

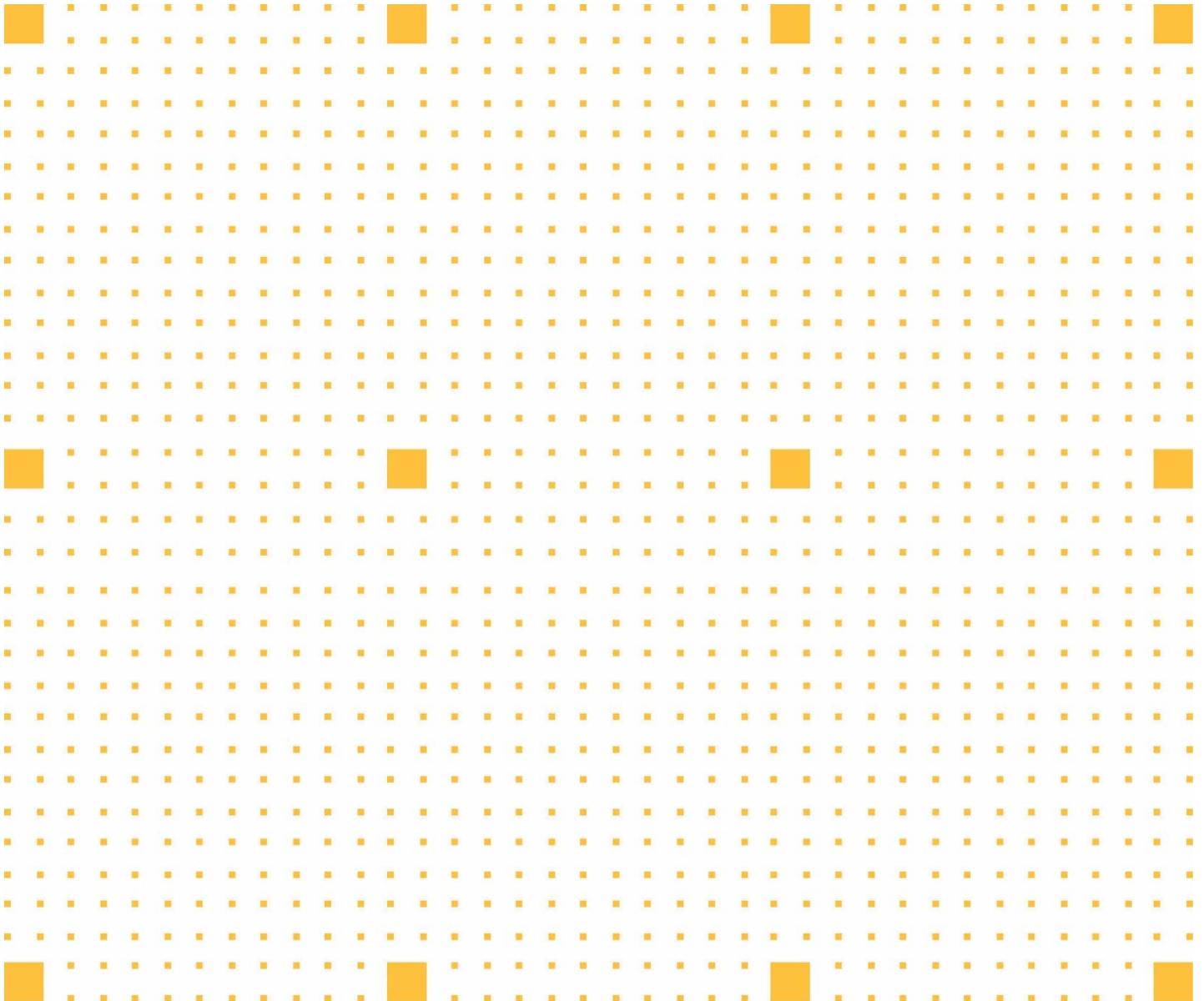


# Construction Environmental Management Plan (CEMP)

Project: Jindabyne Education Campus SSD 15788005

Address: 207 Barry Way Jindabyne NSW 2627

Job No: SN105 Jindabyne



Rev: 5 | May 2024

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**EMP Preparation Checklist – Condition B 14 & B15 – CEMP**

Requirement	Plan Reference	Yes/No/Not Applicable
<b><i>Document preparation and endorsement</i></b>		
Has the EMP been prepared in consultation with all relevant stakeholders as per the requirements of the conditions of consent?	A.5 (CTPMSP), A.6 (CNVMSP), A.7 (CSWMSP), A.8 (CWMSP), A.9 (ACHMSP), & A.10 (BMSP) & Jindabyne Aero Club	Yes
Have the views of the relevant stakeholders been taken into consideration? Have appropriate amendments been made to the EMP and does the EMP clearly identify the location of any changes?	Section 5 mitigation strategies reflect sub-plans	Yes
Has the EMP been internally approved by an authorised representative of the proponent or contractor?	CEMP to be approved under Section 1.1	Yes
The EMP has been prepared in regards to the relevant guidelines, including but not limited to the Environmental Management Plan Guideline: Guideline for Infrastructure Projects (DPIE April 2020).	Section 4.4 Policy Objectives	Yes
<b><i>Version and content</i></b>		
Does the EMP describe the proponent's Environmental Management System (EMS) (if any), and identify how the EMP relates to other documents required by the conditions of consent?	Section 4.3 Appendix A.2	Yes
Does the EMP include the required general content and version control information?	Section 1.2 A.5 (CTPMSP), A.6 (CNVMSP), A.7 (CSWMSP), A.8 (CWMSP), A.9 (ACHMSP) & A.10 (BMSP) – Document Control sections in sub-plans	Yes
Does the EMP have an introduction that describes the project, scope of works, site location and any staging or timing considerations?	Sections 4.1, 4.2 & 4.2.1	Yes
Does the EMP reference the project description?	Sections 4.2 & 5.4 A.3 & A.14	Yes
Does the EMP reference a Community and Stakeholder Engagement Plan (or similar) or include community and stakeholder engagement actions (if required)?	Section 5.18	Yes
Have all other relevant approvals been identified? Has appropriate information been provided regarding how each approval is relevant?	Section 1.1 A.5 (CTPMSP) & A.7 (CSWMSP)	Yes

Requirement	Plan Reference	Yes/No/Not Applicable
Has the environmental management structure and responsibilities been included?	Sections 4.8 & 5.3	Yes
Does the EMP include processes for training of project personnel and identify how training and awareness needs will be identified?	Sections 4.4 & 5.1	Yes
Does the EMP clearly identify the relevant legal and compliance requirements that relate to the EMP?	Section 4.7.3 A.5 (CTPMSP), A.6 (CNVMSP), A.7 (CSWMSP), A.8 (CWMSMP), A.9 (ACHMSP) & A.10 (BMSP) – Relevant compliance, legislative requirements, criterion, etc. identified in sub-plans	Yes
Does the EMP include all the conditions of consent to be addressed by the EMP and identify where in the EMP each requirement has been addressed?	Section 3	Yes
Have all relevant guidelines, policies and standards been identified, including details of how they are relevant?	Section 4.7.3 A.5 (CTPMSP), A.6 (CNVMSP), A.7 (CSWMSP), A.8 (CWMSMP), A.9 (ACHMSP) & A.10 (BMSP) – Relevant guidelines, policies and standards identified in sub-plans	Yes
Is the process that will be adopted to identify and analyse the environmental risks included?	Sections 5.3 & 6	Yes
Have all the environmental management measures in the EIA been directly reproduced into the EMP?	Section 5 A.5 (CTPMSP), A.6 (CNVMSP), A.7 (CSWMSP), A.8 (CWMSMP), A.9 (ACHMSP) & A.10 (BMSP) – Management/ mitigation measures outlined in sub-plans	Yes
Have any additional environmental management measures been included in the EMP?	Section 6	Yes
Have environmental management measures been written in committed language?	Section 5	Yes
Have project environmental management measures, including hold points, been identified and included?	Section 4.9	Yes
Are relevant details of environmental monitoring that will be carried out included?	Section 5.5.2 & 5.12.5	Yes

Requirement	Plan Reference	Yes/No/Not Applicable
Have the components of any environmental monitoring programs been incorporated?	A.5 (CTPMSP), A.6 (CNVMSP), A.7 (CSWMSP), A.8 (CWMSMP), A.9 (ACHMSP) & A.10 (BMSP) – Monitoring, recording and reporting requirements outlined in sub-plans	Yes
Are environmental inspections included?	Section 6.2	Yes
Does the EMP document all relevant compliance monitoring and reporting requirements for the project?	Section 6.2.2	Yes
Does the EMP describe the types of plans or maps (such as environmental control maps) that will be used to assist with the management of environmental matters on site?	A.5 (CTPMSP), A.6 (CNVMSP), A.7 (CSWMSP), A.8 (CWMSMP), A.9 (ACHMSP) & A.10 (BMSP) – Environmental control plans provided in sub-plans	Yes
Does the EMP list environmental management documents?	A.2, A.4, A.5 (CTPMSP), A.6 (CNVMSP), A.7 (CSWMSP), A.8 (CWMSMP), A.9 (ACHMSP), A.10 (BMSP) & A.13	
Is an auditing program referenced?	Section 6.2	Yes
Does the EMP include the incident notification and reporting protocols that comply with the relevant conditions of consent?	Section 6	Yes
Does the EMP identify the project role/position that is responsible for deciding whether an occurrence is an incident?	Sections 4.8 & 6	Yes
Does the EMP describe a corrective and preventative action process that addresses the requirements?	Sections 6.2.1 & 6.2.2	Yes
Does the EMP include details of a review and revision process that complies with the requirements?	Sections 1 & 4.4	Yes

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## 1 Document Information

### 1.1 Review & Approval

Review			
Position	Name	Sign	Date
Project Manager / Contracts Authorised Person	Daniel Spirit Jones		
Services Manager	Luke Carroll		
Contracts Administrator	Patrick Fishburn		
Contracts Administrator	Ben Marshall		
Site Manager	Jason Henselis		
Foreman	John McBeath		
Foreman	Adrian George		
Foreman	Bevan Talbot		
Site Safety Officer	Rachel Deakes		
Project Engineer	Rohan Dubois		
Site Engineer	Matt Merrick		
Site Engineer	Taimur Khan		
Site Engineer	Nithin Ravi		
CW	Tm Lewis		
CW	Allan Shennan		
Construction Manager	Mick Parker		
NSW Environmental & Sustainability Manager	David Eckstein		
Approval			
Project Manager	Daniel Spirit Jones		

### 1.2 Change Information

Change Information			
Revision	Description	Issued by	Issue date



Change Information			
0	Draft	MB	12 Oct 2022
1	Preliminary	MB	28 Oct 2022
1.1	For Issue to DPE	MB	10 Nov 2022
1.2	For Issue to DPE	MB	10 Nov 2022
1.3	For Issue to DPE	MB	10 Nov 2022
2	<p>This revision has been created to ensure alignment with the Environmental Management Plan Guideline: Guideline for Infrastructure Projects (DPIE April 2020). Updates include</p> <ul style="list-style-type: none"> <li>- Title page</li> <li>- EMP Preparation Checklist</li> <li>- Section 3</li> <li>- Section 4.1</li> <li>- Section 4.2</li> <li>- Section 4.4</li> <li>- Section 5.1</li> <li>- Section 5.18</li> <li>- Section 6.3</li> <li>- Appendices A1, A2</li> </ul>	DSJ	23 Mar 2023
3	<p>Revisions to Suit SSD Audit Review</p> <ul style="list-style-type: none"> <li>- Long term Dust Mitigation Included (5.7.3)</li> <li>- Jindabyne Aero Club Included (5.11, A.15)</li> <li>- Environmental Monitoring revised to Weekly (6.2)</li> <li>- A.14 Site Layout Plan revised</li> <li>-</li> </ul>	DSJ	19 May 2023
4	Revised CSWMSP	DSJ	24 February 2024
5	<p>Revisions to the following;</p> <ul style="list-style-type: none"> <li>- 5.8.2 Mitigation Strategies updated.</li> <li>- HSE Project Risk Assessment Updated</li> <li>- Revised CSWMSP</li> <li>- Revised Site Layout</li> </ul>	DSJ	15 July 2024

## 2 Definitions

The following definitions and abbreviations have been used in this Environmental Management Plan. Further definitions and abbreviations are provided in referenced procedures and plans.

