% AEP event

6.8.3 Assessment

This section describes the impact on flooding and stormwater drainage. Flooding and drainage on site will have changed from existing conditions due to the proposed early works described in Section 1.4. In the context of flooding and stormwater management, the proposed early works comprise:

- Temporary site stormwater management including swales, detention basins and stormwater discharge
- Establishment of a new stormwater drainage easement along northern boundary including below ground stormwater pit and pipe network
- Infilling the existing farm dams
- Temporary grading within site including key retaining wall separating upper and lower platforms including temporary erosion and sediment control measures such as swales and sediment basins. This grading will provide a natural overland flow path following the road alignment to the site entrance, shedding water away from the Site to the east.

Ultimately, stormwater will outfall to a newly constructed stormwater system under the eastern access road and discharge to the riparian corridor east of the Site.

Construction

Flooding and drainage

Flooding and drainage during construction will be managed by the infrastructure constructed as part of the early works, as described above. This will ensure the data centre is constructed on a site where the flooding and drainage is designed to accommodate predicted flood levels without placing pressure on the stormwater network. Construction of the data centre won't involve any modification or change to the flood immunity, inundation, hydraulics, overland flow rates or patterns or direction of runoff, meaning there would be effectively no additional impacts other than the following, which may occur during heavy rainfall:

- An increased surcharge in the stormwater system due to:
  - Temporarily changing runoff rates and flow paths, and therefore discharging more water to certain drainage lines
  - Reducing the capacity of the existing drainage infrastructure through sediment discharge during excavation
- Local ponding, pooling and flooding during and following heavy rainfall.

While the impacts would be small scale, the above may lead to the following:

- Collection of water in open excavations and associated worker safety risks
- Additional erosion and loss of soil from temporarily exposed areas
- Stockpile and earthworks destabilisation from additional washout
- Potential discharge of pollutants from accidental spills
- Loss of landscape planting due to washout.

Each of these has the potential to impact downstream water quality, as described below.

Operation

Stormwater

Stormwater infrastructure for the Proposal has been designed such that the discharge flow from the Site in the post-developed case is no greater than the pre-developed condition for all events up to and including the 1% AEP, as described in Section 9.1 of Appendix O (Surface Water Management and Flood Impact Assessment). Overland flows will be conveyed directly to the receiving watercourse to the east of the Site, consistent with the existing flow regime. This means there will be no effective impact to the stormwater runoff under the Proposal.

Flooding

As described above, stormwater infrastructure for the Proposal has been designed to accommodate predicted flows and convey them across the site in a similar fashion to existing conditions to ensure there are no adverse impacts on surrounding properties. For this reason, there are no significant increases in peak flood levels, velocities or flood hazards across the site compared to existing conditions, but rather a change in the areas of the Site that are affected.

Peak flood levels | While the distribution of overland flow paths within the Site will have changed from the existing condition, flooding during operation will be limited to the internal road corridors and parking bay areas in all flood events up to and including the 1% AEP event (refer to Figure 6-12). Flooding in these areas is predicted to be below 0.3 metres, consistent with peak flood levels in the pre-development condition. Significant flooding (1.5-2 metres) will be confined to the swale drain.

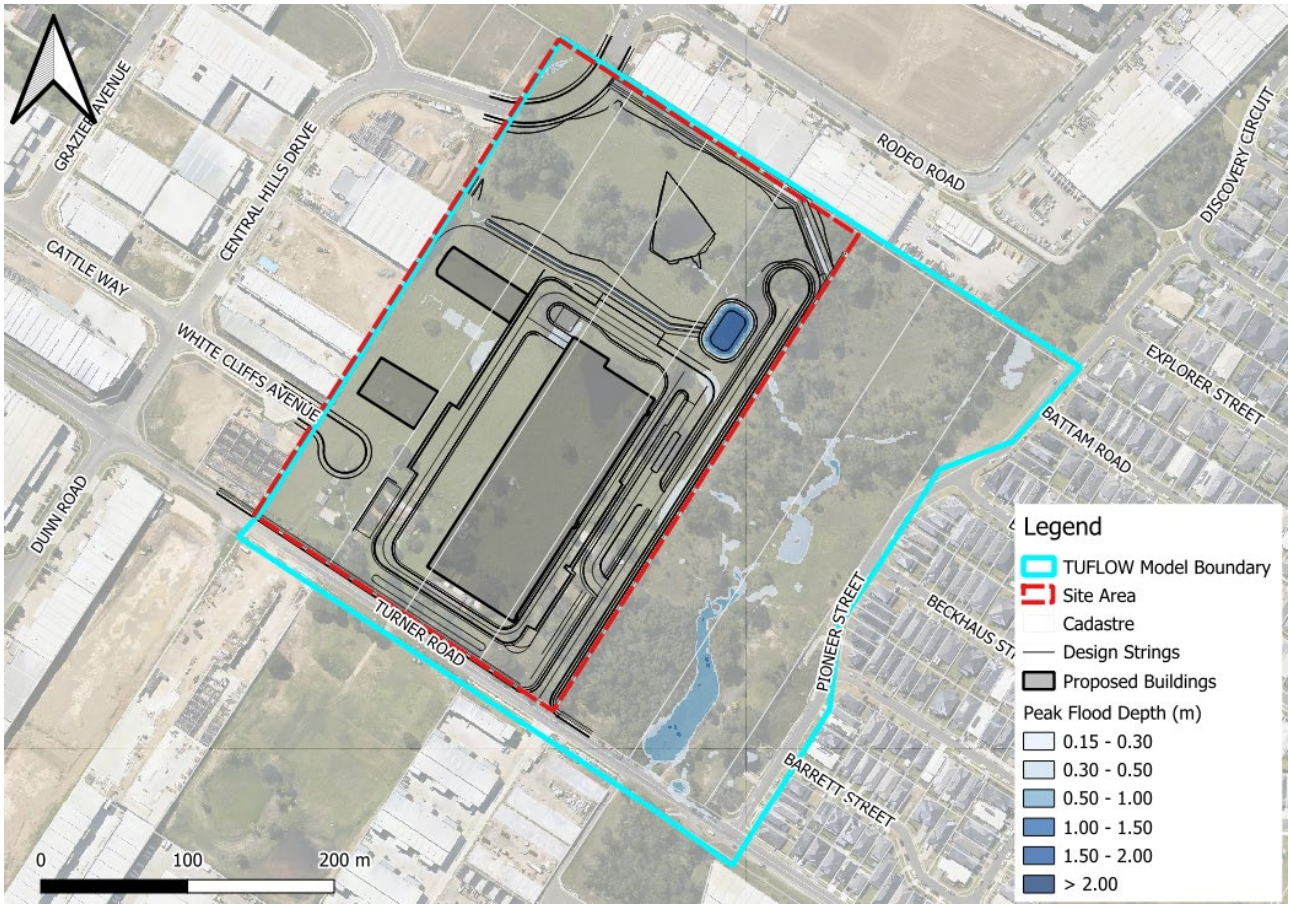


Figure 6-12: Operational peak flood depths – 1% AEP event

Velocity | Flow velocities through the site in the post-development condition are predicted to increase slightly (by 0.1m/s) from the existing velocities within the Site prior to any early works. This is due to the increased amount of hardstand which will concentrate overland flows and reduced infiltration (refer to Figure 6-13). However, the peak velocities leaving the Site are not predicted to increase substantially from those that currently exist.

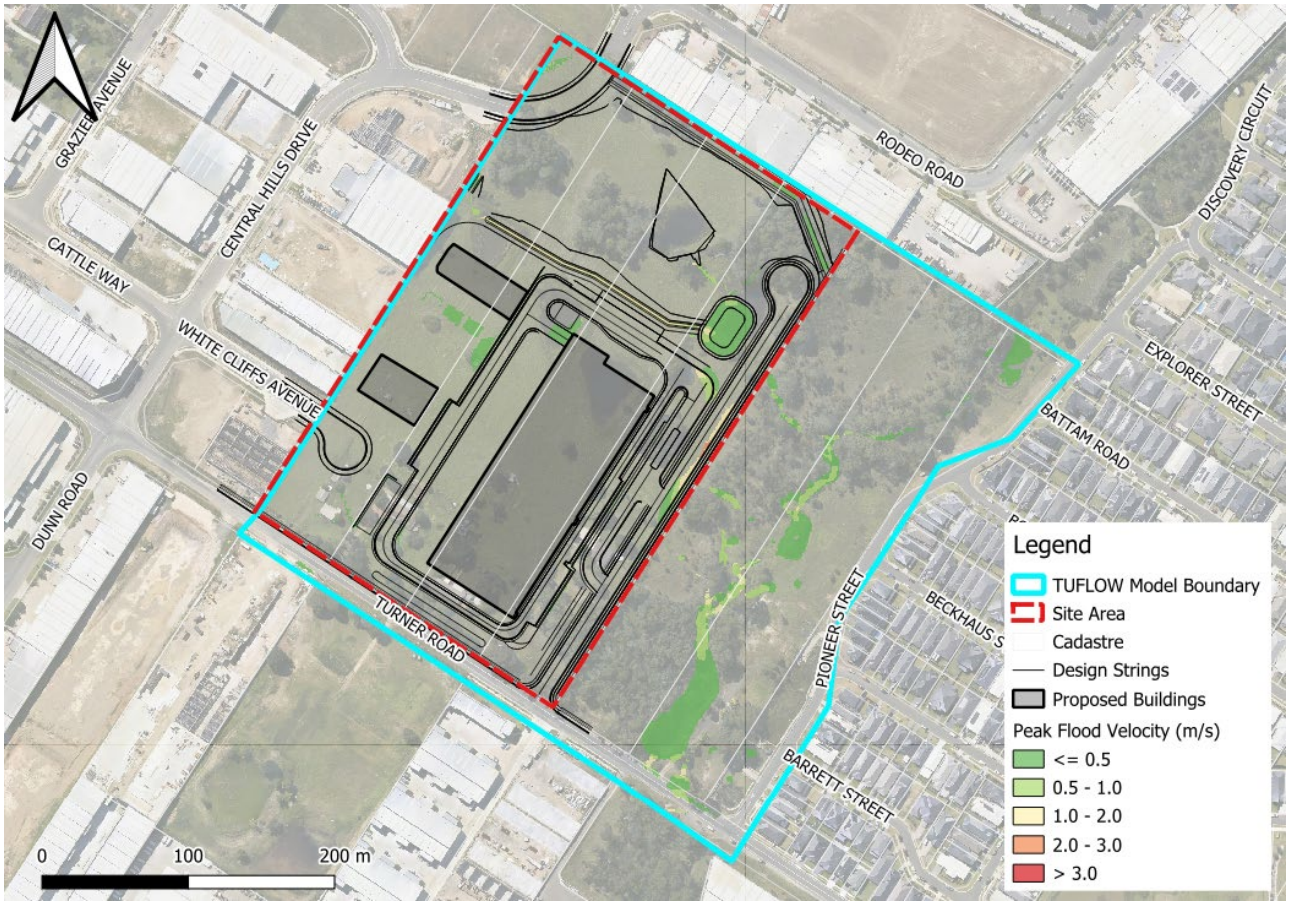


Figure 6-13: Operational peak flood velocity – 1% AEP event

Hazard | The flood hazard during operation is highest within the proposed sedimentation basin, which will be constructed near the eastern Site boundary. Here, the flood hazard reaches a category of H4 (unsafe for vehicles and people. Flood hazard within the remainder of the Site is predicted to not exceed the H2 category, which is safe for people. Refer to Figure 6-14.

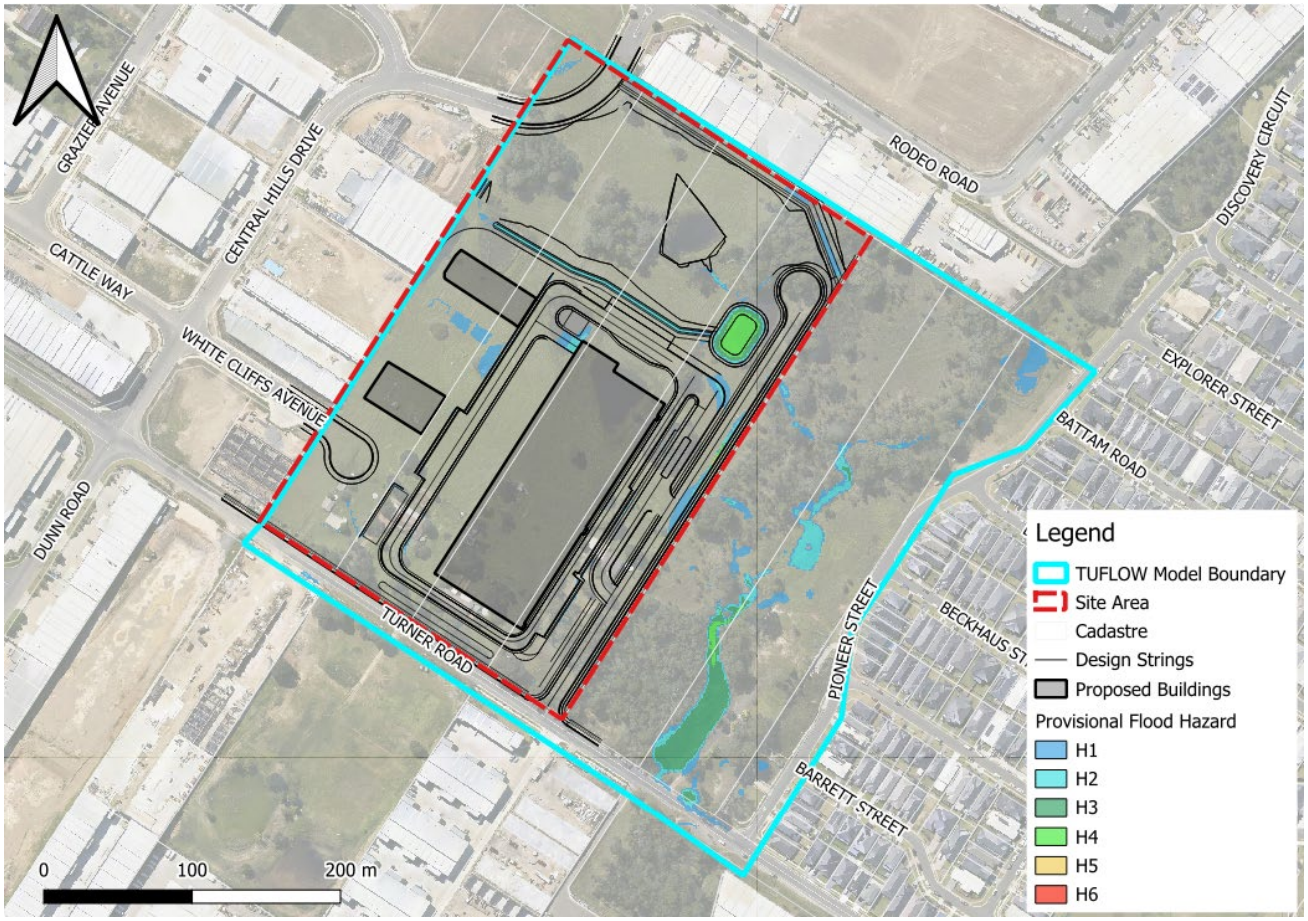


Figure 6-14: Operational provisional flood hazard – 1% AEP event

6.8.4 Mitigation and management

Table 6-24 lists the proposed measures to mitigate and manage impacts to hydrology and flooding. These measures are in addition to those described in Section 6.7.4 to mitigate impacts to water quality.