BIM360 Field	Cloud based QHSE field management software application designed specifically for the construction industry.
CEMP	Construction Environmental Management Plan (this document)
EPA	State Environment Protection Authority
ESD	Ecologically Sustainable Development
HSE	Health, Safety & Environment
HY	Hansen Yuncken Pty Ltd
HYWAY	An information management platform developed by HY utilising Microsoft SharePoint
JEC	Jindabyne Education Campus
NC	Non-Conformance
NGER	National Greenhouse and Energy Reporting
NVMP	Noise and Vibration Management Plan
OEI	Office of Environment and Heritage
PLN	HY Plan
PMP	Project Management Plan
POEO	The Protection of the Environment Operations Act
PROJ	Project Management
REO	Regional Environmental Officer
RMS	Roads and Maritime Services
S/C	Subcontract(s) or Subcontractor(s) as the context requires
SM	Site Manager
SSC	Site Safety Coordinator
SSA	Site Safety Advisor
SWMS	Safe Work Method Statement
CTPMSP	Construction Traffic and Pedestrian Management Sub Plan
CNVMSP	Construction Noise & Vibration Management Sub Plan
CWMSP	Construction Waste Management Sub Plan
CSWMSP	Construction Soil & Water Management Sub Plan
ACHMSP	Aboriginal Cultural Heritage Management Sub Plan
BMSP	Biodiversity Management Sub Plan

## 3 Compliance with SSD-15788005 Conditions

Condition ID	Requirement	Reference
<b>B14</b>	Management plans required under this consent must be prepared having regard to the relevant guidelines, including but not limited to the Environmental Management Plan Guideline: Guideline for Infrastructure Projects (DPIE April 2020).	4.1
B15	Prior to commencement of construction and demolition of internal roadways, the Applicant must submit a Construction Environmental Management Plan (CEMP) to the Certifier and provide a copy to the Planning Secretary for information. The CEMP must include, but not be limited to, the following:	
B15(a)	(a) Details of:	
B15(a)(i)	(i) hours of work	4.2.1
B15 (a)(ii)	(ii) 24-hour contact details of site manager	4.2.2
B15 (a)(iii)	(iii) management of dust and odour to protect the amenity of the neighbourhood	5.7
B15 (a)(iv)	(iv) external lighting in compliance with AS 4282-2019 Control of the obtrusive effects of outdoor lighting	5.17 & A.13
B15 (a)(vi)	(v) community consultation and complaints handling as set out in the Community Communication Strategy required by condition B9	5.18
B15 (b)	(b) An unexpected finds protocol for contamination and associated communications procedure to ensure that potentially contaminated material is appropriately managed	5.11.8
B15 (c)	(c) An unexpected finds protocol for Aboriginal and non-Aboriginal heritage and associated communications procedure	5.11.8
B15 (d)(i)	(i) Construction Traffic and Pedestrian Management Sub-Plan (see condition B16 and B22)	A.5
B15 (d)(ii)	(ii) Construction Noise and Vibration Management Sub-Plan (see condition B17)	A.6
B15 (d)(iii)	(iii) Construction Waste Management Sub-Plan (see condition B18)	A.8
B15 (d)(iv)	(iv) Construction Soil and Water Management Sub-Plan (see condition B19)	A.7
B15 (d)(v)	(v) Aboriginal Cultural Heritage Management Sub-Plan (see condition B20)	A.9
B15 (d)(vi)	(vi) Biodiversity Management Sub-Plan (see condition B21)	A.10

For all SSD-15788005 Consent Conditions, refer to Appendix A.10

## 4 Commitment & Policy

### 4.1 Scope & Application

The Construction Environmental Management Plan (CEMP) has been developed to demonstrate that the proposed Works will be executed in accordance with legislated safety and environmental requirements with minimal inconvenience to stakeholders including neighbours and the general public.

Hansen Yuncken, appointed as Principal Contractor in accordance with NSW WHS legislation, complies with the requirements detailed in this Construction Environmental Management Plan, as well as the requirements of any other legislation or statutory bodies.

The proposed development includes the design and construction of a Core 21 Primary School inclusive of; learning spaces, ancillary & sport spaces, hall, library, administration facilities, canteen, special programs space and unique areas. It also includes the design and construction of a Stream 2 High School inclusive of; general and specialist learning spaces, ancillary & sport spaces, library, administration facilities, canteen, indoor multi-purpose court and outdoor landscaped areas.

A combination of offsite and onsite construction techniques will be used to deliver a high quality, future focused innovative, state of the art school. Meeting the current and future school and community needs whilst complying with the requirements as detailed in the Educational Facilities Standards and Guidelines (EFSG) and providing a high level of end user satisfaction.

This CEMP has been generated to satisfy the requirements of “ISO 14001:2015, Environmental management systems – Requirements with guidance for use” and the “NSW Government Environmental Management System Guidelines – 3rd edition”. It establishes guidelines and controls for all HY activities that may impact the surrounding environment for the duration of the works, including but not limited to, air, water, land, natural resource use & waste, flora & fauna, and their respective interrelationship. Furthermore, it has been designed to embrace the environmental management requirements, both in terms of the Contract and generally, to demonstrate HY as an environmentally responsible organisation to the broader community.

In preparing this CEMP Hansen Yuncken consider that the intent of the Environmental Management Plan Guideline: Guideline for Infrastructure Projects (DPIE April 2020) have been met.

## 4.2 Project Description

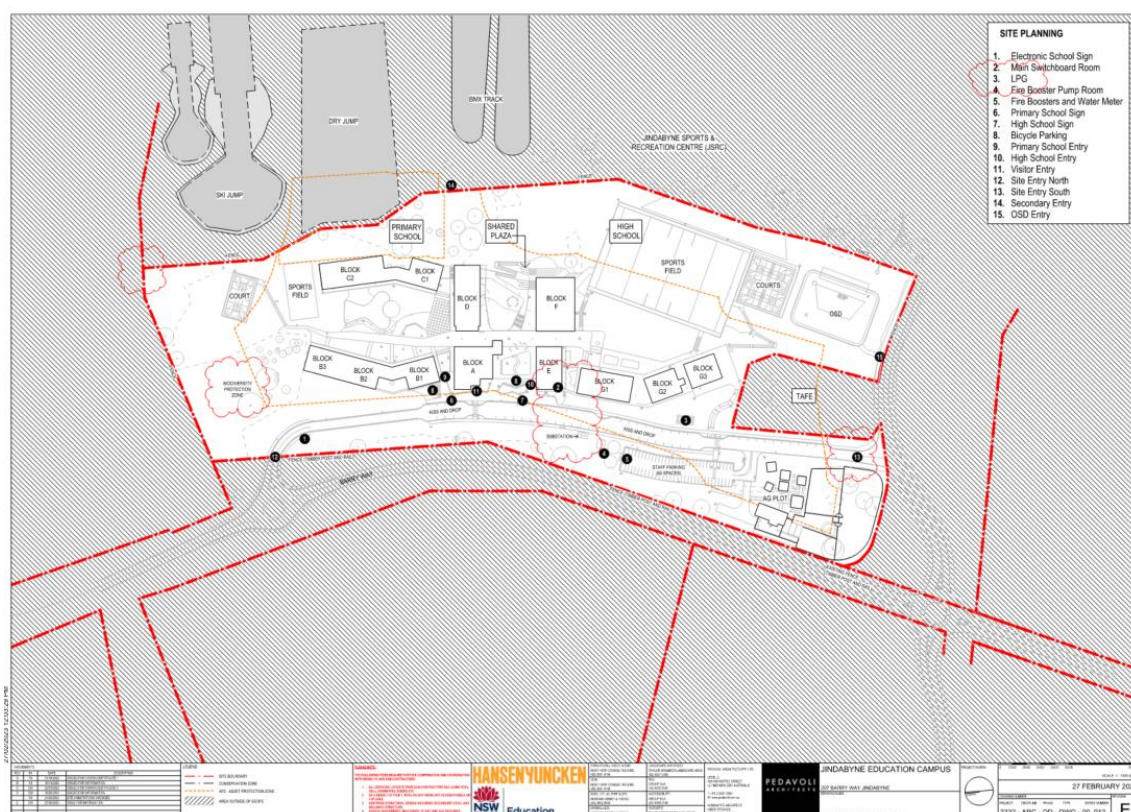
The project will deliver a new primary and high school at 207 Barry Way, Jindabyne NSW 2627 to cater for up to 515 students from Kindergarten to Year 6 and 410 students from Year 7 to Year 12. 925 total students with the capacity for expansion in the future.

The new Primary School will be located primarily in the northern portion of the site whilst the new High School will be to the south. While the schools are inherently separate entities, with separate student entries, opportunities for integration are provided in a central shared plaza with co-located school administration facilities. The outdoor learning space is activated by the school canteen (shared) and separate core facilities including the primary school hall and library, and the high school gym and library, and provides opportunities for shared community use.

The new Primary School will provide for a Core 21 school. This will comprise of 20 home base units and 2 support learning unites, administration and staff facilities, covered outdoor learning area (COLA), hall, staff and student amenities, out of school care facilities, library and special programs. Landscaped areas include active and passive open space play areas, a sports field and a games court.

The new High School will provide for a Stream 2 high school. This is to comprise of 20 general/specialised learning spaces and support learning units, administration and staff facilities, covered outdoor learning areas (COLA), hall, staff and student amenities, library an agricultural learning unit. Landscaped areas include active and passive open space play areas, a sports field and multipurpose games courts.

A new access driveway is proposed off Barry Way along the Western Boundary of the site and includes car parking, bus and private vehicle drop-off zones and delivery zones.



Site Layout Plan





Site Location Plan

#### 4.2.1 Hours of Work

The proposed hours of work for the project are as follows:

- Between 7am and 6pm, Mondays to Fridays inclusive; and
- Between 8am and 1pm, Saturdays.
- No work may be carried out on Sundays or public holidays.

*The proposed hours align to Condition C4 of SSD-15788005.*

The proposed restricted hours of work for the project, provided that noise levels do not exceed the existing background noise level plus 5dB, which aligns with Condition C5 of SSD-15788005, are as follows:

- Between 6pm and 7pm, Mondays to Fridays inclusive; and
- Between 1pm and 4pm, Saturdays.

The proposed hours of work for the project for specific construction activities such as rock breaking, rock hammering, sheet piling, pile driving and similar activities, which align to Condition C8 of SSD-15788005, are as follows:

- Between 8am to 12pm and 1pm to 5pm, Monday to Friday; and
- Between 9am to 12pm, Saturday

As per Condition C6 of SSD-15788005, Construction activities may be undertaken outside of the hours outlined in Conditions C4 and C5 if required:

- By the Police or a public authority for the delivery of vehicles, plant or materials; or
- In an emergency to avoid the loss of life, damage to property or to prevent environmental harm; or
- Where the works are inaudible at the nearest sensitive receivers; or
- For the delivery, set-up and removal of construction cranes, where notice of the crane-related works is provided to the Planning Secretary and affected residents at least seven days prior to the works; or
- Where a variation is approved in advance in writing by the Planning Secretary or her nominee if appropriate justification is provided for the works.

#### 4.2.2 24 Hour Contact Details

The 24-hour contact details for the project is as follows:

Daniel Spirit Jones (Project Manager)

M: 0402 893 643

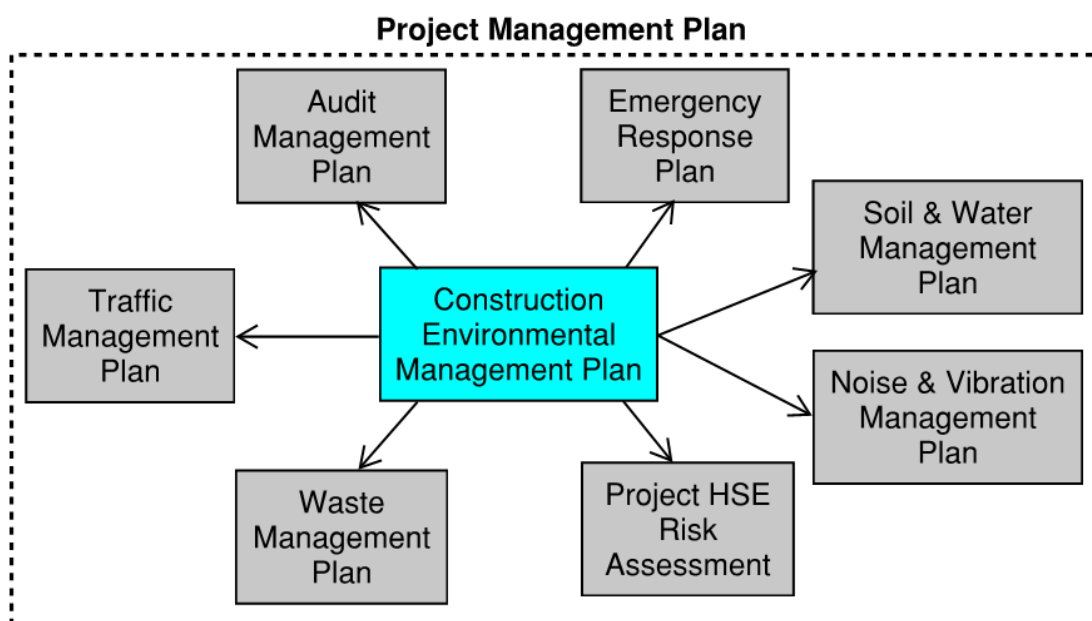
DSpiritJones@hansenyuncken.com.au

### 4.3 CEMP Interrelationship with PMP

This CEMP forms part of Hansen Yuncken's Environmental Management and interfaces with the company's Quality & WHS Management Systems (refer Appendix A.2). Furthermore, this CEMP is an integral part of Jindabyne Education Campus SSD 15788005 PMP. The following plans referenced within this CEMP form part of the overall PMP for the project and contribute to the environmental management procedures:

- **Project Site Induction** – Ensures all workers onsite are aware of the Construction Environmental Management Plan & also trains all workers onsite on the requirements for controlling dust & windblown debris, dirt & debris on public roads, protection of stormwater drains, tool & equipment washout, chemical spills, noise disturbance, waste collection & disposal of rubbish, food scraps & excess concrete.
- **Project HSE Risk Assessment** – Identifies what subcontractor onsite are impacted by or the risk of; air quality/dust, archaeology & cultural heritage, chemical spill, flora & fauna, littering, noise disturbance, stormwater contamination & watercourse pollution each month. This will be monitored through task observations scheduled for each month.
- **Noise & Vibration Management Plan** – Identifies mitigation methods to minimise the risk of noise & vibration to the workers onsite and the surrounding properties.

- **Traffic & Pedestrian Management Plan** – Summarises how construction and pedestrian traffic will be managed on the project to minimise the impact on the existing facility and the neighbours surrounding to the project.
- **Site Layout Plan** – Identifies the location of sediment controls, access routes, truck washout, location of site bins, spill kits, concrete washout.
- **Emergency Response Plan** – Outlines the process to manage the following environmental emergencies; asbestos exposure, water pollution, fire, major fuel spill & chemical spill
- **Audit Management Plan** – Describes the frequency of internal and external environmental audits and the process for closing out any non-conformances raised.



## 4.4 Policy & Objectives

The HY Environmental Policy Statement provides the framework for the development of this CEMP (refer Appendix A.1), and details the company's commitment to "providing a high quality environment, which meets the requirements and expectations of; Clients, Statutory Authorities, Employees and Community Groups", through the application of "sustainable development principles, to continually improve environmental performance in minimising impact on, and pollution of, the environment during the construction process".

The objective of the Construction Environmental Management Plan is to:

- Provide an EMP in accordance with the relevant guidelines, inclusive of but not limited to the Environmental Management Plan Guideline: Guideline for Infrastructure Projects (DPIE April 2020).
- Satisfy Client requirements related to environmental performance, set out in the Specification for the Works.
- Incorporate and provide mitigation strategies for environmental issues arising from site activities and as detailed in the Jindabyne Education Campus SSD 15788005 Environmental impact assessment document (Environmental Impact Statement SSD-15788005 by Mecone)
- Encourage best practice environmental management through planning, commitment and continuous improvement;



- Prevent and minimize adverse impacts on the environment;
- Identify the potential for, and respond to, environmental incidents and emergency situations and take corrective actions;
- Identify and control possible environmental hazards with the works and HY activities;
- Identify and protect any special environmental characteristics of the site including cultural heritage significance;
- Define roles and responsibilities and allocate the necessary resources
- Ensure environmental training and awareness programmes are provided to employees and subcontractors;
- Establish mechanisms to monitor, evaluate and report progress.

The HY Environment Policy commits the company to achieve the following goals:

- Develop and promote a culture of environmental leadership, responsibility and continual improvement across the HY business;
- Audit, monitor and ensure compliance with environmental legislative and regulatory obligations and other environmental commitments;
- Utilise the resources of HY to lead the way in defining and achieving best environmental practice; and
- Demonstrate compliance with the conditions as set out in the Development Conditions SSD-15788005.
- Advance and disseminate environmental knowledge and applied environmental management through training, research and engagement with the wider community.

A copy of the Environment Policy is contained within the PMP and displayed at the project / site office and induction sheds. HY recognises this implementation will involve effective training of personnel to ensure they fully understand their responsibilities to comply with and monitor the management system. In addition, all site workers are consulted on HY environmental policies & procedures through the following mechanisms; site induction, notice board, site inspections, prestart meetings, subcontractor meetings, team meetings, toolbox talks.

## 4.5 Targets

### 4.5.1 Objective: Comply with all environmental legislation

**KPI:** Number of identified breaches of State or Commonwealth Environmental legislation

**Target:** Nil for duration of project.

**Responsibility:** HY & Subcontractors

### 4.5.2 Objective: Minimise impacts on the environment

**KPI:** Number of significant environmental incidents causing serious harm to the environment

**Target:** Nil for duration of project.

**Responsibility:** HY & Subcontractors

#### 4.5.3 Objective: Conduct environmental site inspections to validate environmental conformance

**KPI:** Schedule and undertake regular site inspections

**Target:** > 90% of scheduled HSE inspections

**Responsibility:** HY

#### 4.5.4 Objective: Minimise and manage environmental complaints

**KPI:** Consult with impacted neighbours and promptly address all complaints

**Target:** ≤ 1 complaint per significant construction milestone

**Responsibility:** Colliers

## 4.6 ESD Vision & Principles

HY's Environmentally Sustainable Design (ESD) vision and principles involves:

- Identification and prioritisation of environmental risk based on AS/NZS ISO 31000:2009 and Guidelines HB158:2010, using qualitative likelihood vs. consequence methods.
- Development of management systems which build knowledge and capacity on environmental issues, principles and sustainable behaviours including training and communication.
- Reduced energy and water consumption as well as waste minimisation during the construction process.
- Environmental training and management of trade contractor's activities to ensure that the project ESD objectives are obtained.
- Efficient and effective use of natural resources in a way that maintains the ecological processes on which life depends
- Sustainable use of renewable energy resources.

HY's ESD vision and Principles align with the ESD objectives of the project which is targeting a certified 4 Star Green star rating through the consideration of key ESD strategies in design (as per the ESD Detailed Design Report prepared by Steensen Varming). As such, this project provides an opportunity for HY to expand its practical and theoretical knowledge of ESD to a level that is considered 'best practice' status.

## 4.7 Environmental Planning

In accordance with the contractual requirements, applicable legislation, and in keeping with proper environmental practices, Hansen Yuncken has instituted a methodology which is reflective of and observes the requirement, as set out in ISO 14001:2015.

### 4.7.1 Environmental Aspects & Impact

All activities related to the Jindabyne Education Campus SSD 15788005, which are enacted by or on behalf of Hansen Yuncken, are identified in the "Project HSE Risk Assessment" (refer Appendix A.4). For each activity the environmental aspects and associated actual and potential impacts are identified as they relate to the following environmental elements:

- Location and Land Use;
- Noise & Vibration;
- Traffic and Access;

- Air Quality;
- Soils, Erosion and Water Quality;
- Terrestrial Flora and Fauna;
- Cultural Heritage;
- Site Contamination; and
- Waste Management.

Environmental impacts are detailed in the “Project HSE Risk Assessment” and assessed for significance by using the Risk Matrix. Each identified potential impact is rated (Risk rating) in relation to its predicted likelihood and consequence. Environmental Impacts as applicable to the Jindabyne Education Campus SSD 15788005 are summarised in the “Environmental Risk Register” contained within this CEMP (Section 5.3).

#### **4.7.2 Work Method Statements**

For each activity rated as a significant risk (i.e., Risk class >M/Medium) to the environment, a further Risk assessment is undertaken with the additional controls identified and contained within a Work Method Statement. This document details the; steps involved, hazards, control measures and persons responsible associated with the higher risk activity. A Toolbox talk is then completed with the relevant workers that will be completing the task to ensure that they comply with the Work Method Statement.

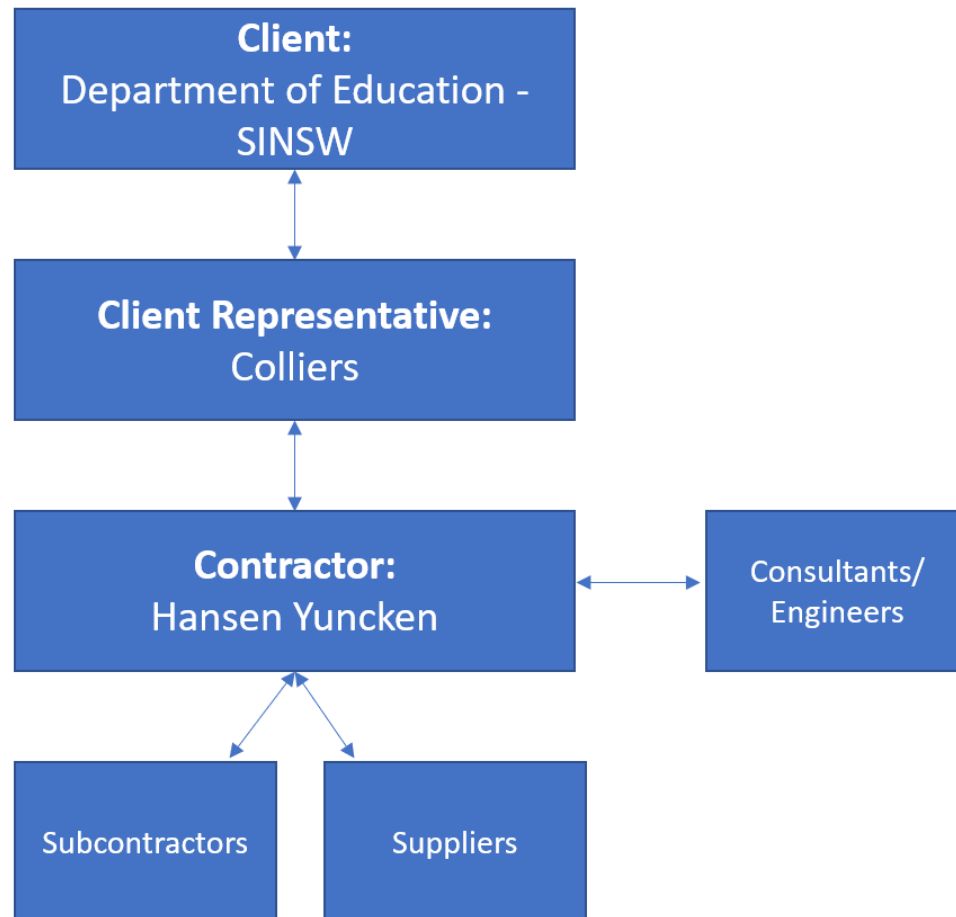
#### **4.7.3 Legal Compliance and Other Requirements**

Hansen Yuncken has developed a procedure (“Legislation Standards and Codes of Practice”), available on HYWAY to identify legal and other requirements that are applicable to the Jindabyne Education Campus SSD 15788005 and to ensure the accessibility of the information. The procedure shall be referenced and is applicable to those activities and functions that have the potential to interact with the environment.

Furthermore (URL) links are supplied on HYWAY to regulatory body websites and relevant NSW legislation relevant to environmental aspects and management of the same.

## 4.8 Roles and Responsibilities

The below flow chart summarises the organisation structure for communication and reporting between Hansen Yuncken, it's suppliers/subcontractors and the principal.



Hansen Yuncken will collaborate with the project team to provide the following in ensuring we are achieving sustainable environmental management for the duration of the project:

- Engagement with project stakeholders including consultants and contractors
- Notifications and communications with adjacent property occupants and owners advising of the Works;
- Formal notices of road closures and related matters;
- Conveying enquiries and complaints regarding the works (including but not limited to traffic, dust and noise) to the client;
- Liaising with key stakeholders and local authorities regarding the works; and
- Environmental issues related to the works.

A summary of the roles and responsibility of each stakeholder with regards to environmental management for the project is summarised below:

- Client Representative – provides a medium of communication between the client and the contractor and is responsible for all community consultation and communication
- Contractor – responsible for delivering the project in accordance with the relevant legislation, including the enforcement of the CEMP for its subcontractors and suppliers.