Table 6-24: Hydrology and flooding mitigation and management

ID	Impacts	Mitigation	Responsibility	Timing
HF01	Flooding during heavy rainfall	Weather reports will be monitored every day. If there is suspected extreme weather (heavy rainfall and wind) the site will be managed and closed, if required. This will involve covering excavations and checking the stormwater management, erosion, and sediment control provisions.	Contractor	Construction
HF02	Flooding during heavy rainfall	The stormwater infrastructure and overland flow routes will be routinely inspected and maintained to avoid any blockages and subsequent flooding.	Contractor	Operation

6.9 Hazards and risk

This section summarises the potential hazards and risks. Appendix P (Resilience and Hazards SEPP screening) and Appendix Q (Bushfire Report) include the supporting technical assessments.

6.9.1 Method

Dangerous goods

The hazards assessment was carried out in accordance with the Resilience and Hazards SEPP, and relevant provisions from the Applying SEPP 33 Guideline (Department of Planning, 2011a). The screening process is used to assess whether a development is 'potentially hazardous' or 'potentially offensive' The thresholds in the Applying SEPP 33 Guideline represent the maximum quantities of dangerous substances that can be transported to and from and stored within the facility without causing a significant risk.

The assessment included in Appendix P (Resilience and Hazards SEPP Screening) identified thresholds, storage quantities and transportation frequencies of the dangerous substances proposed to be stored and transported onsite.

Bushfire

The bushfire risk assessment included in Appendix Q (Bushfire Report) was carried out in accordance with the provisions from Planning for Bush Fire Protection (PBP, NSW RFS, 2019) and assesses the Proposal's vulnerability to bushfire, including an analysis of bushfire hazard, threat and subsequent risk to the Proposal.

6.9.2 Existing environment

The following section describes the hazardous materials that will be stored onsite plus the existing bushfire risk locally.

Hazardous materials

Under the Proposal the following aspects will use or store hazardous materials:

- 27 diesel generators
- Two diesel fire pumps
- 30 diesel tanks
- Li-ion batteries
- Value regulated lead acid batteries
- Pre-action sprinkler system containing liquefied nitrogen gas.

Table 6-25 below details the quantities of hazardous materials that will be stored onsite, and the storage thresholds specified in Applying SEPP 33 and the *Protection of the Environment Operations Act 1997*, noting that not all materials fall under the SEPP screening process. Quantities of nitrogen stores will be confirmed at a later stage; however, they are expected to be well below the POEO Act threshold of 200 tonnes.

Table 6-25: Dangerous good storage quantities and thresholds

Substance	UN Number[1]	Dangerous good class	Approximate quantity	SEPP storage threshold	POEO Act threshold
Lithium-ion batteries	3480/3481	9	• 210 tonnes	N/A	2,000 tonnes
Valve Regulated Lead Acid batteries	2800	8 PGIII	• 12 tonnes	50 tonnes	2,000 tonnes

Substance	UN Number[1]	Dangerous good class	Approximate quantity	SEPP storage threshold	POEO Act threshold
Diesel	1202	Not a dangerous good but it classifies as a combustible liquid	● 529 tonnes	N/A	2,000 tonnes

1 | A UN number is a four-digit number that identifies dangerous goods, hazardous substances, and articles (such as explosives, flammable liquids, toxic substances, etc.) in the framework of international transport.

The SEPP screening also covers the transportation of hazardous substances. The SEPP screening for transportation considers only the VRLA and lithium-ion batteries. During operation, the batteries are not expected to move and expected movements are only relevant to the commissioning stage. Table 6-26 below details the quantities that will be transported during the site commissioning phase over a period of approximately.

Table 6-26: Dangerous good transportation movements and SEPP screening thresholds

Substance	Dangerous good class	Peak weekly movements expected	Weekly movements threshold
Lithium-ion batteries	9	● 5	>60
Valve Regulated Lead Acid batteries	8 PGIII	● 5	>30

The SEPP screening results show that neither the storage nor transportation thresholds are exceeded for the hazardous substances considered for the development, thus the facility is not considered 'potentially hazardous' or 'potentially offensive' in reference to the Resilience and Hazards SEPP. Accordingly, there is no need to carry out a preliminary hazard analysis (PHA), with the measures described in Section 6.9.4 below providing sufficient controls along with design measures, to avoid and minimise any associated hazards and risks.

The storage quantities are also below the thresholds specified in the POEO Act. This means the Proposal is not considered a 'scheduled activity' and an environmental protection licence (EPL) is not required.

Pipelines

There is currently only one major utility pipeline locally, a gas main underneath the adjacent roads, along the southern verge of Turner Road, White Cliffs Avenue and Central Hills Drive, adjacent to the south, east and west of the site boundary, as confirmed through a Before You Dig Australia (BYDA) enquiry. As there are no licenced pipelines that cross the Site, or will be installed as part of the early works, there is no need to consult the operator or carry out a Pipeline Hazard Analysis as required under *Pipelines Act 1967.*

Bushfire

Part of the Site is located within bushfire prone lane as noted on the Camden Bush Fire Prone Land Map (NSW RFS, 2021), with a fire danger index of 100 meaning that a fire in this location will burn so fast and so hot that it will be uncontrollable. Under the early works the proposal would clear the vegetation across much of the Site. While this will remove the fuel load onsite, the same classification will be preserved under the Council's mapping. Accordingly, Appendix Q (Bushfire Report) defined hazards by determining vegetation formations and considering the topography of the Site after the Site is cleared under the early works. Table 6-27 below shows the bushfire hazard that will be present after the early works, which emanates from bushland located to the southeast and southwest, external to the Site boundary.

Table 6-27: Bushfire hazards

Bushfire hazard	Location	Slope	Fire Danger Index
Woodland	Southeast	>0-5°	100
Grassland	Southwest	>0-5°	100

The Proposal classifies as 'non-residential development' under the PBP meaning that it needs to be 16 metres from woodland and 12 metres from grassland to meet the objectives of the PBP, which is effectively protecting buildings and their occupants from exposure to a bushfire by providing sufficient distance between hazards and buildings.

6.9.3 Assessment

The following section identifies hazards and assesses the risk that they pose.

Construction

Dangerous goods

Low volumes of dangerous goods and hazardous materials, such as petrol, lubricants, and paints, would be stored onsite and used during construction. No diesel fuelled generators are proposed for use during construction. The required volumes would be stored in the designated area in the Site compound (more details in Appendix P, Resilience and Hazards SEPP Screening). The volumes of materials stored will be well-below hazardous volumes but may still present a risk to ground and water conditions as described above in Section 6.7. Further, with the adoption of the standard measures set out below in 6.9.4, the potential for spills and leaks can be effectively avoided and minimised.

Bushfire

During construction, the potential impacts from a bushfire can result in damage to structures, equipment and human life. Potential ignition sources include hot works, construction equipment, electrical faults, accidental ignitions and improper storage of dangerous goods. Bushfires spreading through the adjacent vegetation corridor may result in the loss of ecological values.

During construction, there would be sufficient separation distances between the Proposal and the identified woodland and grassland hazards located to the southeast and southwest of the site. Further, a Bushfire Emergency Management and Evacuation Plan will be implemented as part of the CEMP to avoid and minimise potential bushfire risks during construction.

Operation

Dangerous goods

As described above in Section 6.9.2 the quantity of combustible and dangerous goods would be below the thresholds requiring a PHA as well as below the thresholds where an EPL is needed (see Table 6-25 and Table 6-26). Therefore, while there are inherent dangers associated with these materials, the scale of the risk is reduced below levels that would classify the Site as a potentially hazardous industry. The inherent dangers are listed below:

- *Batteries* | Batteries present the risk of fires and thermal runaway chain reactions (i.e., an uncontrollable rapid increase in temperature). As a result, batteries would be stored in fire-resistant rooms that includes adequate ventilation, smoke detection, and sprinklers. There will be no heat sources in the vicinity of the batteries.

- *Diesel* | There are potential risks for fire and explosions. For this reason, the diesel would be stored in an intrinsically safe way consistent with AS1940:2017 – The Storage and Handling of Flammable and Combustible Liquids (Standards Australia, 2017).
- *Nitrogen* | There is an asphyxiate risk with nitrogen in high concentrations. For this reason, the exhaust location will be of sufficient distance from where personnel have access and of sufficient height to provide effective dispersion of gas.

Operational activities | There will be a limited use of other harmful materials onsite, namely small quantities of diesel, petrol, lubricants, and paints to service and maintain the facility, which present an intrinsic spill risk when in use. While any spilt volumes would present a low risk to the receiving environment, they would still be managed and controlled to ensure impacts are avoided and minimised as described below in 6.9.4.

Beyond this, the key risk would be the hazard of refilling the diesel tanks, which would occur once every six months based on the test schedule described in Section 3.7.1.

While there is an inherent risk of equipment failure during the refuelling or maintenance, this will be minimised through routine inspections to make sure that such activities take place in an intrinsically safe manner by trained, licenced and experienced people.

Bushfire

During operation, the potential impacts from a bushfire are similar to those during construction. It can result in damage to buildings, equipment and human life. During operation, this can also indirectly lead to IT cloud infrastructure disruptions for essential services. Bushfires spreading through the adjacent vegetation corridor may result in the loss of ecological values and the deterioration air quality from smoke. Potential ignition sources during operation include hot works during maintenance activities, electrical faults, accidental ignitions and improper storage of dangerous goods.

The Proposal demonstrates compliance with PBP (2019) where there would be sufficient defendable space around buildings and separation distances between buildings and the identified bushfire hazards (refer to Table 6-28 below). This area of defendable space is referred to as the Asset Protection Zone. Additionally firefighting requirements including emergency access, egress, evacuation and water utility services are provided for. This reduces the potential for bushfires and would minimise the risk of a bushfire impacting the Proposal and surrounding areas. Therefore, it is unlikely that the Proposal would significantly increase the likelihood of bushfires to surrounding areas.

Table 6-28: Minimum separation distances from bushfire hazards

Bushfire hazard	Location	Minimum separation distance (m)	Separation distance from the Proposal (m)
Woodland	Southeast	16	28
Grassland	Southwest	12	49

Electromagnetic fields

As described in Section 3.3.2, the Proposal includes a high-voltage substation incorporating 132/22 kilovolt (kV) transformers and associated switching and control buildings, which will be installed on the western side of the Site. The design and operation of the Proposal's power supply would be carried out in accordance with standard industry guidelines and codes of practice such that conductive and semi-conductive materials effectively shield electrical fields. The separation distance would be maximised between the substation and public areas to minimise the potential to alter EMF strength within the surrounding area.

The Proposal would be designed to comply with appropriate Australian and international standards to minimise the risk associated with EMF exposure. EMF is therefore not expected to pose a significant risk to public or worker safety.

6.9.4 Mitigation and management

Table 6-29 lists the proposed measures to mitigate and manage hazards and risks.

Table 6-29: Hazards and risk mitigation and management

ID	Impacts	Mitigation	Responsibility	Timing
HR01	Risks of fire damage to surrounding receivers and environments	A **Fire Safety Study** will be prepared one month before construction starts. It will be prepared in consultation with Fire and Rescue NSW. The Study will include details on: • The final back-up power system and diesel storage quantities • Aspects of Hazardous Industry Planning Advisory Paper No.2. Fire Safety Study (Department of Planning, 2011b) • Best Practice Guidelines for Contaminated Water Retention and Treatment Systems (NSW Government, 1994).	Proponent	Detailed design
HR02	Risk of bushfire	An Asset Protection Zone will be maintained in all directions from the building, in accordance with the PBP 2019 Appendix 4.	Proponent/ contractor	Construction/ operation
HR03	Risk of spread of hazardous materials to surrounding areas and environments	Hazardous materials will be removed and disposed of in accordance with the relevant legislation, codes of practice, Australian Standards, and the Work Health and Safety Regulation 2017.	Proponent/ contractor	Construction / operation
HR04	Risk of fire and mishandling hazardous substances	All hazardous substances will be stored and managed in accordance with relevant Australian Standards, and in particular, AS1940:2017 – The Storage and Handling of Flammable and Combustible Liquids (Standards Australia, 2017), the Hazardous and Offensive Development Application Guidelines - Applying SEPP 33 (Department of Planning, 2011a), Storing and Handling Liquids – Environmental Protection – Participant's Manual (DECC, 2007), the Work Health and Safety Regulation 2017, and the *Environmentally Hazardous Chemicals Act 1985*.	Proponent/ contractor	Construction / operation
HR05	Risk of emergencies	A **Hazard Management Plan** will be prepared and implemented to manage impacts from hazardous materials during construction and operation.	Proponent/ contractor	Construction / operation
HR06	Risk of bushfire	A Bushfire Emergency Management and Evacuation Plan will be prepared and provided to Fire and Rescue NSW.	Proponent/ contractor	Construction / operation
HR07	Risk of fines due to exceedances	Dangerous good quantities will remain below the thresholds listed in the Hazardous and Offensive Development Application Guidelines – Applying SEPP33 (Department of Planning, 2011)	Proponent/ contractor	Operation
HR08	Risk of mishandling	The following measures will be included onsite as per the Work Health and Safety Regulation: • Placards will be displayed – Outer warning placards regarding quantities of diesel stored will be displayed at all emergency service entrance points – Placards will be displayed on or near the diesel belly Proponent/ contractor tanks	Proponent/ contractor	Operation

ID	Impacts	Mitigation	Responsibility	Timing
		– Placards will be clearly legible and separate from other signs and otherwise compliant with Schedule 13 • A manifest of all Schedule 11 chemicals, including diesel storage will be prepared • SafeWork NSW will be notified of diesel storage exceeds the manifest quantities		
HR09	Risk of spread of fire to, and from, surrounding areas	Minimum separation distances will be maintained, and landscaping areas will be regularly maintained including trimming encroaching tree branches that pose a fire safety risk. The risk of bushfire has also been considered in the Landscape Plan. For example, no shrubs are proposed under the tree canopy, per the bushfire requirements.	Proponent/ contractor	Operation

6.10 Waste management

This section summarises the potential waste impacts. Appendix R (Waste Management Plan) includes the supporting technical assessment.