- Consultants/Engineers – provide expert knowledge into the generation of aspects of the CEMP in line with industry standards and the relevant legislations.
- Subcontractor/Suppliers – responsible for abiding by the requirements of the CEMP when carrying out their contract works.

## 4.9 Environmental Hold Points

The below hold points relate to the environmental management of the Jindabyne Education Campus project site as per SSD-15788005:

- C19(a): Street trees must not be trimmed or removed unless it forms a part of this development consent or prior written approval from Council is obtained or is required in an emergency to avoid the loss of life or damage to property.
- C29: (Unexpected Finds Protocol – Aboriginal Heritage) In the event that surface disturbance identifies a new Aboriginal object, works must halt in the immediate area and shall only recommence with the written approval of the Planning Secretary.
- C30: (Unexpected Finds Protocol – Historic Heritage) If any unexpected archaeological relics are uncovered during the work, then works must cease immediately in that area and may only recommence with the written approval of the Planning Secretary.

## 5 Implementation

### 5.1 Environmental Training & Awareness

All HY and S/C employees shall receive an induction into the project in accordance with the Site Induction procedure including completing the Site Induction Record Form.

The induction shall include the requirements for the conduct of activities which have the potential for significant environmental impacts on the project which shall be outlined in the project specific Site Induction Handbook.

This document applies to all HY and S/C employees, environmental training and awareness is the responsibility of every person working on and associated with the project.

The training and awareness program that has been developed to ensure personnel are adequately trained to competently fulfil their responsibilities under the EMP. The training and awareness program has been tailored to the roles of individuals to ensure personnel to ensure;

- They are aware of the key environmental aspects, impacts and risks, the conditions of consent and approved EMP.
- They are aware of relevant legislative responsibilities, including any penalties for failing to meet these responsibilities.
- They have the required skills and competence to perform the relevant environmental management, reporting, monitoring and community engagement functions of their role.

The environmental training and awareness program includes:

- site induction and toolbox talks.
- environmental incident and emergency response training.
- training in the implementation of environmental management measures.

### 5.2 Environmental Impacts of Subcontractor Activities

The environmental impacts of subcontractor activities shall be assessed during the S/C pre-award meeting in accordance with pre-award meeting procedure and the project HSE risk assessment. The general structure of the environmental management of the following risks is contained within this section of the report under the following structure:

- Likely Impacts – outlines the impacts of the environmental issues that have been assessed in the environmental risk register
- Mitigation Strategies – outline the procedures/actions that will be taken to minimise the possibility of the impacts outlined above from occurring.

## 5.3 Environmental Risk Register

Environmental Risk Register Summary & Responsibilities		
Environmental Issue	Risk to Project	Responsible Personnel
<p><b><u>Location &amp; Land use</u></b></p> <p>Residential and other properties may be impacted with construction works due to construction noise and dust</p>	Low	PM
<p><b><u>Noise &amp; Vibration</u></b></p> <p>Construction of the development may result in short term impacts during the project due to the use of heavy machinery, drilling and plant as well as construction personnel and vehicle movements.</p>	Low	PM / SM
<p><b><u>Traffic &amp; Access</u></b></p> <p>During construction there will be impacts to traffic on public roads surrounding the project from construction vehicles and deliveries for site.</p>	Medium	PM / SM
<p><b><u>Air Quality</u></b></p> <p>During the earthworks stage of the project, there is a risk of poor air quality generated by the construction works.</p>	Low	SM
<p><b><u>Soils, Erosion, &amp; Water Quality</u></b></p> <p>There is a risk of soil leaving the site and potentially contaminating the stormwater system in the short-term during the earthworks stage of the project.</p>	Low	SM
<p><b><u>Terrestrial Flora &amp; Fauna</u></b></p> <p>The removal of trees during construction works poses minimal risk to landscaped species throughout the area.</p>	Low	PM / SM
<p><b><u>Cultural Heritage</u></b></p>		

Environmental Risk Register Summary & Responsibilities		
It is unlikely that construction works will impact any undisturbed aboriginal artefacts given that an Aboriginal Cultural Heritage Assessment prepared by Eco Logical Australia concludes that no Aboriginal heritage sites will be harmed by the proposed development and that there are no archaeological mitigation measures required.	Low	PM / SM

PM - Project Manager, SM - Site Manager, FM - Foreman, S/C – Subcontractor, PCA - Private Certifier

5.4 Location and Land Use

5.4.1 Site Location

The site is located at 207 Barry Way, Jindabyne, in the local government area of Snowy Monaro Regional Council. The site is formally described as Lot 101 DP1019527. The site is irregular in shape and has an area of approximately 90,000m².

Immediately surrounding the development includes the Jindabyne Sport and Recreation Centre to the east, an Industrial Estate to the south-west, the Jindabyne Aero Club to the West across Barry Way, and rural land to the north and south. There is also a TAFE NSW construction development to the south of the site.

The site contains various flora and fauna, including a Biodiversity area to the north of the site. There are 3 dwellings on the site which are nominated to be demolished. The site is otherwise cleared and vacant as per the image below.





The site is situated approximately 2km southwest of the Jindabyne Town Centre (JTC), 62km southwest of Cooma and 174km south of Canberra Central Business District (CBD) (refer to Appendix A.3 for further information regarding site location).

## 5.4.2 Likely Impacts

The construction works would be short term in nature and construction activities would be carried out with due diligence, duty of care and best management practices. Given the location of residential and other properties in vicinity of the works area, some impacts associated with construction traffic, noise/vibration and dust are likely to affect adjacent residents. These likely impacts will be addressed below.

## 5.4.3 Mitigation Strategies

- The neighbouring landowners are to be consulted regarding the construction works, predicted program and any access requirements.
- Land disturbance during construction is to be limited to that required to undertake the construction works
- Construction works to be undertaken in consideration of adjacent vegetation
- Areas disturbed during construction to be returned to the pre-construction condition
- The consent approval stipulates working times to minimise the impact on the community being generally Monday to Friday 7am-6pm, Saturday 8am-1pm, no work on Sundays or public holidays.

## 5.5 Noise and Vibration

### 5.5.1 Likely Impacts

Construction of the proposed development will result in short term noise impacts during the construction period. The predicted noise levels during the construction phase have been identified in the project Construction Noise & Vibration Management Plan along with associated mitigation strategies provided to minimise these impacts (refer Appendix A.6 for the Construction Noise & Vibration Management Plan), in accordance with condition B15(d) and B17 of SSD-15788005.

### 5.5.2 Mitigation Strategies

Construction noise and vibration will generally be managed in line with the Construction Noise and Vibration Management Sub-Plan (CNVMP). Noise and vibration mitigation measures include:

- Implement best-practice general mitigation measures onsite, aimed at reducing the effects of construction noise and vibration, such as,
  - regular toolbox talks to reinforce the need to minimise noise and vibration,
  - regular identification of noisy activities and adoption of improvement techniques.
  - Restricting construction activities to the hours specified under conditions C4, C5 and C8 of SSD-15788005.
  - Taking reasonable and feasible measures to minimise noise and vibration effects from plant and equipment where possible.
- Noise monitoring at the commencement of excavation and structural works to confirm measured levels are consistent with the predictions in the acoustic assessment, and to verify that the mitigation procedures are appropriate.
- Issue project updates to stakeholders on current and upcoming works, including advance warning of potential disruptions and noise intensive activities.

- Develop procedures for receiving and addressing complaints from affected stakeholders. Complaints to be investigated as soon as practicable and feasible measures to minimise noise will be implemented if required, in accordance with condition B17(f) of SSD-15788005.

## 5.6 Traffic & Access

### 5.6.1 Likely Impacts

Construction of the new site facilities shall see some increase in traffic in the local area. The increased traffic is not predicted to have an impact on local traffic flow, and only a minor inconvenience to local road users is expected. Construction vehicle routes have been developed with the intention of minimising the impact of construction traffic on the local streets in the immediate vicinity. Access to site will primarily be via Barry Way. In accordance with Condition B15(d) and B16(a)-(c) of the SSD-15788005, the management of construction traffic developed as a result of these works is outlined in the Construction Traffic and Pedestrian Management Plan (refer Appendix A.5).

### 5.6.2 Mitigation Strategies

The Construction Traffic and Pedestrian Management Plan (CTPMP) details the measures and strategies to be undertaken during construction works to minimise the effects on the surrounding road network, and to ensure the safety and efficiency of the community, workers, and road users, including:

- Construction activities and deliveries shall be restricted to the hours dictated in the consent SSD-15788005.
- All vehicle drivers will need to comply with the Driver Code of Conduct (in accordance with Condition B22 of SSD-15788005 and detailed within the CTPMSP).
- Access to site will primarily be via Barry Way.
- Wire mesh temporary fencing will be erected around the perimeter of the site and maintained for the duration of the project to keep out unauthorised persons, with access gates closed outside of construction hours.
- Traffic management shall be undertaken in accordance with the methodology outlined within the Traffic Guidance Scheme (Section 4 of the CTPMSP).
- Traffic and non-vehicle related road users will be directed around the worksite in order to physically separate the road user from any hazards within the worksite.
- Deliveries will be scheduled to prevent queuing by ensuring adequate timeframes between trucks arriving and leave site.
- All vehicles transporting loose materials will have their loads covered or secured to prevent large items, excess dust or dirt particles depositing onto the road during travel to and from site. HY will monitor roads leading to and from the site and take necessary steps to rectify any road deposits caused by site vehicles.
- Public roads and access points will not be obstructed by any materials, vehicles, refuse skips or the like.
- Traffic Controllers will be used to supervise vehicle movements and for pedestrian and cyclist management when necessary during construction activities.
- HY will induct all subcontractors to ensure that procedures are met for vehicles entering and exiting the construction site.

A risk assessment has also been conducted as part of the CTPMP identifying the hazards and risks associated with the works and to determine the controls required for the protection of road workers and road users.

## 5.7 Air Quality & Dust Control

In accordance with condition B15a (iii) of SSD-15788005, repeated in part as follows; the Construction Environmental Management Plan (CEMP) must include, but is not limited to; (iii) management of dust and odour to protect the amenity of the neighbourhood. This section of the CEMP addresses this condition, outlining the likely impacts of air quality and dust control for the various aspects of the construction works, along with the mitigation strategies that will be implemented to minimise these impacts on the neighbourhood.

### 5.7.1 Likely Impacts

The main impact of air quality during construction is expected to arise from the generation of airborne localised dust associated with earthworks. Given the proximity to neighbouring properties and existing buildings, there is the potential for impact by dust, particularly during windy conditions.

### 5.7.2 Mitigation Strategies

- Construction vehicles and equipment to be suitably serviced prior to commencement of construction activities and all necessary maintenance to be undertaken during the construction period to meet EPA air quality requirements.
- Excessive use of vehicles and powered construction equipment will be minimised where possible.
- All construction machinery will be turned off when not in use to minimise emissions where possible.
- Construction contractors to monitor dust generation progressively.
- Dust suppression methods will be adopted where required (i.e., on windy days when earthworks and vehicle movements are generating dust). Examples of dust suppression methods include:
  - water carts,
  - localised use of water to suppress excavation activities as they are occurring to suppress dust, and
  - covering stockpiles.
- Any stockpiled spoil/fill will be protected to minimise dust generation to avoid sediment moving offsite.
- Vehicles transporting spoil from the site to be covered where required.
- The burning of waste materials will not be permitted on site.

### 5.7.3 Long Term Dust Mitigation

The site team will progressively assess the need to implement long term dust mitigation processes for site stockpiles that remain for longer periods of time. This will be reviewed in conjunction with site progress, programming, site conditions and weather conditions. If the requirement of long-term management is deemed necessary Hansen Yuncken will review and implement one or more strategies most appropriate to the area and monitor accordingly. Long Term Management strategies include:

- Covering stockpile in geofabric or similar.
- Seeding.
- Removal of Stockpile
- Localised use of water
- Surface stabilisation with sprayed system (i.e. Vital Bon-Matt P47-VR1)

## 5.8 Soil, Erosion & Water Quality

In accordance with condition B19 of SSD-15788005, this section of the CEMP addresses the likely impacts associated with stormwater runoff and the mitigation strategies that will be implemented to ensure that these impacts are minimised. Furthermore, in accordance with condition B15(d), refer to Appendix A.8 for the Construction Soil and Water Management Sub-Plan.

### 5.8.1 Likely Impacts

Earthworks and general ground disturbances associated with the site works may result in sediment and other materials leaving the site via wind or water movement. This may have the potential to result in the water pollution such as turbidity and nutrient inputs, should sediment wash into stormwater or natural drainage lines.

Aspects of the site identified as potentially impacting on water quality includes:

- Excavation for foundations and site levelling;
- Stockpiling and transportation of excess spoil; and
- General construction waste entering drainage lines.

### 5.8.2 Mitigation Strategies

Construction is to be undertaken in accordance with the Construction Soil and Water Management Sub-Plan, as per condition B19 of SSD-15788005. Prior to earthworks commencing, erosion and sediment control measures will be implemented generally in accordance with the Construction Certificate drawings and the 'Blue Book'. Control measures, as per the Construction Soil and Water Management Sub-Plan, include:

- Temporary site security/safety fence to be constructed around the site, the site office area and the proposed sediment basin.
- Sediment fencing to be provided downstream of disturbed areas, including any topsoil stockpiles.
- Dust control measures including covering stockpiles, installing fence hessian and watering exposed areas,
- The construction of a temporary sediment basin designed to cater for a storm event up to and including the 1 per cent AEP storm event.
- Stabilised site access at the construction vehicle entry/exits.
- Stockpiled material to be located as far away as possible from any associated natural watercourses or temporary overland flow paths, with sediment fences installed to the downstream side of stockpiles and any embankment function.
- Erosion and sediment control devices shall be properly maintained for the duration of the work. Maintenance includes ensuring adequate settlement times or flocculation and pumping of clean water.
- Sediment controls to be installed and maintained to all stormwater inlets & drains inclusive of socks/wattles during construction activities until completion of the works.
- Wet weather management - In the event of heavy rain, site inspections will be undertaken prior to work commencing, with inspections to focus on:

- The suitability of pedestrian access to the amenities and into the construction work areas.
- The suitability of access for plant and equipment.
- The suitability of ground conditions for plant and equipment to operate.
- Identifying the construction zones suitable for work to commence.
- Actions to remediate those areas not suitable for work to commence (e.g., de-watering, preparing ground conditions and access ways, etc.)

## 5.9 Terrestrial Flora and Fauna

### 5.9.1 Likely Impacts

As per the Environmental Impact Statement, the site contains 210 trees which have either High, Medium or Low Retention criteria. This is supported by an Arboricultural Impact Assessment (AIA) carried out on the site. The results of which are as follows:

- A total of 46 high retention value trees will be subject to high impact. These trees are considered important and should be prioritised for retention and protection
- A total of 52 medium retention value trees will be subject to high impact. These trees are moderately important for retention.
- A total of 36 low retention value trees will be subject to high impact. These trees are not considered important for retention, nor require special works or design modification to be implemented for their retention.

A total of 72 trees are proposed to be retained. Of these, eight trees will be subject to low impact. A total of 64 trees will be subject to no impact from the proposed development. These trees can be retained as there is no foreseeable encroachment within the trees' TPZs. Due to their proximity to the site and the tree protection zones extending into the development site, mitigation measures are required to prevent impacting these trees.

### 5.9.2 Mitigation Strategies

- Erect Tree Protection Zone fencing with signage prior to commencing demolition or earthworks, which is to remain in place during construction.
- Prohibit parking of vehicles or plant, and storage of materials within the Tree Protection Zones of the two trees.
- No trenching or excavation works to occur within the Tree Protection Zone without prior consultation with a Level 5 Arboricultural consultant to evaluate the impact on the trees.
- No vegetation removal or modification is to occur beyond the proposed works areas shown on the plans.
- Carry out landscaping in accordance with the landscape design

## 5.10 Archaeology & Cultural Heritage

### 5.10.1 Likely Impacts

An Aboriginal Cultural Heritage Assessment (ACHA) of the development site was completed by NGH in May 2022. The impact to the scientific, aesthetic, social or cultural and historic values of the artefacts

were to be impacted by the current proposal is considered low. As such, the development site is determined to have nil to low archaeological significance and can proceed with caution. Notwithstanding, the following recommended mitigation strategies will be implemented in the event of an unexpected find onsite. This should be read in conjunction with the 'unexpected finds protocol' outlined in Section 5.11.8.

## 5.10.2 Mitigation Strategies

- If suspected Aboriginal objects are located during works, works will cease in the affected area and an archaeologist will be called in to assess the finds. If the finds are found to be Aboriginal objects, the NSW Department of Planning, Industry and Environment (DPIE) and Heritage NSW will be notified.
- In the extremely unlikely event that human remains are found, works will immediately cease, and the NSW Police will be contacted. If the remains are suspected to be Aboriginal, the DPIE and Heritage NSW will also be contacted to assist in determining appropriate management.
- Should either of the events above occur, the project team will take all necessary measures to protect the artefacts from being damaged or destroyed. Work will not re-commence in the area until a written instruction from the superintendent is received.

## 5.11 Jindabyne Aero Club

Jindabyne Aero Club has been identified as a point where the Clubs operation may interact with the construction works. Part of the projects SSD conditions (B13) is to have the helicopter and aeroclub operations at the Jindabyne Aeroclub reviewed by a suitably qualified and experienced aviation professional in consultation with relevant stakeholders. The review included the proposed construction methodology notably plant and equipment and provided changes to the construction methodology and / or flight paths where required to ensure safe ongoing helicopter operations at the site. The "Design Compliance Statement - Condition B13" (Appendix A. 15) has included measures in place to address aviation operations in accordance with B13. These measures include:

- Notice of use of crane (greater than 38m) – HY to alert Jindabyne Aero Club via email with as much notice as possible of days where mobile crane will be used. This provides notice to put alert to incoming planes. Cranes to be a distinctive colouring to make any tall cranes visible to surrounding aircraft.
- Drone Flights – HY to call Jindabyne Aero Club before flight to advise Aeroclub and other pilots of drone use in the area.
- Rural Fire Service – HY to be mindful of bush fire season and sudden movements that may arise during that time frame.

## 5.12 Site Contamination

### 5.12.1 Contaminated Soil Risk Assessment

A preliminary contamination investigation has been conducted by Coffey as part of the Environmental Impact Statement (EIS) process to assess whether contamination has the potential to exist on the site and to determine whether further investigation is needed. The subsequent report concluded that the site is considered suitable for the proposed use, with the following mitigation measures recommended:

- Development of a Construction Environmental Management plan, including an unexpected finds protocol (refer Section 5.11.8).

- Should suspected asbestos containing materials be encountered on site, the affected area is to be fenced off and assessed by a licenced asbestos assessor.
- The fill material encountered beneath the site would be suitable for on-site reuse.
- Should any fill or stockpiled material be required to be disposed off-site, they must first be assessed in accordance with NSW EPA Waste Classification Guidelines Part 1 Classifying Waste (2014) and assigned a waste classification prior to off-site disposal.

The recommended measures will be implemented on the project where required. The Executive Summary from the Preliminary Site Investigation (Contamination) Report is provided at Appendix A.11 for reference.

## 5.12.2 Identification of Contaminated Soil

During construction, it shall be necessary to monitor soil contamination levels (if any), dust levels and water runoff quality, to ensure that health and environmental standards are not compromised. This is especially important as contaminated soil may be excavated and transported around the site.

Upon discovery of contaminated soil, the HY Site Manager shall arrange for works to be ceased immediately in the area as per the Unexpected Finds Protocol and contact the Superintendent for further directions.

Contaminated waste shall be collected, contained, stored, handled and disposed of in accordance with relevant legislation and codes of practice.

## 5.12.3 Risk of Exposure

It is important to minimise the risk of exposure of construction personnel to soil contaminants by adopting appropriate site controls and industrial hygiene practices. Site controls may include:

- Defining certain areas as contaminated and restricting access to them;
- Appropriate signage;
- Training construction employees in industrial hygiene procedures;
- Keeping non-essential motor vehicles such as personal cars out of contaminated areas;
- Regular medical checks of construction personnel who are exposed to contaminated soils;
- Keeping stockpiles of contaminated material watered down to minimise dust generation in accordance with any water restriction requirements and ensure that runoff is not generated from excessive watering;
- Covering truck loads with tarpaulins and watering material when loading and unloading;
- Wheel washes for trucks and vehicle leaving the contaminated areas;
- Regular road sweeping and cleaning;
- Dust monitoring and adjustment of construction programs to accommodate high risk periods when conditions are windy or very dry; and
- Monitoring of concentrations of volatiles.

Industrial hygiene practices may include:

- Wearing long sleeved shirts and trousers or overalls to minimise dermal exposure;
- Wearing gloves when handling soils;



- Washing hands and faces before eating, drinking or smoking;
- Leaving overalls at site for laundering;
- Showering and washing facilities; and
- Wearing respiratory equipment during times of high dust or volatile emissions.

## 5.12.4 Groundwater Management

A report on Geotechnical Investigation by Douglas Partners has been prepared as part of the EIS process, which considers groundwater conditions across the site. The report notes that perched water was observed at 2.2m depth within a pit. No free groundwater was observed during investigations. The report concluded that although excavations may encounter groundwater through seepages from silty/sandy soil layers and fractures in bedrock following rain, the development is not expected to have any adverse impacts on groundwater or involve activities that would result in contamination.

Based on the findings of the report, groundwater is not considered a risk to the site. Notwithstanding, the measures outlined in Section 5.11.5 will be adopted to mitigate the potential contamination of groundwater. Furthermore, the unexpected finds protocols outlined in Section 5.11.8 will be adopted if groundwater is encountered on site.

## 5.12.5 Release of Contaminants to Soil and Groundwater

Water spraying of stockpiles and of soils being loaded and unloaded from trucks, covering of truck loads with tarpaulins and other measures described in the previous section would minimise the potential for dust to be generated.

If heavily contaminated soil is placed in contact with clean soils, contaminants could be mobilized by rainwater or chemical / physical reactions and affect the clean soils to a limited extent.

Similarly, there is a risk that contaminated soil is not clearly differentiated from clean soil and that mistakes could occur which cause the materials to be mixed or wrongly handled or disposed of.

This shall be overcome by implementing a material tracking system for all contaminated soils and ensuring that construction staff are trained on how to use the system.

This shall involve documenting areas containing contaminated soil and putting signage near stockpiles that indicated the type of material present and its contamination status.

It shall also require supervision and documentation of all movements of contaminated materials around the site.

Avoiding contact between stormwater and contaminated soils is difficult to achieve if larger areas of a site are being exposed within a short period, because it does not allow for minimizing the amount of soil that is uncovered or placed in temporary stockpiles.

Therefore, it is necessary to manage stormwater in such a way that it does not mobilize contaminants and transfer them to clean areas.

This may be achieved by:

- Covering stockpiles of contaminated soil;
- Placing stockpiles of contaminated soil on bitumen or other sealed areas;
- Installation of adequate bunding or other approved method to contain runoff;
- Collecting stormwater run-off from stockpile areas; and



- Analytical testing of collected stormwater prior to its release.

Erosion and sediment control procedures in accordance with the relevant Code of Practice may also be applied, but with the additional objective of keeping water that is exposed to contaminated soils separate from water that has only come into contact with clean soils.

Groundwater could potentially be impacted by contaminants mobilized from stockpiled contaminated soil or by buried material.

Minimising runoff from stockpiles, as outlined above would reduce the risk to groundwater.

Land filling of contaminated material which is below the relevant criteria for soil contamination above the water table and capping the landfill area with low permeability material would minimise the risk of groundwater contamination from infiltration of stormwater into buried soils.

## 5.12.6 Heavy Metal Contamination

Any suspicious industrial wastes encountered will be immediately isolated to enable these assumptions to be confirmed by analytical testing.

## 5.12.7 Mitigation Strategies

If unexpected conditions are encountered during development work or between sampling locations which may pose a contamination risk, all works should stop and an environmental consultant shall be engaged to inspect the site and address the issue.

## 5.12.8 Unexpected Finds

In accordance with Conditions B15(b) and (c) of SSD-15788005, unexpected finds protocols must be included within the CEMP to outline the process and associated communications procedure to be followed if unexpected contamination and/or Aboriginal heritage is found through the duration of the project. Unexpected Finds shall be addressed in compliance with the Hansen Yuncken's Unexpected Finds protocol listed below:

### Unexpected Finds Protocols – Aboriginal and non-Aboriginal heritage items

In accordance with Condition C29 of SSD-15788005, if a suspected Aboriginal heritage item is discovered:

1. Immediately cease work in the immediate area to prevent any further impacts to the object(s) and contact the Site Manager.
2. Site Manager to construct temporary barricading to prevent worker access to the unexpected find.
3. Site team to contact Client and arrange inspection by the Aboriginal Cultural Heritage consultant or suitably qualified person to determine the significance of the object(s).
4. Aboriginal Cultural Heritage consultant to undertake detailed inspection, sampling and analysis.
5. If the findings assessed are presenting to be of Aboriginal Cultural Heritage significance, the following steps should be in accordance with the Aboriginal Cultural Heritage consultants' direction.