6.10.1 Method

A Waste Management Plan was prepared to address the Secretary's Environmental Assessment Requirements (SEARs). The Plan:

- Includes estimates of construction and operational waste volumes
- Identifies the expected classifications of waste generated from construction and operation activities in accordance with the NSW EPA Waste Classification Guidelines (EPA, 2014)
- Establishes methods for transport and disposal, including those wastes that pose hazardous characteristics, so that any waste leaving the Site is transported and disposed of lawfully and does not pose a risk to human health or the environment
- Identifies reuse/recycling opportunities to manage excess construction materials generated during the construction phase and steps taken to reduce waste brought to the Site
- Identifies the Resource Recovery Orders and Exemptions requirements applicable to the waste onsite.

6.10.2 Existing environment

There are several waste disposal facilities locally where materials could be recovered, recycled, or disposed of. These facilities are licenced to receive and accordingly recover or dispose of general solid (putrescible/non-putrescible) waste. There are also facilities and contractors in Sydney that can handle special, hazardous, and restricted solid waste, in the rare event that these materials would be generated onsite. Waste management contracts would only be confirmed pre-construction and pre-operation. There is sufficient capacity in Sydney's waste infrastructure to transport and receive the Site-generated materials without compromising capacities or operations or impacting other projects in the area.

6.10.3 Assessment

The following section assesses the impacts of the generated wastes.

Construction

Anticipated construction waste types, volumes (if known) and classification under the NSW Waste Classification Guidelines are provided in Table 6-30 below.

Table 6-30: Construction waste streams and classification

Waste stream	Source	Estimated quantities	Expected waste classification under NSW Waste Classification Guidelines
Excavated Soil Soil, sand, and rubble fines	Excavation of Site works	4,350m^3	General solid waste (non-putrescible) – pre-classified.
Green waste Trees, shrubs and weeds	Vegetation removed from cleared land	Not quantified	General solid waste (non-putrescible) – pre-classified.
General construction waste Concrete, timber, plastic wrapping and strapping, packaging, cardboard & paper, landfill, bricks & tiles, Plasterboard	Offcuts, excess material, packaging	Not quantified	General solid waste (non-putrescible) – pre-classified.
Septic waste	Toilets for site workers	Not quantified	Liquid waste.
Scrap metals	Offcuts, damaged items	Not quantified	General solid waste (non-putrescible) – pre-classified.
Hazardous waste Paints, solvents, waste oils, chemicals, and related packaging.	Building fit-out and ongoing maintenance during operations	Not quantified, as generation will be linked to ad hoc site activities and maintenance rather than regular procedures.	Empty containers which held these liquid waste products: general solid waste (non-putrescible)– pre-classified. General solid waste (non-putrescible)– pre-classified.

Materials will be removed from the Site by appropriately licensed contractors and recovered, reused, recycled, or disposed of at appropriately licensed facilities in accordance with the NSW Waste Classification Guidelines and the waste hierarchy.

Wastewater from Site amenities during construction would either be removed by a licenced contractor or discharged to the Sydney Water sewer network.

Operation

Anticipated operational waste types, volumes (if known) and classification under the NSW Waste Classification Guidelines are provided in Table 6-31 below.

Table 6-31: Operational waste streams and classification

Waste stream	Source	Estimated quantities	Expected waste classification under NSW Waste Classification Guidelines
General residual waste	Site offices and administration areas and amenities	1,922 L/week	General solid waste (non-putrescible) – pre-classified.
Food and garden organics	Site office, workers lunch area	959 L/week	General solid waste (non-putrescible) – pre-classified.
Mixed recycling	Site offices and administration areas, workers lunch areas	72 L /week	General solid waste (non-putrescible) – pre-classified.
Paper and cardboard	Site offices and administration areas, packaging.	1,850 L/week	General solid waste (non-putrescible) – pre-classified.
E-waste	Site office and data halls	Not quantified, however the Proposal is likely to generate e-waste in the form of server racks and associated data storage equipment reaching the end of their service life. For this reason, a waste collection and recycling contract will be established to collect all e-waste for refurbishment, reuse or recycling and ensure it is not disposed of to landfill.	No classification within the NSW Waste Classification Guidelines as this waste should not be disposed to landfill.
Hazardous waste **Paints, solvents, waste oils, chemicals, and related packaging.**	Building fit-out and ongoing maintenance during operations	Not quantified, as generation will be linked to ad hoc site activities and maintenance rather than regular procedures.	Empty containers which held these liquid waste products: general solid waste (non-putrescible)– pre-classified. General solid waste (non-putrescible)– pre-classified.
Green waste	Maintenance of the outdoor green spaces	Not quantified, as generation will be linked to the flora species chosen during detailed design.	General solid waste (non-putrescible) – pre-classified
Septic waste	Toilets for workers	Not quantified	Liquid waste

Materials will be removed from the Site by appropriately licensed contractors and recovered, reused, recycled, or disposed of at appropriately licensed facilities in accordance with the NSW Waste Classification Guidelines and the waste hierarchy.

Wastewater from Site amenities during operation would either be discharged to the Sydney Water sewer network.

Impact assessment

Waste generated during both construction and operation has the potential to cause the following impacts if mishandled or inadequately stored:

- Pollute land or waterways including groundwater through accidental escape of waste or runoff, and through disposal of waste to an inappropriate site
- Harm to wildlife through accidental escape of waste or runoff
- Loss of amenity to neighbouring properties through accidental escape of waste or runoff
- Health risks arising from handling or contact with contaminated soil and hazardous waste materials
- Spread of weeds, pests or pathogens within recovered waste materials
- Waste recyclable resources through unnecessary disposal to landfill
- Loss of amenity for workers, or neighbours due to odour and vermin.

In all cases, there are effective standardised measures to avoid and manage the above impacts. These would be implemented and monitored onsite as described below in Section 6.10.4.

6.10.4 Mitigation and management

This section describes the proposed waste management and mitigation measures. They supplement the waste related ESD measures and initiatives in section 6.3.

Waste Management and Resource Recovery Plans

The Proposal will operate under separate construction and operational waste management and resource recovery plans. Both will account for the waste volumes and types generated onsite. Both plans will focus on the circular economy and waste hierarchy. They will also identify the relevant resource recovery orders available to reuse material.

Mitigation and management matters

Table 6-32 lists the proposed measures to mitigate and manage waste-related impacts.

Table 6-32: Summary of potential impacts and proposed mitigations for construction and operational waste

ID	Impacts	Mitigation	Responsibility	Timing
W01	Waste of recyclable resources during construction through unnecessary disposal to landfill.	Waste will be managed in line with the waste hierarchy. A Construction Waste Management Plan (CWMP) will be prepared and meet the requirements outlined in Camden Council's Waste Management Guidelines (Camden Council, 2019a). It will include final provisions for segregation and separate collection of recoverable materials, including green waste, excavated natural materials and metals.	Contractor	Construction
W02	Pollution of land or waterways including groundwater through accidental escape of waste or runoff.	The CWMP will include: • Measures for containment of waste during storage and transport, such as covering, fencing and bunding. • Requirement that all waste be delivered to an appropriately licensed facility for	Contractor	Construction

ID	Impacts	Mitigation	Responsibility	Timing
		recovery or disposal. Receipts for all disposed materials must be kept and made available for inspection by regulatory authorities.		
W03	Spread of weeds, pests or pathogens within recovered waste materials.	The CWMP will outline appropriate control and disposal options of any high threat weeds identified on the Site.	Contractor	Construction
W05	Loss of amenity for workers, or neighbours due to odour and vermin. Escape of litter causing: • Pollution of land and waterways • Harm to wildlife • Loss of amenity to neighbouring properties.	An Operational Waste Management Plan (OWMP) will be developed during detailed design for the adequate provision for storage and collection of waste. The OWMP will meet the requirements outlined in Camden Council's Waste Management Guidelines (Camden Council, 2019a).	Proponent	Operation
W04	Waste of recyclable resources during operation through unnecessary disposal to landfill.	Waste will be managed in line with the waste hierarchy. The OWMP will include provision for source separation systems for recyclable materials, including, paper and card, mixed recyclables, e-waste, and hazardous waste.	Proponent	Operation
W06	Pollution of land or waterways during operation through disposal of waste to an inappropriate Site.	The OWMP will include a requirement that all waste be delivered to an appropriately licensed facility for recovery or disposal.	Proponent	Operation

6.11 Aboriginal cultural heritage

This section summarises the potential Aboriginal cultural heritage impacts for the Proposal. Appendix S (Aboriginal Cultural Heritage Assessment Report) includes the supporting technical assessment.

6.11.1 Method

The Aboriginal Cultural Heritage Assessment Report (ACHAR) involved:

- A review of existing knowledge and the landscape context consisting of a desktop-based assessment and search of the Aboriginal Heritage Information Management System (AHIMS) database
- Development of a predictive model to determine the archaeological potential of the Proposal area
- Assessment of the likely impacts to Aboriginal objects and Potential Archaeological Deposits (PADs) during construction and operation
- Identification of mitigation measures.

The above process was carried out in accordance with:

- Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales 2010 (DCCEEW, 2010b)
- Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (Office of Environment and Heritage, Department of Premier and Cabinet, 2011)
- Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW, 2010a)
- The Burra Charter 2013 (Australia ICOMOS 2013).

6.11.2 Existing environment

This section summarises the existing Aboriginal cultural heritage conditions for the area surrounding the Proposal.

History

Aboriginal peoples have lived in the Sydney Basin and surrounding areas for at least 30,000 years. The archaeological material record provides evidence of this long occupation, as well as evidence of a dynamic culture that has changed through time. The existing archaeological record is limited to certain materials and objects that were able to withstand degradation and decay from, for example, air, humidity, water and light. As a result, the most common type of Aboriginal objects remaining in the archaeological record are stone artefacts. Due to the presence of Aboriginal peoples in Sydney over thousands of years, there is potential for objects to occur across the landscape, including within the Proposal area.

Consultation

A total of 30 Aboriginal stakeholders registered to comment on the heritage assessment method and outcomes. Six Registered Aboriginal Parties (RAPs) provided comments on the assessment method, five of which were supportive, and one stated there was insufficient information to make an informed recommendation. Detailed consultation outcomes can be found in Appendix S (Aboriginal Cultural Heritage Assessment Report).

Consultation with the RAPs on the outcomes of the ACHAR is ongoing. As detailed in Chapter 5, matters raised during the EIS exhibition will be responded to in a Response to Submissions report post EIS exhibition. This report will detail any comments provided by the RAPs during this time.

Listed Aboriginal heritage

An extensive search of the AHIMS database was carried out on 7 March 2024. An area of about a two-kilometre radius around the Proposal area was included in the search. 11 AHIMS sites were found to be registered in the search area, one of which, AHIMS site ID 52-2-3557, is within the Proposal area. AHIMS site ID 52-2-3557 is recorded as an open artefact scatter.

Predictive model

A predictive model was used to predict the archaeological potential of the land within the Proposal area. The model comprised a series of statements about the nature and distribution of evidence of Aboriginal land use that is expected in the area. The statement acts to define archaeological potential and sensitivity. The survivability of Aboriginal objects largely depends on the extent and nature of subsequent historical construction activities based on various natural landscape, landform and natural features, contextual history, and evidence of historical disturbance, along with the results of previous archaeological survey and assessment work. In the context of the Proposal:

- The proximity to watercourses, for example the tributary to Kenny Creek about 60 metres to the east of the Site, increases archaeological potential
- Historical disturbance, for example due to the construction of structures and dams as part of the previous agricultural land use, decreases archaeological potential

- The most recent archaeological investigations carried out in the Proposal area found no Aboriginal objects on site, which decreases archaeological potential.

Based on the above reasoning, the eastern portion of the Proposal area is the most likely to contain relatively low-density clusters of Aboriginal artefacts due to its proximity to the tributary of Kenny Creek, while for the remainder of the Proposal area it is unlikely that Aboriginal objects will occur.

Site investigations

Previous site investigations confirmed the presence and location of AHIMS site ID 52-5-3557, however no Aboriginal objects were identified during more recent test excavations.

Further investigation into the matter found that the artefacts comprising AHIMS site ID 52-2-3557 had been collected and removed from the Site at some point between the investigations. Therefore, there is thought to be no Aboriginal objects remaining on the current site.

Assessing significance

The cultural heritage significance of an item or place forms the basis of its management. An assessment of significance is made in relation to four vales or criteria: sociocultural, historic, scientific and aesthetic, a combination of which allow for an overarching statement of significance. Detail on each criterion and the significance assessment made for each is provided in Appendix S (Aboriginal Cultural Heritage Assessment Report).

While consultation with the RAPs is ongoing, no socio-cultural, historic, scientific or aesthetic values have been identified within the Proposal area at this stage, further impacted by the removal of the one artefact onsite.

6.11.3 Assessment

The artefacts comprising AHIMS site ID 52-2-3557 were confirmed to have been removed from the Site, and the Site contains relatively low archaeological potential based on the predictive model. Further, under the early works planned for the Site (see Section 1.4), the Site would be cleared and earthworks would be carried out to prepare the Site for construction of the Proposal, effectively reducing archaeological potential to nil. As a result, no impacts to Aboriginal heritage are anticipated during construction and operation of the Proposal.

6.11.4 Mitigation measures

Table 6-33 lists the proposed measures to mitigate and manage potential Aboriginal cultural heritage impacts.

Table 6-33: Air quality mitigation and management measures

ID	Impact	Mitigation	Responsibility	Timing
AH01	Overall Aboriginal heritage impact	An Aboriginal Heritage Management Plan will be prepared for the Proposal which will include: • An Unexpected Finds Procedure • Heritage induction • Procedures for ongoing consultation.	Proponent	Detailed design

6.12 Social impacts

This section addresses the potential social impacts associated with the Proposal. Appendix T (Social Impact Assessment Report) includes the supporting technical assessment.

6.12.1 Method

The social impact assessment (SIA) presented in Appendix T (Social Impact Assessment Report) was prepared in accordance with the Social Impact Assessment Guideline for State Significant Projects (DPE, 2023). The impacts were assessed against the eight key themes noted within the guideline and rated from low to very high using a matrix of magnitude (scale of impact) and likelihood (of occurrence). Overall, the assessment:

- Defined the study area
- Reviewed relevant policies, guidelines, and plans
- Reviewed and analysed the community profile using Australian Bureau of Statistics (ABS) 2021 Census data
- Identified social infrastructure within 800 metres of the Site
- Identified and analysed potential impact to way of life, community, accessibility, culture, health and wellbeing, surroundings, livelihoods, and decision-making systems (i.e. governance)
- Identified relevant management measures to avoid and/or minimise negative impacts and maximise positive impacts.

The study area for the SIA, which is called the social locality, was selected factoring in both local social and economic impacts and those likely to occur on a broader scale resulting in two areas:

- *Immediate Social Locality (ISL)* | The local community, businesses and residential properties within 400 metres of the Site, representing the immediate impact area
- *Secondary Social Locality (SSL)* | The community and businesses within the broader area of the Proposal. The SSA includes the suburbs within the Camden LGA.

6.12.2 Existing environment

The Site is located within an industrial precinct but is also surrounded by commercial, residential and recreational land. The key community profile attributes within the ISL and SSL include the following:

- **A rapidly growing population** | The population within Camden where the ISL is located, is a significant growth area of Sydney and is expected to experience substantial population growth by 2041 (over 83% growth between 2021 and 2041).
- **Dominance of family households** | Both the ISL and SSL have a high proportion of people aged 25-34 years old and children aged 0-9 years old. There is a corresponding lower rate of lone person households or group households within the ISL and SSL compared to Greater Sydney.
- **Dominance of detached dwellings** | The majority of dwellings within the ISL and SSL are separate houses (98% and 94% respectively). This is much higher compared to the rest of Greater Sydney at 54% indicating a lower level of housing density and diversity.
- **Employment and economy** | Professionals are the most common occupation within the ISL and SSL. Labourers are the least common occupation within the ISL and SSL. The most dominant industries of employment of residents within the ISL are Health Care and Social Assistance and Retail Trade (13.9% of the workforce for both). A comparatively high proportion of people are

employed in the construction industry within the ISL and SSL who could benefit from the construction phase of the Proposal. The ISL and SSL also have a high number of Machinery Operators and Drivers and Labourers compared to Greater Sydney. A low proportion of people are employed in Information, Media and Telecommunications or Professional, Scientific and Technical Services industries jobs required to accommodate operation-based employment for the Proposal.

- **Relatively high levels of social advantage** | The site is generally located within an area that is noted to have relatively high socio-economic advantage according to the Socio-Economic Indexes for Areas (SEIFA).
- **Nearby social infrastructure** | As the Site is located within an industrial area it has limited surrounding social infrastructure within walking distance (around 800 metres). Infrastructure within 800m includes bus stops, sporting clubs, a playground, areas of open space, and several food and drink facilities. Nearby social infrastructure is shown in Figure 6-15.

Based on the local context and community profile, the following individuals and communities are likely to be impacted by the Proposal:

- Gregory Hills residents
- Commercial and industrial tenants immediately surrounding the site within the Smeaton Grange and Turner Road Industrial Precincts
- Future workers onsite.
- Local Aboriginal community
- Users of the nearby recreation areas (i.e. the adjacent riparian area) and Healy Reserve in Gregory Hills
- Visitors to the area and customers of the nearby commercial and industrial businesses
- The wider LGA residents.

Legend

- Health Facility
- Place of Worship
- Community Facility
- Playground
- Education Facility
- Food and Drink
- Sports Club
- Bus Stop
- Open Space
- Site Boundary
- 800m Boundary
- 200m Boundary

Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere

0 75 150 300 Metres

ARUP

151 Clarence Street
Sydney NSW 2000
Tel +61 2 9320 9320
www.arup.com

Client
Confidential

Project Name
43-61 Turner Road Data Centre

Drawing Title
Existing Social Infrastructure

Scale at A4
1:12,517

Project Number
299816-00

Figure No.
6-15

Rev	Date	By	Chkd	Appd	Authd
B	27/09/2024	GL	CS	CS	-

6.12.3 Assessment

This section describes the potential social impacts from the Proposal.

Construction

Table 6-34 below summarises the potential social impacts associated with the construction phase.

Table 6-34: Summary of potential social impacts during construction

Category	Impact	Social Significance Rating
Way of life – Changes in amenity	During construction, noise and air impacts (as described in Sections 6.5 and 6.6, respectively) have the potential to impact amenity levels which may change the way people live, work and play in order to avoid these negative impacts such as staying indoors more than they ordinarily would. However, given the temporary nature of the works that would generate noise and dust, the impact on amenity is expected to be low and manageable following the implementation of mitigation measures described in Section 6.12.4.	● Medium (negative)
Community – Visual amenity and sense of place	Visual impacts during construction, as described in Section 6.1, may affect a person's sense of place. However, this would be temporary and the sensitivity of the viewpoints towards the site are typically considered to be low (refer to Section 6.1).	● Medium (negative)
Accessibility - Transport	Traffic and transport impacts, as described in Section 6.2, may disrupt the way people live, work and interact by altering how they get to and access their home, place of work and or surrounding recreational and community spaces. However, surrounding major intersections are still expected to operate within current capacity.	● Medium (negative)
Accessibility – Utilities	During later construction stages when the site is connected to utility services, there is the potential for disruption to these utilities for surrounding residents and businesses. However, these can be managed through standard management measures and is therefore unlikely. It is therefore considered unlikely that the Proposal would disrupt utilities services for surrounding businesses and residents within the ISL.	● Low (negative)
Accessibility - Access and use of infrastructure	Not applicable	Not applicable
Culture – Cultural heritage values	As noted in Appendix S of the EIS: Aboriginal Cultural Heritage Assessment Report (ACHAR), no Aboriginal objects or Sites that could potentially be harmed during construction were identified within the Site. Furthermore, while the landscape and environment of NSW as a whole is significant to Aboriginal people, no specific Aboriginal heritage values were identified during the consultation process with RAPs for the site itself. It is therefore unlikely that the Proposal would impact Aboriginal cultural heritage values. In addition, given the distance of non-Aboriginal heritage items from the Site, impact to heritage values held by the local community is not expected as a result of construction of the Proposal.	● Neutral
Health, wellbeing and safety	Indirect impacts, such as on health and mental wellbeing, may also be experienced as a result of reduced amenity (e.g. sleep disturbance, respiration issues, stress, etc.) however, this is considered unlikely if managed appropriately. Although there is a risk of bushfire (refer to Section 6.9), the Proposal satisfies the aims and objectives of Planning for Bush Fire Protection (NSW RFS, 2019), subject to the implementation of its identified recommendations which reduces this risk.	● Medium (negative)

Category	Impact	Social Significance Rating
	Dangerous goods and hazardous materials present on site (refer to Section 6.9) could pose a risk to construction staff, visitors, and nearby residents/workers if not managed appropriately and could potentially contaminate ground and water conditions. Construction activities have the potential to alter overland flows which could lead to some safety risks to construction staff if flows are directed into open excavation areas and not managed appropriately.	
Livelihood – Improved local employment and flow-on economic benefits	The Proposal is expected to generate 100 jobs during construction. The Proposal would support additional jobs through construction and operation consistent with this objective. Noting the relatively high proportion of people employed in construction in the ISL and SSL, these jobs could potentially be serviced by the local community where possible, aligned with the availability of the local labour force and consistent with the strategic objectives the Greater Sydney Region Plan (Greater Sydney Commission, 2018a). Construction of the Proposal would therefore provide these residents with temporary employment opportunities and contribute to their livelihoods. The Proposal is unlikely to put strain on the existing local workforce availability given the high number of people employed within the Construction and Manufacturing industries in the ISL and SSL compared to the rest of Greater Sydney. The ISL and SSL also have a high number of Machinery Operators and Drivers and Labourers compared to Greater Sydney. The Proposal may also have flow-on economic benefits for the local community during construction through the need to access materials, equipment and related services. Construction staff may also provide economic benefits to surrounding businesses through the purchase of food, beverage and recreation services.	• Moderate (positive)
Decision making systems	Ongoing consultation through the construction phase would be maintained by the relevant contractor as part of the CEMP. This consultation would also include specific notification processes for potential impacts (e.g. noise generating activities) as well as a complains handling process.	• Low (positive)

Operation

Table 6-35 below summarises the potential social impacts associated with the operation phase.

Table 6-35: Summary of potential social impacts during operation

Category	Impact	Social Significance Rating
Way of life – Changes in amenity	Once operational, noise and vibration levels would be below the recommended levels for an industrial area (refer to Section 6.6). Potential exceedances of air quality criteria are expected to be extremely rare and temporary in nature (refer to Section 6.5). Potential impacts to amenity from noise and air quality impacts during operation are therefore expected to be low.	● Low (negative)
Community – Visual amenity and sense of place	As described in Section 6.1, while the Proposal will be consistent with the surrounding industrial character, it will still form a new industrial element within the view of some sensitive receivers located at higher elevations. Potential impacts to amenity from visual impacts during operation are therefore expected to be high.	● High (negative)
Accessibility - Transport	As described in Section 6.2, during operation, surrounding major intersections are still expected to operate within current capacity. The Proposal is not expected to disrupt the way people live, work and interact by altering how they get to and access their home, place of work and or surrounding recreational and community spaces. Maps and timetables of public transport links along with end of trip facilities would be provided to staff once operational to help encourage their use. These maps would only be available within the building and not made publicly available however, to protect staff and security.	● Low (negative)
Accessibility – Utilities	It is understood that the Proposal would place a high demand on electrical, water, sewer and telecommunication services once operational, which may reduce access for communities in the social localities (refer to Section 6.13). These increased demands, if not managed appropriately could cause disruption to the ability to access necessary utility services.	● Medium (negative)
Accessibility - Access and use of infrastructure	Data centres are a critical piece of infrastructure that supports the way of life and many job types in the current landscape of Greater Sydney. This Proposal would help support the strategic vision for the local area such as improved resilience and the move towards a more digital economy in NSW. This would also help support the local economy through the provision of this key piece of infrastructure in the Western Parkland City. The location of a data centre in the area would provide data storage services that can support the businesses and communities in the wider region through improved reliability of access to digital technology given the growing demand for data storage and internet usage across the region.	● High (positive)
Culture – Cultural heritage values	Given the distance of non-Aboriginal heritage items from the Site and lack of Aboriginal objects, Sites or areas of cultural significance, impact to heritage values held by the local community is not expected once the Proposal is operational.	● Neutral
Health, wellbeing and safety	Once operational, the Proposal would require hazardous materials to be stored on site Section 6.9. These materials present a hazard such as fire and explosion risk if not manage appropriately. The Proposal would also operate 24/7 once operational which may pose a security risk to staff working the night shift. However, the site would be located behind security fencing, only allowing approved personnel and vehicles access to the site as well as security lighting to help prevent crime and promote staff safety.	● Medium (negative)
Livelihood – Improved local employment and flow-on economic benefits	The Proposal is expected to generate around 50 jobs during operation. These would be skilled technical service jobs and would offer diverse employment opportunities for residents with the ISL and SSL, consistent with the strategic objectives of the Greater Sydney Region Plan 2018. The types of operational jobs required for this Proposal may therefore not be able to be fully serviced from the surrounding resident labour force. As noted in Section 6.12.2, there is a lower proportion of residents within the ISL and SSL that are employed in the Information Media and Telecommunications industry compared to the rest of Greater Sydney. This Proposal may therefore attract people within this industry to move to this location once it is operational, supporting access to a diversity of jobs in the social localities.	● Moderate (positive)

Category	Impact	Social Significance Rating
	There is also wider indirect supply chain impacts associated with this Proposal and in combination with other data centre projects in Western Sydney, including the development of supporting industries and manufacturing to accommodate ongoing needs.	
Decision making systems	The community can review and provide feedback on the Proposal as part of the EIS process, allowing them the opportunity to provide input to the Proposal for consideration as part of the refined design, as well as make long-term decisions around the proposed future use of the site.	• Low (positive)

6.12.4 Mitigation and management

Table 6-36 below outlines the proposed measures to mitigate and manage potential social impacts.