The DPIE and Heritage NSW will also be contacted in accordance with Section 5.10.2, EIS and ACHA requirements.

6. Works in that area will only recommence with the written approval of the Client/Planning Secretary and following confirmation that the findings assessed are not presenting to be of Aboriginal Cultural Heritage significance.

In accordance with Condition C30 of SSD-15788005, if relics of historic heritage are discovered:

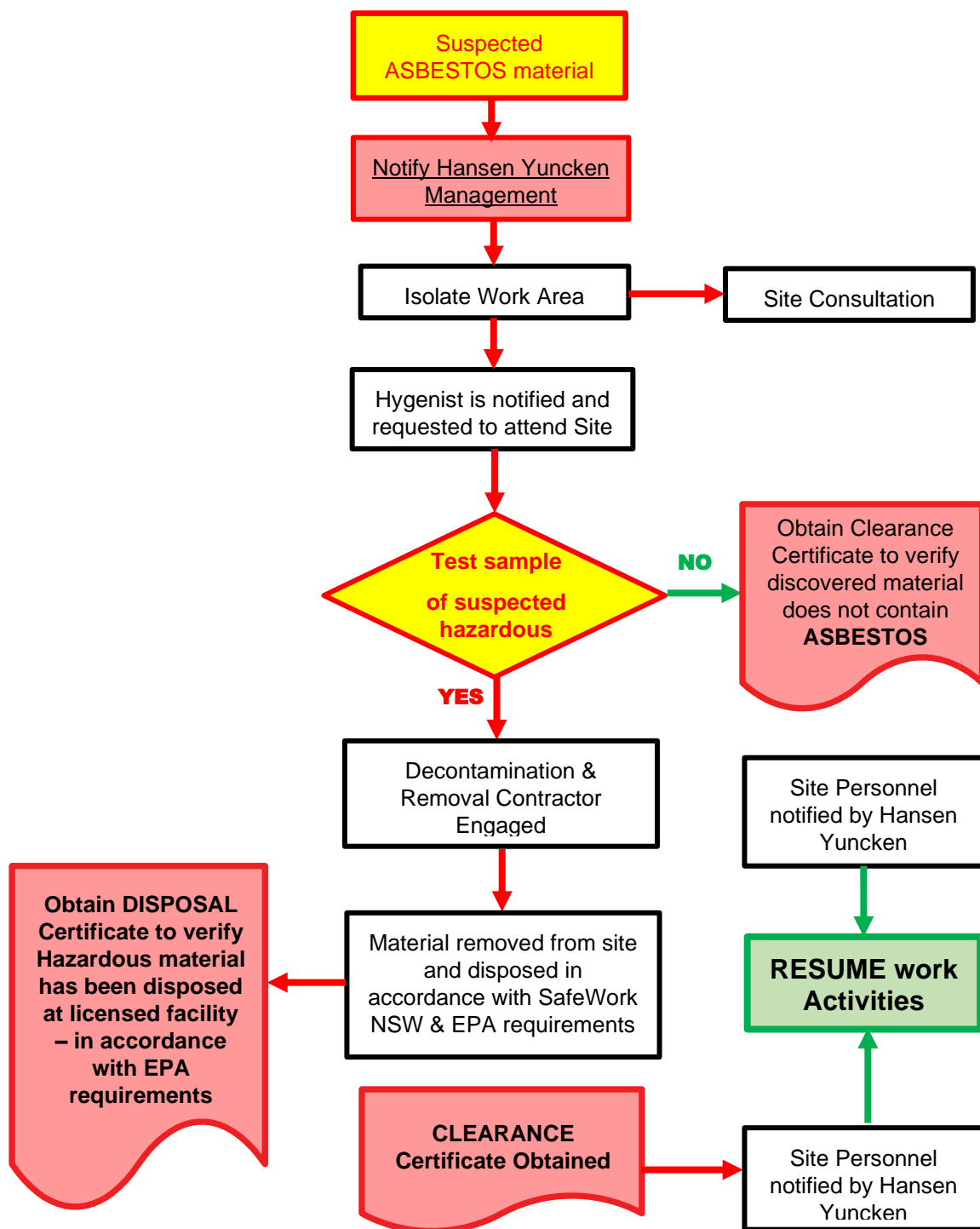
1. All works will cease immediately in the area where the object(s) are found.
2. The Client will be contacted, and notice given to Heritage NSW and the Planning Secretary.
3. Depending on the possible significance of the relics, an archaeological assessment and management strategy may be required before further works can continue in that area as determined in consultation with Heritage NSW.
4. Works will only recommence in that area with the written approval of the Client/Planning Secretary.

## Unexpected Finds Protocol – Asbestos and contamination

If asbestos is detected in unexpected areas prior to, or during, site development works the following 'Unexpected Finds Protocol' will apply:

- a. Upon discovery of suspected asbestos containing material, the Site Manager is to be notified and the affected area closed off using barrier tape and warning signs. Warning signs shall be specific to Asbestos Hazards and shall comply with the AS1319-1994 – Safety Signs for the Occupational Environment.
- b. An Occupational Hygienist is to be notified to inspect the area and confirm the presence of asbestos and to determine the extent of remediation works to be undertaken. A report detailing this information would be compiled by the Occupational Hygienist and provided to the Principal (or their representative) and the site manager.
- c. The location of the identified asbestos material would be surveyed using sub-meter Differential Global Positioning System (DGPS).
- d. If the impacted soil is to be disposed offsite, it should be classified in accordance with the DECCW's Waste Classification Guidelines (2008) and disposed of, as a minimum, as asbestos contaminated waste to a suitably licensed landfill. In dry and windy conditions, the stockpile would be lightly wetted and covered with plastic sheet whilst awaiting disposal.
- e. All work associated with asbestos in soil would be undertaken by a contractor holding a class ASA Licence. SafeWork NSW must be notified 7 days in advance of any asbestos works.
- f. Monitoring for airborne asbestos fibres is to be carried out during the soil excavation in asbestos contaminated materials.
- g. Documentary evidence (weighbridge dockets) of correct disposal is to be provided to the Principal (or their representative).
- h. At the completion of the excavation, a clearance inspection is to be carried out and written certification is to be provided by an Occupational Hygienist that the area is safe to be accessed and worked. If required, the filling material remaining in the inspected area can be covered/sealed by an appropriate physical barrier layer of non-asbestos containing material prior to sign-off.
- i. Validation samples would be collected from the remedial excavation to confirm the complete removal of the asbestos containing materials. If the asbestos pipes/conduits are uncovered, then sampling density would typically comprise one sample per 10-20 linear meter (depending on the length of the pipe). If asbestos debris are found, then the sampling density would typically comprise 1 sample per 5 metre x 5 metre grid.
- j. The sampling locations should be surveyed using a sub-meter DGPS.
- k. Details are to be recorded in the site record system.
- l. Following clearance by an Occupational Hygienist, the area may be reopened for further excavation or construction work.

## Unexpected Finds Protocol - ASBESTOS



## Unexpected Finds Protocol - Buried Structures

In the unlikely event that buried structures such as Underground Storage Tanks (USTs) are encountered during site works, the structure(s) and any associated pipework should be managed/removed as follows:

- a. Upon discovery of structure, the site foreman is to be notified and the area barricaded;
- b. Visual identification of the tank and associated pipework;
- c. Remove and dispose of the structure and associated pipework by a qualified contractor. In the case of an UST, the tank must be removed in accordance with Australian Institute of Petroleum (AIP) Code of Practice and Australian Standards;
- d. Excavate and stockpile impacted materials (based on field observations) for classification;
- e. Validation of the remedial pit by a qualified environmental consultant for the contaminants of concern at the following sampling density:
  - i) Base of tank pit excavation - 1 sample per 25 m<sup>2</sup> (i.e., 5m x 5 m grid);
  - ii) Side of tank pit excavation - 1 sample per 10 linear metre (minimum of 1 sample per side) and 1 sample per 2m – 3m depth interval;
  - iii) Fuel feed lines/pipe-work - 1 sample per 10 linear metre and 2 - 3 depth interval; and
- f. If required, "chase out" all of materials in the remediation pit identified to be impacted by petroleum/hydrocarbons and further validation sampling and analysis as required to assess appropriate removal of impacted materials;
- g. Waste classification and off-site disposal of impacted materials in accordance with Section 4.12 of this plan on Waste Management and
- h. Inclusion of validation, waste classification and disposal documents (including landfill docketts and, in the case of USTs, tank and pipe work destruction certificates) in the validation report.

## 5.13 Waste Management

In accordance with Condition B15(d) of SSD-15788005, the Construction Waste Management Plan (CWMP) has been completed for the project and is contained within (Appendix A.7). The CWMP contains detailed information regarding the types, estimated quantities and proposed treatment methods of different waste types throughout the project. Waste management requirements to be adhered to on the project include:

- Maintaining obstruction free access routes between work site and waste storage area, and for waste collection vehicles.
- All waste not being reused on site will be removed during, or at the completion of the construction stage.
- Waste to be collected during hours of approved construction work.
- All vehicles entering or leaving site will be required to have their loads covered.
- The site will be left clear of waste and debris at completion of works.

In accordance with Condition B18(a), the waste classification for the project is contained within Appendix A.9. Detailed information regarding the treatment and allocation of waste for the duration of the project is contained within the CWMSP.

### **5.13.1 Waste Reduction**

It is likely that some excess building materials will be produced due to the construction work such as miscellaneous waste associated with packaging and transport of plant and equipment and various other manufactured items forming part of the augmentation works. Waste generated as a result of construction will be minimised, recycled, reused or recovered, where practical.

HY has accepted the challenge to reduce waste on construction projects, particularly in materials transferred to landfill.

The strategy for reducing the waste on the project will be made up of three strategies as detailed below in order of priority. The prime objective is to minimise the amount of materials transferred to landfill from this project.

1. Reduce the amount of waste material produced on the project by ensuring that only enough materials required to perform the works are ordered.
2. Any excess materials from particular work areas are to be retained and incorporated into other work areas where practical.
3. Encourage “just in time” delivery of construction materials (minimum storage on site) to reduce the potential of loss / waste due to damage prior to usage.

### **5.13.2 Waste Generation – Fill Material**

Excavated Natural Material (ENM) generated during earthworks will be retained and reused on site where possible. In accordance with the Construction Waste Management Sub-Plan (Appendix A.8) and the Douglas Partners Report on Preliminary Site Investigation (Contamination) (Appendix A.9), fill material required to be disposed off-site will first be assessed and assigned a waste classification prior to off-site disposal.

Please refer to the Remedial Action Plan for the site on strategy for reuse and disposal of soil.

### **5.13.3 Non-Recyclable Waste**

Non-recyclable waste will be disposed of at an EPA approved landfill or transfer station.

### **5.13.4 Waste Collection & Disposal**

Appropriate waste bins are to be provided by HY and made available to all S/C

All S/C shall be directed to place waste in the bins provided. This shall be included in the Site Induction.

Waste collection points are nominated on the Site Layout Plan.

HY Have engaged Tiger Waste who will provide a recycling service for the construction waste streams on site. Hy have engaged Suez for co-mingle waste from the site offices/accommodation. HY confirm that there will be no temporary stockpiling of material waste on site.

Waste collection and disposal is in accordance with Condition B18(b) of SSD-15788005

### **5.13.5 Waste Reporting**

Waste generation is monitored by HY on a monthly basis to ensure that the company's waste reduction objectives are achieved. Waste disposal quantities are monitored monthly by HY to ensure compliance.

The Project Administrator shall record waste disposal data on BIM360 Field using the waste record checklist.

Waste quantities from the PMR shall be entered into the State HSE Database for analysis and reporting against HY Waste reduction targets.

## 5.13.6 Concrete Waste & Washout

Concrete trucks and pumps shall be washed out at designated locations as shown on the site layout plan. Washout of concrete pumps and AGI's in other areas will not be permitted.

The rinse water is captured by the membrane placed in the base of the wash out bay. The water evaporates leaving aggregate, sand and cement in the membrane.