Table 6-36: Social mitigation and management measures

ID	Impacts	Mitigation	Responsibility	Timing
SIA1	Impact to amenity, access and human health and wellbeing	It is recommended that a Communication Plan (CP) be prepared and implemented as part of the Construction Environment Management Plan (CEMP) to provide timely and accurate information to the community during construction. The CP would need to include (as a minimum): • Mechanisms to provide details and timing of proposed activities to affected residents, including changed traffic and access conditions • Contact name and number for complaints • Details of public consultation.	Proponent / Contractor	Detailed design / Pre-construction
SIA2	Impact to health, wellbeing and safety	It is recommended that opportunities to incorporate Crime Prevention Through Environmental Design (CPTED) principles into the design of the Proposal are investigated to improve overall security of the precinct. This should include safety and security measures for staff working at night and on weekends are put in place to protect operation workers given the nature of the Proposal as a 24/7 facility. In addition, the preparation of an emergency and disaster response plan that considers community health and impacts relating to environmental risks associated with the site will help to mitigate detrimental impacts during disaster events (e.g. bushfire).	Proponent	Detailed design / operation
SIA3	Impact to cultural heritage	It is recommended that consultation and collaboration is carried out with the local Aboriginal stakeholders to incorporate elements of Country into the design (e.g. use of native planting and language names) to help improve sense of place and connection to Country for local Aboriginal peoples.	Proponent	Detailed design
SIA4	Impact to visual amenity	Landscaping on the site will be provided in accordance with the Landscape Plan in Appendix E. Extensive landscaping has been incorporated into the Plan, using indigenous planting to better integrate the development into the surrounding character and existing vegetation of the adjacent RE1 land. The Plan proposes a mixture of large and medium evergreen indigenous and native trees, shrubs and groundcovers. Following maturity this will provide softening and screening of the substation, generator halls and main data hall and will increase visual amenity when looking towards the Site.	Proponent	Operation
SIA5	Impact to local employment and flow-on economic benefits	It is recommended that a social procurement policy is prepared for this Proposal to outline targets and processes for jobs, materials and services to be serviced by the local community (i.e. the ISL and SSL) where possible in the first instance. This would help to boost the local economy and drive economic development of Western Sydney. This plan should also identify training opportunities for new jobs and associated new skills as well as Indigenous engagement part of the procurement process for job opportunities.	Proponent	Construction / Operation

6.13 Infrastructure requirements and utilities

This section addresses the need for any potential onsite infrastructure and utility upgrades to facilitate the Proposal, as well as any potential impacts of the Proposal on existing utility infrastructure and assets. A technical study has been undertaken and is provided in Appendix U (Infrastructure and Services Report)

6.13.1 Method

A desk-based review of available data, including a Before You Dig Australia (BYDA) search and information request to Camden Council, has been conducted to characterise the baseline environmental conditions with respect to above and below-ground utilities and service provider assets.

Potential impacts of the Proposal on the utilities and service provider assets identified during characterisation of the baseline environment have been assessed, as follows:

- Compare the general arrangement of the Proposal against existing public utility infrastructure within the Site and identify any conflicts and/or interactions.
- Identify any protection or diversion works required.
- Undertake a demand assessment for each core utility serving the Proposal.
- Develop a site plan of key, onsite utility infrastructure required for the Proposal.
- Consult with relevant service providers to establish requirements for offsite utility upgrades.
- Consult with estate developer regarding the integration of services in the context of the wider utility network.
- Define point of connection or servicing strategy for each service.
- Assess storage and discharge of liquids and chemicals required to support operation of the Proposal.

Following assessment of potential impacts upon existing utilities and service provider assets, mitigation has been identified to minimise potential impacts to existing utilities and services performance.

6.13.2 Existing Environment

A BYDA search identified a number of utility providers owning and / or operating assets within or in the vicinity of the Site, as outlined in Table 6-37.

Table 6-37 Utility providers with assets within the vicinity of the Site

Utility Provider	Utility Type
Endeavour Energy	Electricity
Jemena	Gas
NBN Co	Communications
Optus	Communications
Opticomm	Communications
Sydney Water	Water supply / Sewerage / Stormwater
Telstra	Communications
TPG	Communications
Vocus	Communications

Electrical services

No existing electrical services have been identified within the Site other than domestic connections to existing dwellings planned to be demolished under separate development application for early works.

However, underground electrical ducts run along Turner Road. These ducts are intended to house electricity cables being installed to replace pre-existing overhead wiring.

Water services

The desk-based review of available information did not identify any existing Sydney Water owned water services within the Site. An existing Sydney Water owned mains pipe runs along the southern verge of Turner Road, south of the Site. Assets owned by Sydney Water have also been identified underneath footpaths around Central Hills Drive and White Cliffs Avenue.

Sewer services

No sewer services have been identified within the Site. A Sydney Water owned sewage line is located along the eastern boundary of the Site. A manhole / inspection pit is located within Turner Road, approximately five metres from the southeastern corner of the Site.

Communications services

Four overhead Telstra communication cables have been identified within the Site, each connecting to multi-use poles and a conduit system running along the northern extent of Turner Road. These cables served residential dwellings that have either already been demolished or are uninhabited, awaiting demolition. The Telstra conduit networks is shared with NBN services. New NBN assets connecting to the existing network to the north, are proposed within the Site.

Vocus services run alongside the Telstra conduits on the northern extent of Turner Road, whilst Opticomm conduits and pits run along both the northern and southern extent of Turner Road.

The desk-based review did not identify any TPG or Optus assets within the vicinity of the Site.

Gas services

No existing gas services have been identified within the Site. However, BYDA outputs indicate gas mains run under the far verge of Turner Road as well as under footpaths within Central Hills Drive and White Cliffs Avenue.

Existing stormwater assets

The review of data provided by Camden Council did not identify any existing council-owned piped stormwater assets within the Site. Despite that, an existing drainage network, comprising several surface features such as swales, dams and sediment basins, conveys overland flows. Appendix O (Surface Water Management and Flood Impact Assessment) provides further details.

Topographic data indicates that the nearest public stormwater assets are located along the western and northern boundaries of the Site, at the interactions with Central Hills Drive and White Cliffs Avenue. A council-owned stormwater pipe and standard kerb inlet pit exists along White Cliffs Avenue, about 100 metres north of the southwestern corner of the Site. At the northwestern corner of the Site, there are existing council-owned pipes and kerb inlet pits along Central Hills Drive.

Traffic signals

There are no existing traffic signals or related infrastructure within or adjacent to the Site.

6.13.3 Assessment

This section describes the potential impacts upon existing utilities and service provider assets arising from the construction and operation of the Proposal.

Construction

Electricity

The existing overhead electricity lines and associated poles within the Site will need to be removed to facilitate construction of the Proposal. These assets would be replaced with underground conduits within the Site and along the adjacent road corridor. Surrounding developments have already implemented this, so the new conduits within the Site would connect to existing conduits at either end. These works will require temporary isolation of the electrical system to enable safe working conditions.

As works progress through the construction programme, measures will be implemented to avoid damage to electrical services and infrastructure constructed during initial stages of the works.

Water

Given that no Sydney Water owned assets were identified within the Site, there is not anticipated to be any impact on Sydney Water infrastructure during construction of the Proposal. Any existing private water supplies will be shut-off and removed early in the construction programme during clearance of the Site.

Later in the construction programme, measures will be implemented to avoid damage to water services installed during the initial stages of the works.

Sewerage

No sewer infrastructure was identified within the Site, so it is anticipated that there will be no impact on sewer infrastructure during the construction of the Proposal. Any septic tanks serving uninhabited residential dwellings on the Site shall be drained and the effluent disposed at a licensed wastewater treatment facility. The tank and surrounds will be removed early in the construction programme as part of Site clearance works.

Early in the construction programme, sewer flows will require to be temporarily stored onsite before being transported to a licensed facility. There is a risk of spills of effluent within the Site and the wider environment.

As works progress, measures will be implemented to avoid damage to sewer services installed earlier in the construction programme.

Telecommunications

No telecommunications infrastructure has been identified within the boundary of the Site. As such, no impact from the construction of the Proposal on telecommunication assets is expected. As the works progress, measures will be implemented to avoid damage to telecommunications services installed earlier in the construction programme.

Gas

No gas mains have been identified within the boundary of the Site, so the construction of the Proposal is not anticipated to result in any impact upon gas infrastructure. No gas supply is proposed to serve the Proposal, with power supplied from electrical sources with ancillary supply provided by back-up diesel generators.

Stormwater assets
No subsurface stormwater assets have been identified within the Site. Therefore, no impacts to subsurface stormwater assets are expected to occur during the construction of the Proposal. Surface drainage features that convey surface flows through the Site will be infilled and graded early in the construction programme to create a level platform to accommodate the new data centre. Consideration of the construction-phase impacts upon surface water flows is presented within 6.8.3.

Traffic signalling
No traffic signals have been identified within the Site and, as such, will not be impacted during construction of the Proposal.

Operation

Electricity
Potential impacts on the existing electrical infrastructure arising from the operation of the Proposal include:

- High electrical demand impacting the surrounding high voltage distribution network.
- Effects on the physical environment (i.e. contamination associated with fuel spillages, noise and air pollution associated with back-up generator use etc.), which are addressed in the respective sections of this EIS.

Water and sewerage
Potential impacts on the existing water and sewerage network due to the operation of the Proposal include:

- High demands reducing the capacity of the precinct water and sewer networks.
- Overtopping of rainwater harvesting / water storage tanks.

Water discharging from cooling equipment will be conveyed to the Site's sewer system. There is no pathway between the internal mechanical and cooling systems and the stormwater system serving the Proposal.

Telecommunications
The Proposal will be serviced by a separate telecommunication supply network to ensure telecommunications pathway diversity, so the facility can continue to operate effectively in the event the local telecommunications route goes offline. As such, it is anticipated there will be no impact arising from the operation of the Proposal on the wider telecommunication network.

Gas
No gas supply is proposed to serve the Proposal, with power supplied from electrical sources with ancillary supply provided by back-up diesel generators. Given that no existing gas assets have been identified within the Site, it is considered there will be no potential impact upon the wider gas infrastructure network during the operational and maintenance phase of the Proposal.

6.13.4 Mitigation and management

Table 6-38 sets out the mitigation measures proposed to be implemented to reduce potential impacts from the construction and operation of the Proposal on utility and service provider infrastructure within and surrounding the Site.

Table 6-38: Utility and service provider infrastructure mitigation and management measures

ID	Impacts	Mitigation	Responsibility	Timing
IR1	Fuel spills when filling generators.	Fuel tanks will be designed to comply with AS1940. Fuel tanks will be double walled. Each fill point will have all ancillaries to meet requirements of AS1940.	Proponent/Contractor	Design and Operation
IR2	Fire and explosion risks associated with the generators.	Generators will be designed in accordance with AS1940 which defines minimum clearance from building and separation between fuel storage tanks ("belly tanks"). Generators located behind security fencing/gates, meaning only approved personnel can access this area.	Proponent/Contractor	Design and Operation
IR3	Fire and explosion risks associated with the switching station.	High voltage switching station will be designed by a certified Level 3 ASP designer in accordance with relevant current version of Australian Standards and Industry Associations Standards and Guidelines. Switching station located behind security fencing/gates, meaning only approved personnel can access this area.	Proponent/Contractor	Design and Operation
IR4	Air pollution when generators are operational	Two separate mains points of supply are proposed, and the probability of mains failure has been investigated for the electrical supply. Failure rates for a supply in this arrangement are extremely low, meaning the generators will rarely be used. Generators will include specific emissions control measures and will be Tier 2 certified to Australian EPA requirements. Refer to Appendix L (Air Quality Technical Report) for further details.	Proponent	Design and Operation
IR5	High demands reducing the capacity of the estate or precinct water and sewer networks.	To minimise the peak water demand on Sydney Water's potable water network, the water balance of the proposed site has been maintained through the use of rainwater re-use tanks and the provision of fire and process water storage tanks on site.	Proponent / Sydney Water	Design / Construction
IR6	Overtopping of rainwater harvesting/water storage tanks.	Water overtopping from the rainwater tanks will discharge to the stormwater system. Discharged water will not contaminate the surrounding environment as it will either be from mains supply or roof collected, which has passed through water quality treatment features.	Proponent	Design / Operation
IR7	Discharge of cooling water.	Cooling water discharge will be discharged to the Site's sewer system.	Proponent	Design
IR8	Failure of transformer resulting in oil spill.	Transformer units are contained within plinth foundations which have sump storage capacity min 30% volume of oil stored. A separate stormwater system, serving only the transformer plinths, will drain through a full retention oil and water separator prior to discharge to trunk stormwater system. Oil and water separator sized for 110% the volume of oil contained within 1No transformer unit.	Proponent	Design/Operation
IR9	Spills/leakages from on-site storage of effluent during early stages of construction.	On-site storage features such as septic tanks will be in accordance with the relevant Australian Standards. The Contractor shall locate the storage tanks in an appropriate location within the site and shall empty the tanks on a regular basis.	Proponent / Contractor	Design / Construction
IR10	Redundant telecoms supply	The administration building is concurrently connected to multiple entry points, providing the operator with the ability to utilise a	Proponent	Design / Operation

ID	Impacts	Mitigation	Responsibility	Timing
		physically diverse service in the event of failure. All telecommunications pathways are physically separated by a minimum of 8m to minimise risk of concurrent damage to multiple pieces of telecommunications infrastructure.		

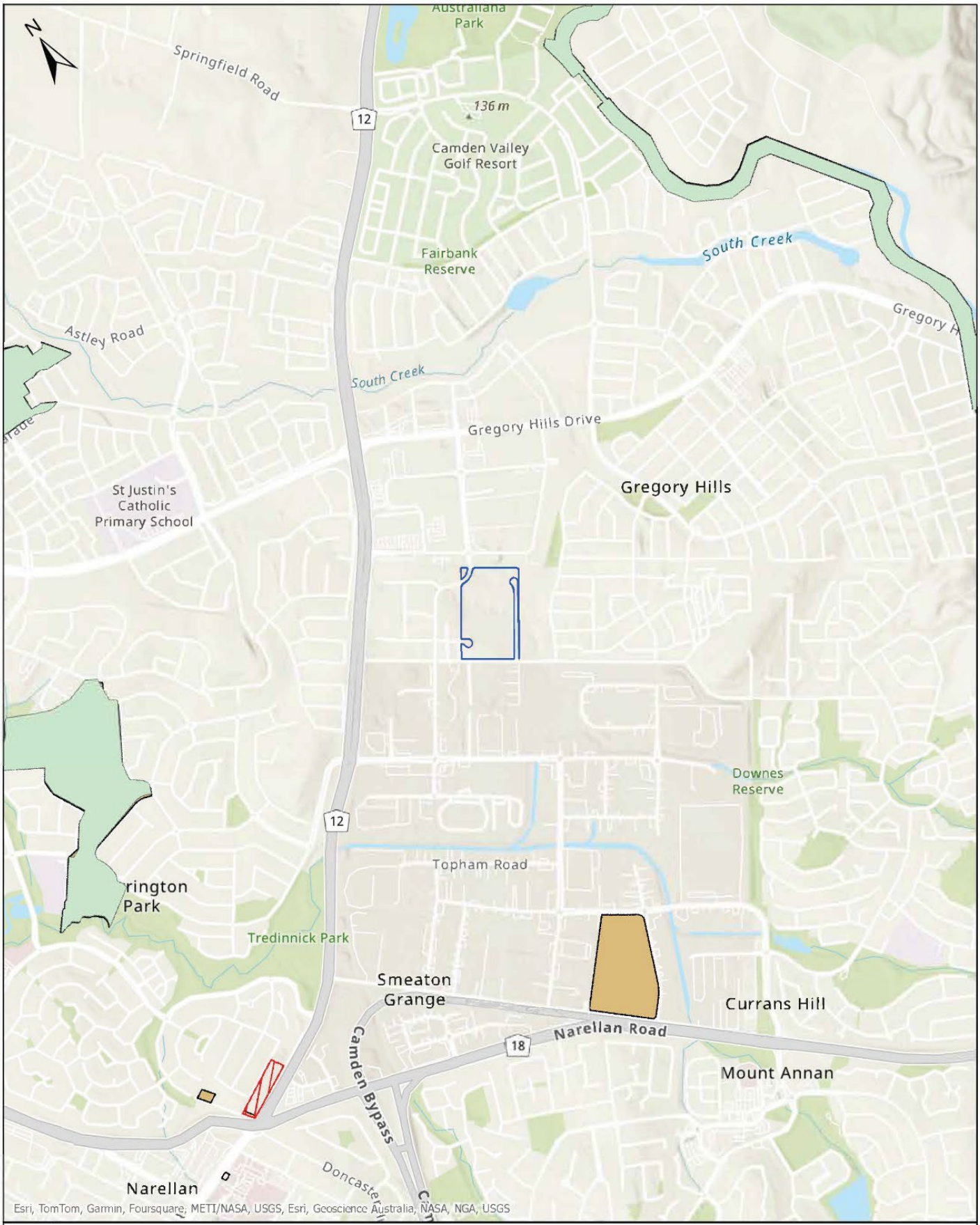
6.14 Non-Aboriginal heritage

6.14.1 Existing environment

A desktop review of the national, state and local heritage registers confirms that there are no non-Aboriginal heritage listed items on or immediately adjacent to the Site. There are, however, several heritage items within the wider area as shown in Figure 6-16. Heritage listed items within 2,000 metres of the Proposal mostly comprise of local listed building such as cottages, school buildings and a church. There is also a heritage listed park, conservation area and the Upper Canal System.

6.14.2 Assessment

Given the distance of these heritage items to the Proposal, they are considered to be beyond the limit of Proposal's impacts. As such, the Proposal would not impact the heritage significance of any non-Aboriginal heritage items.



Legend

- Proposal area
- State Heritage Register Curtilage
- Aboriginal Object
- Aboriginal Place of Heritage Significance
- Conservation Area - Aboriginal
- Conservation Area - Archaeological
- Conservation Area - General
- Conservation Area - Landscape
- Heritage Conservation Area
- Item - Aboriginal
- Item - Archaeological
- Item - General
- Item - Landscape
- Local Heritage - General

Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere

0 165 330 660 Metres

ARUP

154 Clarence Street
Sydney NSW 2000
Tel +61 2 9320 9320
www.arup.com

Client
Confidential

Project Name
43-61 Turner Road Data Centre

Drawing Title
Non-Aboriginal heritage

Scale at A4
1:26,816

Project Number
299816-00

Figure No.
6-16

Rev	Date	By	Chkd	Appd	Authd
A	26/09/24	MD	CS	CS	CS

6.14.3 Mitigation and management

Table 6-39 below outlines the proposed measures to mitigate and manage potential impacts for non-Aboriginal heritage.

Table 6-39: Non-Aboriginal heritage mitigation and management measures

ID	Impacts	Mitigation	Responsibility	Timing
NAH01	Risk of impacting heritage items.	A Non-Aboriginal Heritage Unexpected Finds Protocol will be developed and implemented. The Protocol will include measures to deal with any unanticipated archaeological deposits or skeletal remains found during construction. It will require works within 10 metres of the finds to stop immediately. It will also require the contractor to immediately notify the Proponent so they can assist in coordinating the next steps, which are likely to involve consultation with an archaeologist. Where required, further archaeological work and/or approvals will be carried out and obtained before work restarts in this area.	Contractor	Pre-construction

6.15 Cumulative impacts

This section summarises the potential cumulative impacts that could occur from the Proposal being built at the same time in the same area as other committed and approved developments. This assessment is based on the Cumulative Impact Assessment Guideline for State Significant Projects (DPE, 2022).

Cumulative impacts occur because of the combined impacts of one or more developments occurring at the same time and have a different impact than an individual proposal on its own. There are two types of cumulative impact:

- *Incremental impacts* | This assesses the additive effects of the Proposal to the existing baseline condition on sensitive receivers or the surrounding area.
- *Combined impacts* | This assesses the combined effect of the Proposal's impacts on sensitive receivers or the surrounding area. This considers residual impacts of developments that are not yet built which may change the future environmental baseline.

Cumulative impacts can only occur where construction or operational activities associated with the Proposal overlap with the construction activities associated with committed or approved developments. They can only affect shared receivers or values. Cumulative impact assessment can only consider reasonably foreseeable developments where there is sufficient detail of their potential impacts. This is because it is not possible to credibly assess the impact of other developments without this evidence.

6.15.1 Method

The method that was used to carry out the cumulative impact assessment comprised:

- Defining the assessment timeframes and study area
- Identifying what development to assess based on the above
- Identifying what receivers and values could be incrementally impacted by the Proposal
- Identifying where different combined impacts could occur on shared receivers and values in the area over specific timeframes
- Confirming the uncertainty associated with the assessment.

6.15.2 Assessment

The following section assesses the cumulative (incremental and combined) impacts.

Timeframes and study area

Section 3.9 describes how the Proposal would be built over about two and a half years, starting in early 2026 subject to securing the required approvals, appointing a contractor, and confirming supplies and logistics. This defined the timeframe used in the cumulative assessment. Section 2.2 and section 2.3 describe the key receivers and values that would be potentially impacted by the Proposal. This defined the study area.

Relevant committed or approved development

The NSW Major Projects website, Commonwealth EPBC referral list, and Camden Council's development application (DA) tracker were reviewed to identify relevant future projects (or changes) that are committed or approved and within approximately 2.5 kilometres of the Proposal, but not yet built. The following projects outlined in Table 6-40are relevant to the cumulative assessment due to overlapping construction and operation timeframes or study areas. DAs relating to minor alterations, modifications and internal fit outs are not considered relevant to the cumulative impact assessment and have therefore not been included in Table 6-40.

Table 6-40: Relevant future projects near the Proposal

Proposed development / Address	Description	Reference	Location in relation to this Proposal
Data Centre (52 Turner Road)	A new data centre with a capacity of 40MW including emergency back-up generators, cooling plant, diesel and lithium ion battery storage, substation and associated infrastructure. However, the application is due to be withdrawn. As such, cumulative assessment of impacts has not been undertaken.	SSD-60185233	Approximately 20m southwest of the Proposal.
Smeaton Grange Drink Manufacturing Facility	Two-storey warehouse, production and office building with associated development including loading and unloading areas, car parking and landscaping.	MP08_0011	Approximately 850m southeast of the Proposal.
Smeaton Grange Waste Facility (52 Anderson Road, Smeaton Grange)	A recycling facility for inert general solid waste such as construction and demolition waste.	SSD-7424	Approximately 950 metres to the southeast of the Proposal.
Harrington Park Public School Redevelopment	Alterations and additions to the existing public school to accommodate an additional 184 new students and refurbish of the school's existing infrastructure.	SSD-9478	Approximately 1.8km west of the Proposal.
Camden Medical Campus (The Hermitage Way, Gledswood Hills)	Construction of a six-storey private hospital and biomedical research facility with associated sub-terranean and separate multistorey car parking.	SSD-49076708	Approximately 900m northeast of the Proposal.
New primary school at Gregory Hills (28 Wallarah Circuit, Gregory Hills)	A three-story primary school with outdoor play spaces, parking and associated works.	SSD-41306367	Approximately 1.8 kilometres to the northeast of the Proposal.
Gledswood Hills Public School (Gledswood Hills Drive and Camden Valley Way)	A new primary school on vacant land. This includes three new buildings.	SSD-8378	Approximately 2.4 kilometres to the north of the Proposal.
Mixed Use Development	Mixed use development and associated site works	DA/2022/371/1	Approximately 350m north of the Proposal.

Proposed development / Address	Description	Reference	Location in relation to this Proposal
(28-36 Lasso Road, Gregory Hills, 2557)			
Industrial Subdivision (43, 49, 55, 61 and 67 Turner Road, Gregory Hills, 2557)	Demolition of extant structures, site clearance, remediation of contaminated land, subdivision to create 23 industrial plots, public road construction and associated site works.	DA/2022/492/1	0m from the Proposal
572 – 596 Camden Valley Way; 17 – 37 Turner Road, Gregory Hills	Subdivision and civil works including remediation of contaminated land, tree removal, bulk earthworks, new roads and retaining walls and landscape works.	DA/2019/742/1	Multiple locations, between 15 metres and 440 metres to the northwest of the Proposal.
123 Turner Road; 15 Fallow Street; 9, 12, 17 Barrett Street; 6, 23 Jasmine Road; 12 Yarra Avenue; 96-98 Healy Avenue; 9-10 Bagnall Street, Gregory Hills	Subdivision and civil works including remediation of contaminated land, demolition of existing structures and new roads.	DA/2020/369/1	650 metres to the east of the Proposal.
8 Cobar Place, Gregory Hills	Two new industrial units including offices, carparking and landscape works.	DA/2021/1663/1	490 metres to the northwest of the Proposal.
36 Turner Road, Smeaton Grange	A mixed use development including light industry, self-storage centre, child care centre, food and drink, office and car parking.	DA/2022/507/1	70 metres to the west of the Proposal.
2 Steer Road, Gregory Hills	A new warehouse building for business and retail. This includes parking and landscape works.	DA/2022/772/1	500 metres to the north of the Proposal.
42B Bluett Drive, Smeaton Grange	A control room, four 11-metre-high lightening masts and electrical substation for an existing data centre.	CC/2023/65/1	880 metres to the east of the Proposal.

Incremental impacts

Table 6-41 provides an overview of the incremental cumulative impacts that may occur.

Table 6-41: Summary of incremental cumulative impacts

Receiver	Construction	Operation
Workers at adjacent commercial and industrial properties	There would be incremental cumulative impacts to these receivers during construction. The nearest commercial and industrial properties are directly behind the Site. The workers at these locations would experience visual, noise, air quality (dust), and elements of social amenity impacts over the construction period. The scale of these impacts would be worse during the initial 18-months when Activities 1 to 4 are carried out. Despite this, providing the range of mitigation measures described in the EIS are implemented and effective, then all the corresponding assessments conclude that any significant adverse residual and incremental impacts would be avoided. Also, the effectiveness of the measures introduced to mitigate individual impacts would be no less effective in managing incremental cumulative impacts.	Once operational, the visual, social and noise amenity of these receivers maybe affected. As noted in the EIS, the acoustic treatments would be sufficient to avoid any exceedance of amenity and health-based criteria. Also, the Proposal's visual appearance and design is being developed to reduce its visual impact. Therefore, any significant adverse residual and incremental impacts would be avoided. Traffic modelling for the Camden Valley Way / Anderson Road / Sir Warwick Fairfax Drive intersection indicates that cumulatively, traffic generated from the Proposal and developments in the surrounding area remains within the existing capacity of the intersection. While the people working the area would still experience an incremental amenity-related impact from the introduction of the Proposal, this would be in the context and setting of an area where future industrial development is planned. Therefore, the Proposal would ultimately be congruous (fit in) with the wider changes taking place in the precinct. Finally, the effectiveness of the measures introduced to mitigate individual impacts would be no less effective in managing incremental impacts.

Receiver	Construction	Operation
Residents and workers in Smeaton Grange and surrounding suburbs	Given the existing road network, the most direct route for construction machinery and vehicles to access the Site is from the west via Camden Valley Way. Access to the Site from the east would require vehicles and machinery to travel through the suburban residential streets of Gregory Hills or Currans Hill. As such, there would be temporary incremental cumulative traffic impacts to these receivers if construction and operational machinery to these Sites arrive via Camden Valley Way. Additionally, noise would be generated from the Proposal's construction such as during excavation and installing foundation piles. This would temporarily affect the amenity of these receivers. As these areas are beyond the limit of the Proposal's other amenity impacts, there would be no other incremental cumulative impacts to these receivers.	Once operational, the only predicted impacts would be from noise generated on Site. Noise levels during operation are predicted to comply with the daytime and nighttime criteria at all receivers during standard operation provided mitigation measures are implemented.

Combined impacts

After reviewing the impact of the other relevant committed and approved developments, it was confirmed that they would share timeframes with the Proposal and they may impact on the same study area. Table 6-42 provides an overview of the environmental aspects where combined cumulative impacts may occur.

Table 6-42: Summary of potential combined cumulative impacts

Aspect	Construction	Operation
Visual	Visual impacts during construction would occur as a result of the presence of construction equipment and machinery from the Proposal and nearby developments being constructed around the same time. This may result in construction fatigue, particularly for affected receivers located at higher elevations that have longer distance views over the landscape and are therefore able to see more developments in the area.	While consistent with the landscape character of the area, new industrial buildings present as a result of the Proposal and other nearby development may contribute to an erosion of views for certain sensitive receivers.
Traffic, transport, and accessibility	There would be an increase in traffic movement on Camden Valley Way as it provides the most direct access to and from the Proposal and surrounding project sites. Traffic modelling indicates that during the PM peak period, vehicle movements at the Camden Valley Way / Anderson Road / Sir Warwick Fairfax Drive intersection would remain within the existing operating capacity of the intersection. Regardless, mitigation measures and traffic management would be implemented to further minimise traffic impacts. Modelling indicates that surrounding roads would have enough capacity to deal with the likely total traffic volumes generated during construction of the Proposal and other developments.	There is predicted to be up to 50 staff during operation. This would increase the traffic movement to and from the Site. However, the internal Site roads, Site entrance and security gatehouse have been designed to prevent traffic queuing on Turner Road from staff vehicles during AM and PM peaks. Traffic modelling shows that the surrounding roads would have enough capacity to deal with the likely total traffic volumes generated during the operation of the Proposal and other developments.
Air quality	The Proposal and surrounding developments will add to Sydney's air emission inventory. However, the combined effects would be unlikely to result in any significant amenity, pollution or health-related impacts. This is due to the existing industrial nature of the area.	The air quality assessment considered the cumulative impacts of the Proposal and generator testing during operation. There is unlikely to be any significant amenity, pollution or health-related impacts.
Noise and vibration	Some overlap in construction noise may be heard and this would increase the amount of time that workers in adjacent commercial and industrial buildings would be impacted. This could potentially lead to construction noise fatigue. As noise impacts are typically dominated by the closest equipment, masking the effects of other noise in the wider area, adjacent receivers would be unlikely to perceive the increase in surrounding construction noise.	The Proposal's operational noise during the daytime and nighttime during standard operation are predicted to comply with noise criteria. Appendix M (Noise and Vibration Assessment Report) details the noise modelling outputs. The cumulative operational noise impacts from the future industrial zones (see Table 6-40) are unknown at this stage. Light industrial units, commercial and retail offices are expected to operate in surrounding future industrial zones and are unlikely to generate significant amounts of noise during the daytime or nighttime. While the Proposal's

Aspect	Construction	Operation
		nighttime noise levels comply with noise criteria, future projects would need to consider these levels so as to not significantly impact nearby residential receivers.
Flooding	During construction, the Proposal would not increase flood levels so as to result in cumulative impacts with surrounding developments. The capacity of existing and futured stormwater network will be able to accommodate predicted flooding without causing strain on the network.	As in construction, the Proposal would not increase flood levels so as to result in cumulative impacts with surrounding developments or cause strain on the stormwater network.
Social	Key cumulative social impacts include decreased amenity (e.g. increased noise and vibration and decreased air quality and visual amenity), which may alter the way of life for the local community such as increasing the amount of time people spend indoors and reducing the potential customer base. Depending on the timing of construction activities with other projects, there may be an increased demand placed on construction staff, materials and equipment within the local community. However, given the proximity to the Sydney CBD and wider Greater Sydney region, it is expected that these could still be filled.	The Proposal is unlikely to have any cumulative operational impacts with other projects.
Infrastructure requirements and utilities	Electricity assets, including lines and poles, are due to be replaced with cables laid in buried conduits along the road corridor. It is expected that these activities will be undertaken by specialist contractors and will be programmed to avoid maintenance and upgrade works on the wider electricity network. Such measures are considered to minimise the risk of cumulative impacts upon the local electricity network and supply. Given that no potable water supply, gas, stormwater, sewerage, telecommunications or traffic signalling infrastructure have been identified within the Site, there are not anticipated to be any cumulative impacts relating to these services during construction of the Proposal.	The Proposal will not be serviced by gas and will be served by an independent telecommunication network. Therefore, no cumulative impacts with other committed and approved projects upon these utilities are anticipated to arise during the operation of the Proposal. The operation of the Proposal would like place a high demand on the network for both electricity and for water. Measures have been embedded in the design to minimise such effects, such as back-up generators to provide electricity in the event of issues of electricity supply and passive cooling technologies which will reduce the demand for water in cooling the equipment.

6.15.3 Mitigation and management

Table 6-43 lists the proposed measures to mitigate and manage cumulative impacts.

Table 6-43: Cumulative impact mitigation and management

ID	Impacts	Mitigation	Responsibility	Timing
CU1	Cumulative impacts	Once operational schedules are finalised, the cumulative impacts will be reviewed and verified. If there is an unexpected change, then additional assessment will be carried out and further measures will be investigated and implemented.	Proponent	Pre-operation/ operation

7. Proposal Justification

This Chapter provides justification for the Proposal as a whole.

7.1 Justification

The Proponent is seeking consent to build a data centre in Gregory Hills. The Proposal responds to the heightened demand for data and cloud storage in Sydney. They underpin society's move towards a digital economy as they allow access to enormous quantities of information anytime-anywhere, and they keep people connected to vital services. Their growing demand is recognised by the NSW Government (see Section 2.4).

7.1.1 Selecting the preferred proposal

From a location perspective, the Site was considered the best alternative as it would be able to accommodate the intended platform and scale of the data centre. Accordingly, the Site's locality is considered satisfactory from a strategic standpoint, with the Proposal responding to the industrial character intended for the area. Considering the above, the proposed Site specifically promotes industrial-related development of the type proposed. The Site, configuration, and technology and power alternatives also help meet the Proposal's objectives as described below.

Table 7-1: Meeting the proposal objectives

Objective	Description
Support the ongoing demand for internet usage and data storage for customers, with a particular focus on customers in Western Sydney.	The Proposal would support the growing demand for data storage by providing storage capacity across Western Sydney. The Proposal would contribute to meeting future data storage demand and help the transition to a digital economy. The ongoing demand for data storage is underpinned in various strategic policies that support the Proposal (see Section 2.4).
Deliver economic benefits and employment generation for the area.	The Proposal would deliver economic benefits through promoting innovation, stimulate investment and elevating productivity within the local and surrounding area. It would therefore deliver local and wider economic benefit by helping support commerce, industry and essential services such as hospitals, schools, energy and utility providers, banking and transport.
Construct and operate the Proposal in a sensitive and responsible manner, in relation to the environment and the health and safety of all staff and the surrounding locality.	The Proposal would be constructed in a sensitive and responsible manner as confirmed in the impact assessment in section 6. This is supported by selecting a Site strategically zoned as IN1 General Industrial which supports industrial use. This reflects the Site's reduced environmental sensitivity and its suitability to support a data centre. The impact assessment confirms that the Proposal could be delivered without resulting in any significant and unacceptable impacts. The assessment confirms that any potential impacts can be managed by the mitigation measures. The Proposal would therefore be delivered in a sensitive and responsible manner that protects the health, safety and wellbeing of construction staff, operational staff, people working nearby and the human and ecological communities surrounding the Site. Section 7.1.7 and Appendix F (Summary of mitigation and management measures) outline the monitoring and communication priorities over the coming months to investigate and validate the impacts and to implement mitigation measures if unexpected outcomes occur. An ongoing commitment to engaging with and communication with the public will help deliver the Proposal in a socially respectful and sensitive manner.

7.1.2 Strategic support

The Proposal helps support a transition to a digital economy by meeting the growing demand for digital storage capacity. It is strategically supported through the following policies:

- The Greater Sydney Region Plan promotes the growth of critical infrastructure across the city to support the growing demand for data storage.

- The Western City District Plan aims to attract innovation into industrial lands. Its Planning Priorities promote the need for digital technology to support jobs in "knowledge-intensive industries to diversify the economy and attract a skilled workforce".
- The Camden LSPS recognises the need for knowledge-intensive industries and more diverse job opportunities in the area. The LSPS also supports wider initiatives to promote employment diversity and economic development. These are initiatives that the Proposal would help deliver.

7.1.3 Statutory compliance

The Proposal classifies as SSD by virtue of its power consumption at approximately 53 MW, which is above the Planning Systems SEPP threshold of 15 MW. In addition to the primary consent, the Proposal is unlikely to need any supporting permits or licences, outside of general certifications that apply to all development in NSW. The activities taking place onsite do not present a significant pollution risk or involve complex waste management issues. This is because they do not trigger the threshold criteria that require an environmental protection licence under the *Protection of the Environment Operations Act 1997*. Also, while there are inherent dangers with the materials used onsite, they are below levels that would classify the Site as a potentially hazardous industry under the Resilience and Hazards SEPP. The Minister and Independent Planning Committee must review a series of core mandatory considerations under section 4.15 of the EP&A Act, particularly section 4.15, when determining the development application. Table 7-2 summarises how the Proposal complies with these.

Table 7-2: Statutory compliance

Statutory consideration	Summary
Any environmental planning instrument or any proposed instrument that is or has been the subject of public consultation that has been notified to the consent authority.	Section 4.3 demonstrates how the Proposal can be built on IN1 General Industrial zoned land with consent from the Minister or IPC, where the Proposal classifies as SSD. This means it is both permissible and has a defined planning approval pathway, without any need for rezoning.
Any development control plan.	Section 4 demonstrates how the Proposal is consistent with the planning provisions and development controls that apply to the Site and broader area. It also references the technical appendices where the details are fully considered.
Any planning agreement that has been entered into or any draft planning agreement that a developer has offered to enter into.	Section 1.4 confirms that the Proposal is not restricted by any existing covenants. This is because the Proponent owns the Site.
The Regulations.	Appendix C (Statutory Compliance Table) demonstrates how the EIS has been prepared in the form prescribed by section 190 of the Regulation. Appendix A (SEARs Table) demonstrates compliance with the industry specific assessment requirements for data storage centres (DPHI, 2024a) as required under section 191 of the Regulation. The content of the EIS has been prepared in accordance with section 192 of the Regulation, along with the State Significant Development Guidelines – Preparing an Environmental Impact Statement (DPHI, 2024b). Section 7.1.5 below shows how the Proposal is consistent with the principles of ecologically sustainable development (ESD) as defined under section 193 of the Regulation.
The likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality.	Chapter 6 and Appendix G (Visual Impact Assessment) to Appendix U (Infrastructure and Services Report) have identified the Proposal's likely environmental, social, and economic impacts on the locality. Section 7.1.4 below summarises this.
The suitability of the Site for the development.	Section 7.1 above explains why the Site is suitable for development.
Any submissions made in accordance with the EP&A Act or the Regulations.	This will be covered in the Response to Submissions Report (see section 1.1).
The public interest.	Section 2 explains why there is a strategic need for the Proposal and why there is a public interest captured under regional, district, and local policy, as summarised above in section 7.1.
The objects of the Act.	The objects are guiding principles that are considered by DPHI, when making planning decisions. They provide a framework to help assess if the Proposal is

Statutory consideration	Summary
	consistent with the Act's wider provisions. Section 4 demonstrates consistency with the relevant objects.

7.1.4 Likely development impacts

The following section summarises the scale and nature of the environmental, social, economic, and cumulative impacts and benefits that would occur once the proposed mitigation is implemented.

Environmental (construction)

The construction work would involve a standard set of typical construction activities taking place onsite.

While they present various inherent environmental risks, there are recognised standard measures that are tested and proven to mitigate effectively which would be implemented. Providing the measures proposed are implemented effectively, water quality, ground quality and air quality would be preserved. Similarly, the erosion and sedimentation risk can be managed under defined controls.

The Site is also not located within flood prone land. More broadly, the stormwater and wastewater discharges during construction could be effectively managed in addition to managing waste, and the various small amounts of hazardous materials used onsite without introducing a pollution risk.

Environmental (operation)

The impact assessment confirms that the noise and air emissions generated from operating the Site can be effectively managed to avoid a pollution risk. The proposed stormwater infrastructure comprises gross pollutant traps and regulating the discharge offsite via a regional detention basin. These controls are assessed as being sufficient to achieve the water quality targets set locally. While the Site includes both battery and diesel storage, both of which present a fire and pollution hazard, they could be effectively managed and contained to avoid any onsite or offsite pollution or fire risk. Licenced and skilled contractors would be used to manage waste activities onsite and refuelling of the diesel generators, again to avoid environmental impacts.

While there is also an inherent risk of equipment failure, an intended aim of the routine service and maintenance schedule described in section 3.6, is to avoid any failures and the centre going offline. This level of servicing and maintenance is typically higher than most industrial facilities, meaning it would reduce the associated environmental hazards and risks.

Social (construction)

People working in the area would experience a temporary increase in noise, the potential generation of dust and other Site-based emissions, and a loss of amenity through general construction work and activity in the area. These impacts would occur for a period over about 18-months. They would be insufficient to significantly affect people's health and wellbeing or way of life.

Critically, the Site's location is within an industrial precinct and would avoid any wider community and accessibility impacts. The Proposal would employ around 100 people from a range of skills that could be serviced from the local community due to the high proportion of machinery operators, technicians, and labourers in the area. There is also opportunity to use materials that can be supplied locally, including from First Nations-owned businesses.

Social (operation)

At a wider societal level, the Proposal would provide increased data security and reliability for people who live, work, and visit Sydney. Cloud data also supports essential services and how people move around Sydney, therefore providing an indirect benefit. Locally, the Proposal provides increased and diverse employment opportunities. It has been designed to include sufficient onsite parking for the people who would work and visit the Site. This would prevent any loss of on-street parking on local streets nearby. This would be complemented by the provision of 10 bicycle parking spots and end of trip facilities, with associated measures and incentives to promote walking, cycling, and catching public transport to and from work. The design also promotes safety and security for staff through, installing security cameras and lighting, and a controlled Site access.

The final detailed design will continue to be developed to improve its overall aesthetic within its setting. This should ensure the Proposal is congruous (fits in) with the surrounding landscape and amenity, consistent with the intended appearance of the wider precinct. The one limitation of a data centre is its high power and water consumption. Table 7-3 discusses the commitment to secure a green energy tariff and use rainwater harvesting to reduce the impact of this. However, this would still have a wider societal impact as the need to use non-renewable fossil fuels in the back-up generators (see section 3.2) does not align with regional sustainability values.

Economic

The Proposal and Site offer the following economic benefits:

- The data centre would provide various positive social and economic benefits in helping support the growth and development of Western Sydney.
- The Site is also strategically placed within an industrial zone and between key urban areas, which would help bolster their data resilience.
- As noted in Table 7-1, the Proposal would promote innovation, stimulate investment, and benefit the economy through elevating productivity within the region. It would therefore deliver wider economic and employment benefits.

Cumulative

Section 6.15 confirms that there would be some overlap in the construction of the Proposal and other relevant future projects in the area. Provided the range of mitigation measures described in the EIS are implemented and effective, then any significant adverse residual and incremental impacts would be avoided. The assessment also confirms that the effectiveness of the measures introduced to mitigate individual impacts would be no less effective in managing incremental impacts.

Once operational, while the people working in the area would still experience an incremental amenity-related impact from the introduction of the Proposal, this would be in the context and setting of an area where future industrial development is planned. Therefore, the Proposal would ultimately be congruous (fit in) with the wider changes taking place in the precinct.

There is the potential for workers in the area and residents in the surrounding communities to experienced cumulative combined amenity impacts from the overlapping construction and operation of the Proposal and other relevant future projects in the area. This would lead to potential construction fatigue due to workers being impacted for longer than assessed in the EIS. While the additive impact of the Proposal would generate

more noise, air emissions, stormwater, wastewater, and traffic collectively, the impact of all these was assessed. This confirmed that the combined impacts could be adequately mitigated to meet amenity, pollution, and health-based criteria. The assessment also confirmed that the infrastructure and utilities have been designed to support the combined demand and impact of the Proposal. The proposed landscaping, planting and urban design strategies recognise the intended design consistency across both sites, in terms of their overall mass, scale, height, façades, and finishes, and the Site's industrial setting and context. The visual impact of the Proposal would be consistent and congruous with the design intent of the surrounding precinct.

7.1.5 Ecologically sustainable development

The following section describes how the Proposal promotes the four ecological sustainable development (ESD) principles defined under section 192 of the EP&A Regulation. This is supplemented by the sustainable design initiatives included in Section 6.3. The precautionary principle is that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. The EIS has been prepared based on the concept of what would be built onsite and a broad understanding of how it would be built. While there is a degree of certainty in the Proposal, there are elements that would only be confirmed during detailed design or once a construction contractor is onboard. This is typical of most developments and something the NSW Government recognises in its State Significant Development Guidelines (DPHI, 2024b).

This means the impact assessment, assessment of alternatives, design and mitigation has adopted the following precautionary measures to avoid serious and reversible environmental damage and degradation:

- *Assessing a worst-case* | The impact assessment has assessed a worst case. Notably, this includes the scheduled load-testing which would occur for short periods each week. The proposed mitigation is based on the impact of a reasonable worst case.
- *Validating and verifying uncertainty* | The mitigation commits to further investigate impacts during detailed design to validate mitigation. This includes additional testing and monitoring to check that the impact predictions and assessments in the EIS are valid and representative. The mitigation measures also commit to investigating and implementing additional controls if the outcomes are unexpected.
- *Applying mitigation by precaution* | Various measures have been used to mitigate impacts even if there is not the scientific justification for it. The noise treatment measures are defined against a precautionary lower noise limit (see section 6.15) applied to the Site.
- *Revisiting the design* | There is a commitment to review the final detailed design and construction and operational details to confirm the extent, duration, scale, and magnitude of impacts. If these change the effectiveness of the mitigation, additional assessment will be carried out to investigate and implement measures to reduce impacts to acceptable levels. Also, if the changes are material, it may require the consent to be modified before construction starts.

The principle of inter-generational equity is that the present generation should ensure the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations. While there is a need for affordable and reliable access to data across society, in justifying the Proposal, the EIS has developed the following measures to maintain natural, social, and cultural capital and equity for future generations:

- *Natural capital* | As noted below, the proposed landscape and planting strategy (see Appendix E (Landscape Plan)) has been developed within the context of the Camden Council's flora species list,

which will increase biodiversity and provide some ecosystem services over time. This would improve the area's natural capital into the future and therefore create benefits for future generations.

- *Social capital* | The Proposal's operational lifespan would span two or three generations. This means it would provide data security inter-generationally. It also helps deliver wider economic and employment benefit regionally into the future, supporting a transition to high-end technology jobs and the digital economy, factors that are proven to improve social capital.

The principle of the conservation of biological diversity and ecological integrity is that both aspects should be a fundamental consideration in conservation. This principle appreciates the total value and overall functions of an ecosystem rather than specific threatened species impacts. The progressive aim is to create a net gain in biological diversity and ecological integrity. This in turn helps improve the local area's natural capital because it can introduce and protect essential ecosystem services.

The proposed landscape strategy (see Appendix E (Landscape Plan)) includes measures to promote the use of native species and planting patterns that complement and enhance the area's characteristic native flora. The landscape strategy includes the use of species that are energy and water efficient, and provisions to promote passive cooling. While small scale, this will help deliver the following ecosystem services:

- *Provisioning services* | The landscape and planting strategy will help with passive cooling onsite, while the use of natives will help promote wider pollination amongst native species aligned with the Camden Council's flora species list.
- *Regulating services* | The proposed green space at the front of the Site will help regulate overland flows and runoff to and from Turner Road. Once mature, the vegetation would provide shade and contribute to the local green cover and green connectivity. The vegetation would also provide some carbon-capture and sequestration services, improving the local air quality.
- *Supporting services* | At a local level, the landscape and planting would help attract wildlife, promoting biodiversity and carbon capture.

The principle of improved valuation, pricing and incentive mechanisms is that environmental factors should be included in the valuation of assets and services. Mechanisms, such as the polluter pays, should account for the full lifecycle costs of goods and services, including natural resource use and waste disposal, and establishing and achieving environmental goals.

Table 7-3 summarises how the Proposal's full lifecycle costs and total economic impacts would be evaluated.

Table 7-3: Improved valuation and pricing of environmental resources

Valuation and pricing principle	Comment
Best available technology: Where there is the need to use feasible controls to avoid or minimise impacts that are both reasonably available and economically viable locally.	As noted in Section 1.8, the Proponent has a long history of building similar infrastructure globally, and its development of standardised equipment schedules and design specifications that offer credible environmental and sustainable performance. Appendix J (Ecologically Sustainable Development Report) details these measures which have been supplemented by a series of sustainable design commitments described in section 6.3. This means a global specification set by the Proponent of low-emission technologies would be used. This will be complemented by operational performance specifications that require the equipment to be routinely monitored, tested, and serviced. While this is carried out to ensure a continuity of power supply to the Site, it is also used to make sure the equipment operates within manufacturer performance specifications. This optimal performance requirement means it would minimise the emissions from the Site. Appendix U (Infrastructure and Services Report) and Appendix W (Building Code of Australia Report) describe this in more detail.
Lifecycle cost principles: Where total up and downstream environmental,	A key element for the Proposal is promoting low embodied carbon materials that are durable to reduce the Proposal's lifecycle impact, especially when considering total maintenance costs. This is consistent with the circular economy principles (see section 6.3).

Valuation and pricing principle	Comment
ecological, and social impacts are accounted for.	
Polluter pays principles: Where there is the need to remain liable for any pollution and environmental damage over a development's life.	As noted above, the Proponent has a long history of building similar infrastructure globally. It is aware of the costs and responsibility of achieving regulatory performance. The EIS describes the equipment schedules, design specifications, and wider mitigation measures that will be implemented over the Proposal's life. The cost of these measures has been included in the Proposal's construction and operational estimates to ensure the Proponent makes the required level of investment to avoid any unacceptable environmental damage or pollution. Appendix F (Summary of mitigation and management measures) describes the provisions to avoid and minimise pollution. These management measures are routinely reviewed and are proven to be effective. They would be controlled and monitored under the CEMP and OEMP. This means the potential for causing actual harm or damage over the Proposal's life would be managed to an acceptably low level. Regardless, the appointed contractor and operator would be responsible for any pollution or environmental damage in line with their obligations under the *Protection of the Environment Operations Act 1997*.
Best practical environmental option: Where there is the need to provide the most benefit for the least environmental, social, and cultural impact at an acceptable cost in both the short and long-term.	Section 2 describes how Site, configuration, technology, and power alternatives were considered to help identify the preferred Proposal. Collectively, the selected Site and layout promote socioeconomic resilience across Sydney and whose environmental impacts can be adequately mitigated. This is confirmed through the detailed impact assessment summarised in Chapter 6. The Site also offers the space and context to provide an effective landscape and urban design response, along with various sustainable design components such as rainwater harvesting as described in Section 3.2. While there would be proposal-related impacts, these can either be avoided or mitigated to acceptable levels. Where there is still some uncertainty about impacts, the proposal to manage and audit the environmental performance onsite (see section 7.1.7) means that the overall outcome provides the best-balanced practical option environmentally. It does this by providing a solution to deliver long-term social and cultural benefits while effectively mitigating the Proposal's impacts for current and future generations.
Environmental goals: Where measures are established and implemented to maximise benefits and minimise associated environmental, economic, cultural and/or societal costs.	A key Proposal objective is to deliver low-cost data for the public and for industry. This means the benefits of building the data centre outweigh the Proposal's potential environmental impacts for current and future generations. This was tested in the Proposal's business case, which demonstrated that the wider social benefits identified in Section 2 are of value and can be mitigated to acceptable levels that achieve the required limits, standards, and criteria (i.e., environmental goals) around hazardous activities, noise and air pollution, health-based, visual, and social impacts, and soil and water quality. This is supplemented through various design controls to treat the Site's noise and air emissions and improve the quality of the stormwater discharge, which have been factored into the build costs (see above).
Natural capital accounting principles: Where the dependency and impact on nature is accounted for to help reach decisions on the use or sustainable consumption of natural resources and land.	As noted in this EIS, a key limitation of a data centre is its high power and water consumption. Options were considered as to the best power supply configuration, concluding that power-supply certainty would come from the grid. Therefore, the decision was taken to select a green energy tariff and install photovoltaics on the rooftop to help improve the Proposal's use of renewable resources. Despite the above providing a high level of redundancy, it would not offer a fail-safe solution. This means the only feasible alternative would be to install back-up diesel generators. This is the Proposal's biggest ongoing dependency on natural capital. Its other demand is the need for cooling water. Unlike the diesel fuel generators, a water-balance can be achieved across the Site by using both rainwater and potable water. Outside of the fuel and water consumption, section 6.3 includes various sustainable design initiatives to reduce water, energy, and material use (all forms of natural capital). These are supplemented by initiatives to reduce waste, promote the circular economy, and reduce the levels of embodied carbon. These have been included, and accounted for, in the Proposal's costs, to reduce the impact on natural resources and land.

7.1.6 Contributions

The Oran Park and Turner Road Contributions Plan (Contributions Plan) and Western Sydney Growth Centres Special Infrastructure Contribution applies to the Site. Development contributions are a discretionary matter by the consent authority. Therefore, any requirements for them could be determined and calculated during the assessment stage. If required, the Proponent would confirm the value and timing of any contributions payable at the time. The works proposed as part of the early works DA (refer to Section 1.4) would provide additional public benefit through the provision of roads and associated infrastructure.

There is currently no planning agreements associated with the Proposal. In addition, the Proponent has made no political donations or gifts.

7.1.7 Uncertainty

The following uncertainties remain:

- The EIS has been prepared based on the concept of what would be built onsite and a broad understanding of how it would be built. While there is a degree of certainty in the Proposal, there are elements that would only be confirmed during detailed design or once a construction contractor is onboard. This is typical of most developments and something the NSW Government recognises in its State Significant Development Guidelines (DPHI, 2024b).
- There is uncertainty around elements of the impact assessment. This has been addressed by adopting the precautionary principle and assessing a worst case.
- Elements of the Proposal where design flexibility has been included to overcome uncertainty and how this has been accounted for in the EIS includes:
- Confirming the final design, and construction and operational impacts are consistent with those presented in the EIS and revising or supplementing the mitigation as needed.

7.2 Conclusion

This EIS has been prepared in the form prescribed by section 190 of the EP&A Regulation. It complies with the industry specific assessment requirements for data storage centres, and the content of the EIS has been prepared in accordance with section 192 of the Regulation, along with the State Significant Development Guidelines – Preparing an Environmental Impact Statement (DPHI, 2024b). Potential impacts have been avoided or minimised in designing the Proposal and preparing the environmental assessment. The section above shows how the preferred Proposal meets its objectives, and is supported under regional, district, and local policy. However, there would still be some temporary and permanent impacts. Measures detailed in this EIS would mitigate or minimise these to an acceptable level, with additional commitments made to manage, monitor, and communicate performance and investigate and revisions if there are unexpected outcomes. Any residual impacts are considered acceptable on balance with the Proposal's benefits, it remains in the public interest for current and future generations.

8. Evaluation and Conclusions

8.1 Evaluation

This EIS has been prepared to support the proposed data centre at 43-61 Turner Road, Gregory Hills NSW. The Proposal comprises the construction and operation of a new 53 MW data centre as described in Chapter 3.

This EIS has been prepared in accordance with the EP&A Act to address the relevant provisions of Schedule 2 of the EP&A Regulation 2000 and Section 190 of the updated EP&A Regulation 2021. It also responds to both the industry specific SEARs (No. SSD-60185233) for data storage centres issued by DPHI on 1/3/2024, as well as the State Significant Development Guidelines (DPHI, 2024b).

As outlined in Chapters 6 and 7 of the EIS:

- The potential environmental impacts of the Proposal have been identified and thoroughly assessed as part of the EIS and supporting documentation. The assessment concluded that the Proposal will not result in any unjustified or unmanageable impacts on the surrounding community, or flora and fauna. It is considered that any potential impacts can be satisfactorily mitigated through a range of measures that have been identified within the EIS.
- There are positive social and economic outcomes associated with the Proposal, which include the provision of a high-quality data centre which is critical to support the region, more specifically the nearby growing residential population and major industry cluster characterised by establishing land use and transport structures. The Proposal will promote innovation, provide ongoing employment opportunities whilst benefitting the economy through elevating productivity within the region.
- The Site is considered suitable for the proposed data centre. The Proposal will utilise vacant land to provide essential technological infrastructure to support the ongoing demand on data storage. The Site is also well-situated regarding access to existing metropolitan infrastructure.

8.2 Conclusion

The Proposal is identified as SSD by virtue of meeting thresholds defined under Schedule 1, Clause 25 of the Planning Systems SEPP. Specifically, the Proposal is appropriately classified as a data storage development with a capacity of more than 15 MW as outlined above.

Further, no unreasonable impacts on or as a result of the Proposal are anticipated as demonstrated within this EIS. A series of mitigation measures have been developed and summarised throughout the EIS and Appendix F (Summary of mitigation and management measures).

Based on the above and the justification provided in this EIS, it is concluded that the Proposal is in the public interest and approval is recommended.

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