On completion of the concrete activities, the remaining concrete waste is removed and placed in concrete / masonry bins and the membrane is placed into plastic bins. Waste shall be placed in bins for disposal with site waste.

## 5.13.7 Mitigation Strategies

- Accurate written records are to be kept such as:
  - Who transported the waste (company name, ABN, vehicle registration and driver details, date and time of transport, description of waste)
  - Copies of waste dockets/receipts for the waste facility (date and time of delivery, name and address of the facility, it's ABN, contact person).
- The construction contractor is to ensure that waste generated by the works is transported to a place that can lawfully accept it as per Section 143 of the *Protection of the Environment Operations Act* 1997.
- The removal of any asbestos containing material if found is only to be undertaken by an appropriately licenced contractor as per SafeWork NSW requirements and current guidelines.
- All waste, including excess spoil be recycled where practicable
- Trucks transporting spoil off site to be covered.
- The EPA is to be notified immediately of any pollution incidents or harm to the environment (as defined under Part 5.7 of the POEO Act).

## 5.14 Visual

The project has minimal visual impact to neighbouring properties. The visual impact has been assessed through the SSDA within the Environmental Impact Statement (EIS).

## 5.15 Environmental Complaints

Complaints received regarding HY's Environmental Impacts or performance shall be recorded as a complaint in accordance with Hansen Yuncken's. Actions are then to be taken to address the complaint.

## 5.16 Fuel & Chemical Spills

Response to major fuel spills shall be implemented in accordance with the fuel spill procedure in the Emergency Response Plan. The requirements for storage of large fuel and chemical quantities are not expected for this project.

A spill kit shall be located adjacent to fuel and chemical storage and dispensing areas.

## 5.17 Hazardous Materials

Hazardous materials shall be controlled in accordance with Hazardous Materials procedures.

## 5.18 External Lighting

In accordance with condition B11 & B15a (iv) of SSD-15788005, the external lighting to the proposed Jindabyne Education Campus complies with AS1158.3.1:2005 – Lighting for Roads and Public Spaces and AS4282-2019 – Control of the Obstructive Effects of Outdoor Lighting. A copy of this certificate verifying the compliance with these Australian Standards is provided at Appendix A.13.

## 5.19 Community Consultation and Complaints Handling

In accordance with condition B15(a) (vi) of SSD-15788005, community consultation and complaints handling is primarily the responsibility of the Client. Hansen Yuncken will provide assistance where possible to ensure that the client is complying with the requirements of the Community Communication Strategy developed for the Jindabyne Education Campus in accordance with condition B9 of SSD-15788005. Also refer to the Communications & Engagement Management Plan.

### 5.19.1 Community Consultation

Community consultation is primarily the responsibility of the client. Hansen Yuncken will ensure that the relevant strategies/outcomes are incorporated within the relevant management plans and construction process where possible. The client will use a number tools and techniques to keep stakeholders and the local community involved.

### 5.19.2 Complaints Handling

Hansen Yuncken will provide assistance through the complaints handling process. During the project delivery phase, a complaint is defined as in regard to construction impacts – *such as* – safety, dust, noise, traffic, congestion, loss of parking, contamination, loss of amenity, hours of work, property damage, property access, service disruption, conduct or behaviour of construction workers or other environmental impacts. If a complaint is made directly to Hansen Yuncken, it will be redirected to the following SINSW communication channels:

- Phone: 1300 482 651
- Email: [schoolinfrastructure@det.nsw.edu.au](mailto:schoolinfrastructure@det.nsw.edu.au)
- Website: [schoolinfrastructure.nsw.gov.au](https://schoolinfrastructure.nsw.gov.au)

Upon receipt of the complaint, Hansen Yuncken will endeavour to close out the complaint in a timely manner. The complaint will be logged to ensure that the impact of future construction works that may impact the community in a similar manner are minimised.



## 6 Measurement & Evaluation

### 6.1 Environmental Incidents & Emergencies

#### 6.1.1 Environmental Incidents

Incidents resulting in potential or actual environmental damage shall be reported and investigated in accordance with the Hansen Yuncken's HSE Incident Procedure and recorded on **Hammertech using the incident report module.**

#### 6.1.2 Environmental Emergencies

Preparation for and response to the environmental impacts of emergency events shall be conducted in accordance with Hansen Yuncken's project Emergency Response Plan (ERP). The environmental impacts controlled in the ERP are;

##### **Asbestos Exposure**

If during works, personnel become accidentally exposed to asbestos, the following procedures shall be followed:

1. Personnel in the immediate affected area shall cease work and immediately go to the emergency showers on site.
2. All contaminated clothing is to be removed and placed into a thick plastic bag. The plastic bag must then be tightly sealed and labelled as "Asbestos Contaminated Clothing".
3. Personnel are to immediately decontaminate themselves in a shower and a clean set of clothes to be re-issued.
4. Asbestos contaminated clothing is to be industrially cleaned or disposed of appropriately

##### **Water Pollution**

An incident involving actual or potential harm to human or environmental health must be reported immediately to the EPA.

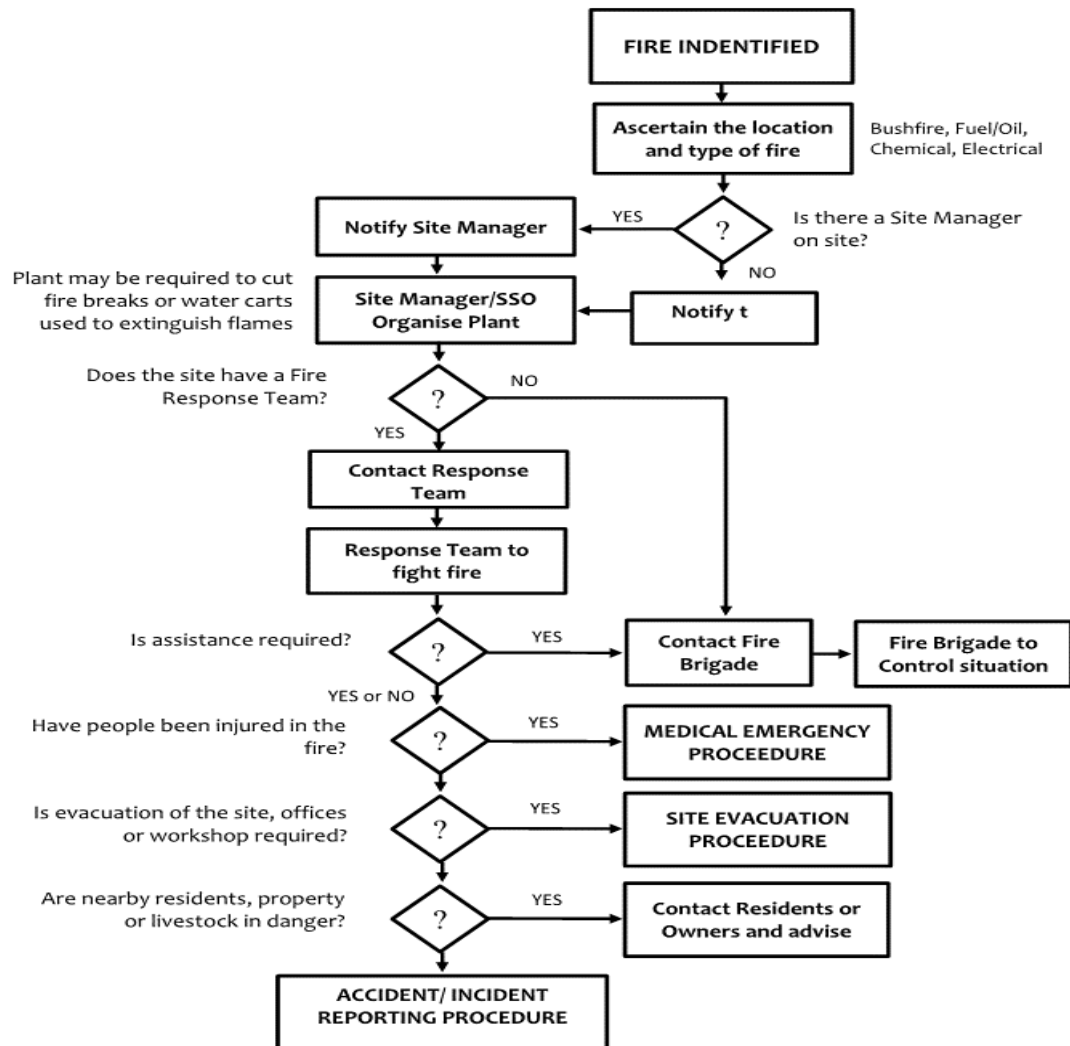
Firstly, call 000 if the incident presents an immediate threat to human health or property. Fire and Rescue NSW, the NSW Police and the NSW Ambulance Service are the first responders, as they are responsible for controlling and containing incidents.

If the incident does not require an initial combat agency, or once the 000 call has been made, notify the HY Site Manager who will notify the relevant authorities in the following order. The 24-hour hotline for each authority is given when available:

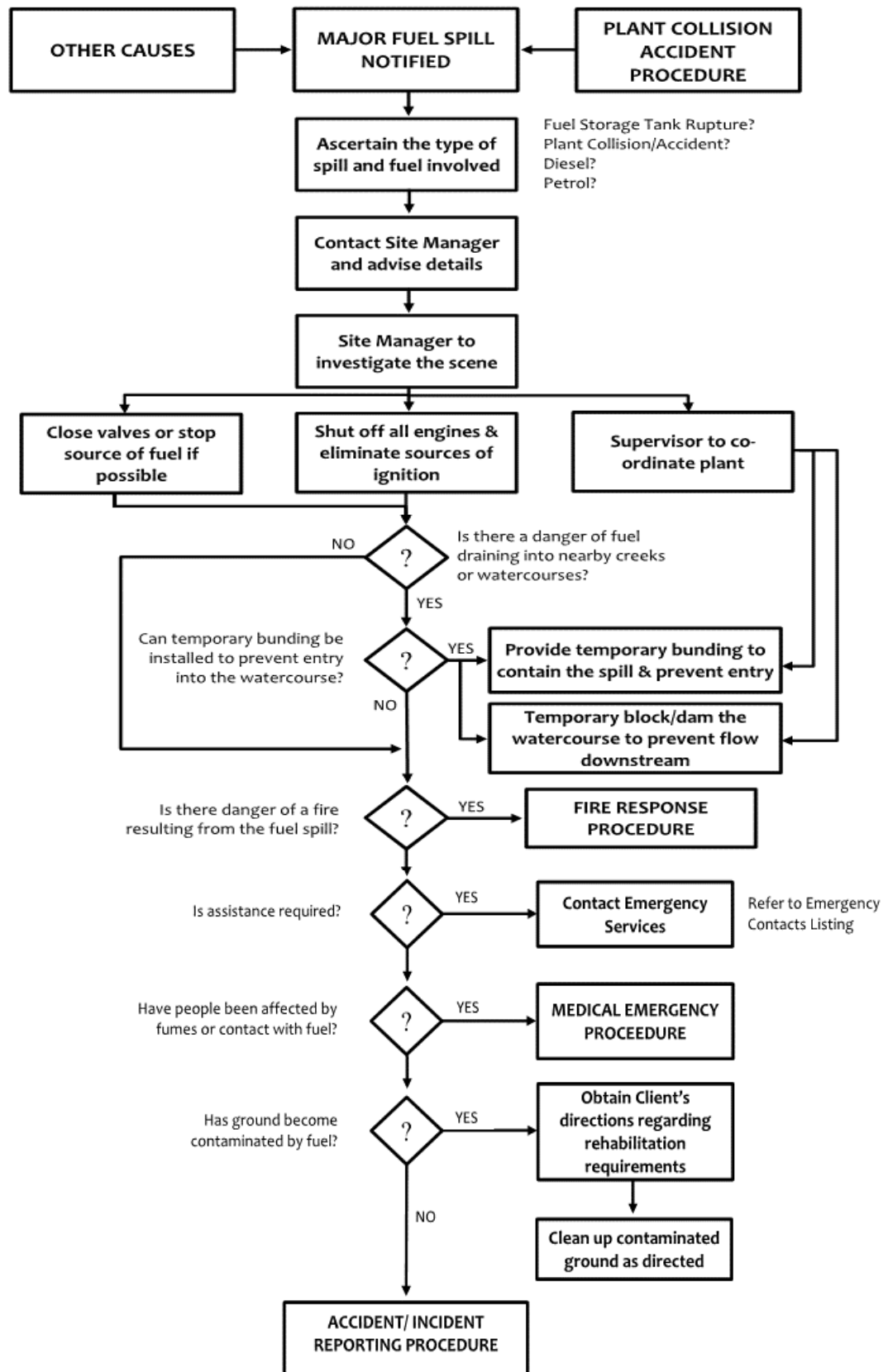
**EPA Environment Line on 131 555**

**SafeWork NSW Authority – phone 13 10 50 (Where appropriate)**

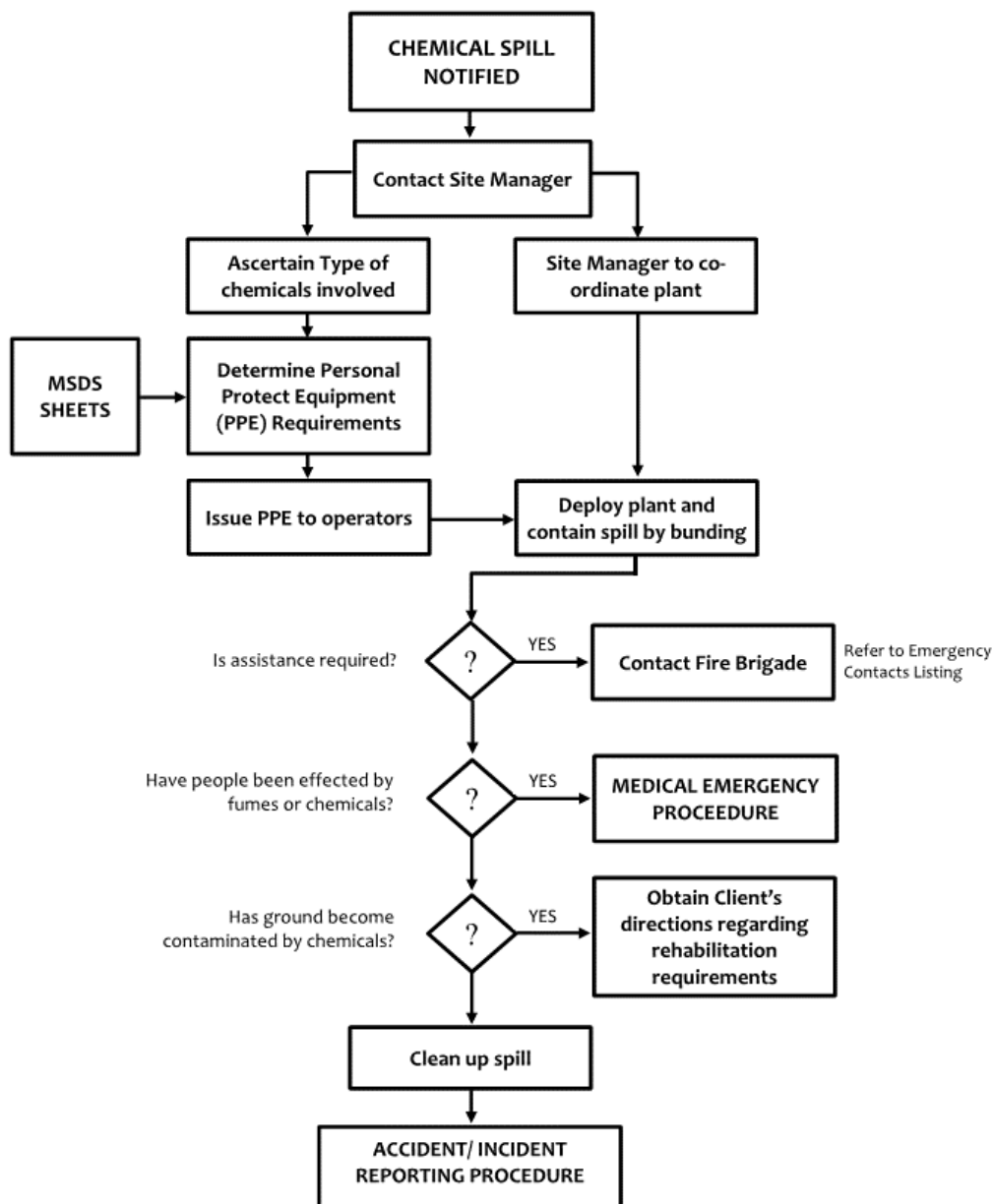
## Fire



## Major Fuel Spill



## Chemical Spill



## 6.2 Environmental Inspections & Audits

Inspections & audits of the site including environmental controls shall be conducted in accordance with the procedure for Site HSE Inspections & the project Audit Management Plan. The following inspections will be conducted onsite throughout the time on the project:

- Weekly site inspections,
- Monthly task observations,
- Geosyntec 6 monthly independent audits, and
- External audits in line with the contract requirements and as required under Condition A26 of SSD-15788005.

## 6.2.1 Hazard Rectification / Improvement & Suspension Notices

Where an item has been assessed as either a Hazard Rectification, Improvement or Suspension Notice during any internal inspection an issue shall be raised in BIM360 Field to bring the activity or process into compliance with requirements. The issue(s) shall be recorded in BIM360 Field and allocated to the relevant contractor/subcontractor.

The independent consultant in writing shall raise all items assessed as non-conformance during external audits and HY will address all issues and close out within the time frame advised.

HY shall ensure that product/ works which does not conform to specified requirements are identified and controlled to prevent its unintended use or delivery. A nonconformance shall be raised when:

- Works/products not meeting specified requirements are identified; and/or
- Works have not been inspected or tested in accordance with specified requirements (frequency, method, authority); and/or
- A systematic and/or repeated omission/error that may result in a time or cost implication to the project.

If the Non-Conformance (NC) is determined to be a Non-Compliance (in accordance with the definition outlined in SSD-15788005) then conditions A29-A33 shall be followed.

## 6.2.2 Reporting & Corrective Actions

All nonconformities will result in corrective action being undertaken. The significance of nonconformities shall be evaluated in terms of their impact on:

- operating costs,
- cost of nonconformity and its correction,
- product performance,
- regulatory requirements,
- client satisfaction, and
- any other risks

HY project management shall undertake the following actions to investigate the causes of nonconformities specific to the project in order to prevent recurrence.

- identify nonconformities that relate to products, QMS processes, resources, subcontractors and outsourced work, and client complaints;
- review and determine the causes of nonconformities using problem solving tools such as the root cause analysis process - Process Workflow flowchart - to determine the underlying root cause(s) of the nonconformity;
- evaluate the need for corrective action to minimise the occurrence of identified nonconformities;
- determine and implement the corrective action needed; and
- monitor the corrective actions taken and record the results to determine if further improvement is necessary to get it right.
- Notification procedures in accordance with Condition A30 and Appendix 2 of SSD-15788005.

Actions taken to eliminate the cause of nonconformity must flow from the root cause analysis and may involve changes to product, process, resources, methods, equipment, etc. or any combination of these. Records of the actions taken and follow-up activities shall be monitored and maintained by the project

to ensure timely completion of any open corrective action. Corrective action records shall be monitored on an ongoing basis for any recurrence of the nonconformity where corrective action was taken.

Communication and reporting channels will generally be in accordance with section 4.8. Notwithstanding, HY will provide appropriate notification to Colliers and SINSW as described below:

- Site conditions –
  - If the Contractor becomes aware of Adverse Site Conditions, the Contractor will notify the Principal in writing as soon as possible and in any event within 7 days after becoming aware of the Adverse Site Conditions. Where practicable, the notification should be given before the Adverse Site Conditions are disturbed. The notification must include details of:
    1. the Site Conditions the Contractor claims are Adverse Site Conditions,
    2. the reasons why the Contractor claims that the Site Conditions are Adverse Site Conditions, including any information supporting the contention,
    3. the effect on the works,
    4. the effect on achieving completion,
    5. the additional work and resources involved and the Contractor's estimate of its entitlement to any adjustment to the contract price, and
    6. any other matters the contractor considers relevant.
  - Notify the Principal immediately upon discovering any damaged services or services that obstruct the works and are not shown in the Principal's documents.
- WHS –
  - The Contractor is to notify the Principal and Project Manager of an incident that has occurred onsite by submitting a high-level written correspondence within the same day of occurrence and follow up with a detailed final report within 48 hours of occurrence of any incident.
  - Notify the Principal of any notifiable incident and any incident requiring medical treatment or involving lost time as soon as reasonably practicable after the incident. Provide a written report to the Principal within 24 hours after the incident, giving details of the incident and evidence that requirements of the WHS Act have been met.
  - Immediately notify the Principal of any Prohibition, Improvement, Non-disturbance or Penalty Notice issued by SafeWork NSW for any work under the contract.
- Hazardous substances discovered unexpectedly on the site –
  - If any nominated hazardous substance is discovered unexpectedly on the site, the Contractor must suspend all work that may result in exposure to the substance and notify the Principal immediately of the type of substance and its location.
  - Not less than 7 days prior to starting any asbestos removal work, notify the local office of SafeWork NSW and the Principal of the intention to carry out that work.
- Environmental Management –
  - Immediately notify the Principal of any pollution incident that may cause material harm to the environment, providing evidence that notification requirements of the POEO Act have been met, where applicable.

The client is responsible for all appropriate notifications to DPIE.



### 6.3 Environmental Management Plan (EMP) Review

The EMP will be regularly reviewed as part of a continual improvement process to ensure it remains current and relevant to the project.

HY's standard EMP review timeframe is 6 monthly. Additional triggers for review include;

- an incident (as defined by the conditions of consent);
- any non-compliance with the conditions of consent or other legal requirement;
- any non-conformance with any other environmental requirements;
- audit findings (internal, external and/or independent);
- project modifications approved by the consent or approval authority;
- changes to legislative requirements;

If this EMP is revised in any consequential way, it will be submitted to the Department for assessment and approval in accordance with the requirements of any relevant conditions of consent. If a revised EMP is submitted to the Department Hansen Yuncken will provide a summary of the changes made and the circumstance/s that triggered the review and revision.

## 7 References

Environmental Planning and Assessment Act 1979 No 203

Environmental Planning and Assessment Regulation 2000

Protection of the Environment Operations Act 1997 (NSW)

Protection of the Environment Operations (General) Regulation 2009

ISO 14001; 2015 Environmental management systems - Requirements with guidance for use

AS/NZS ISO 31000:2009 Risk management – Principles and guidelines

HB158:2010 Delivering assurance based on ISO 31000:2009 – Risk management – Principles and guidelines

[NSW Government Environmental Management System Guidelines](#) (edition 3 - August 2013)

NSW Government Environmental Management Plan Guideline (April 2020)

## 8 Appendices

### A.1 Hansen Yuncken Environmental Policy Statement



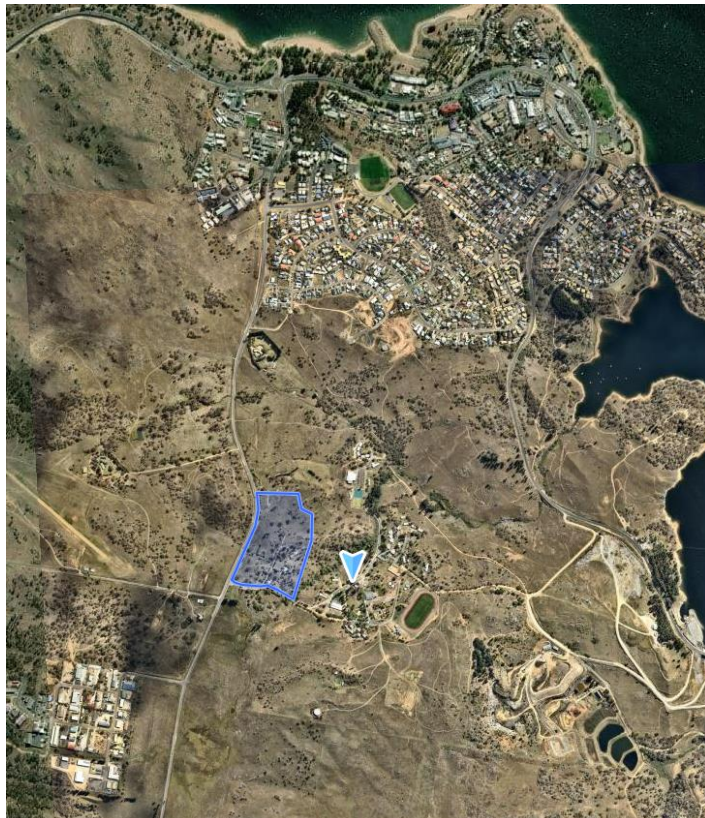
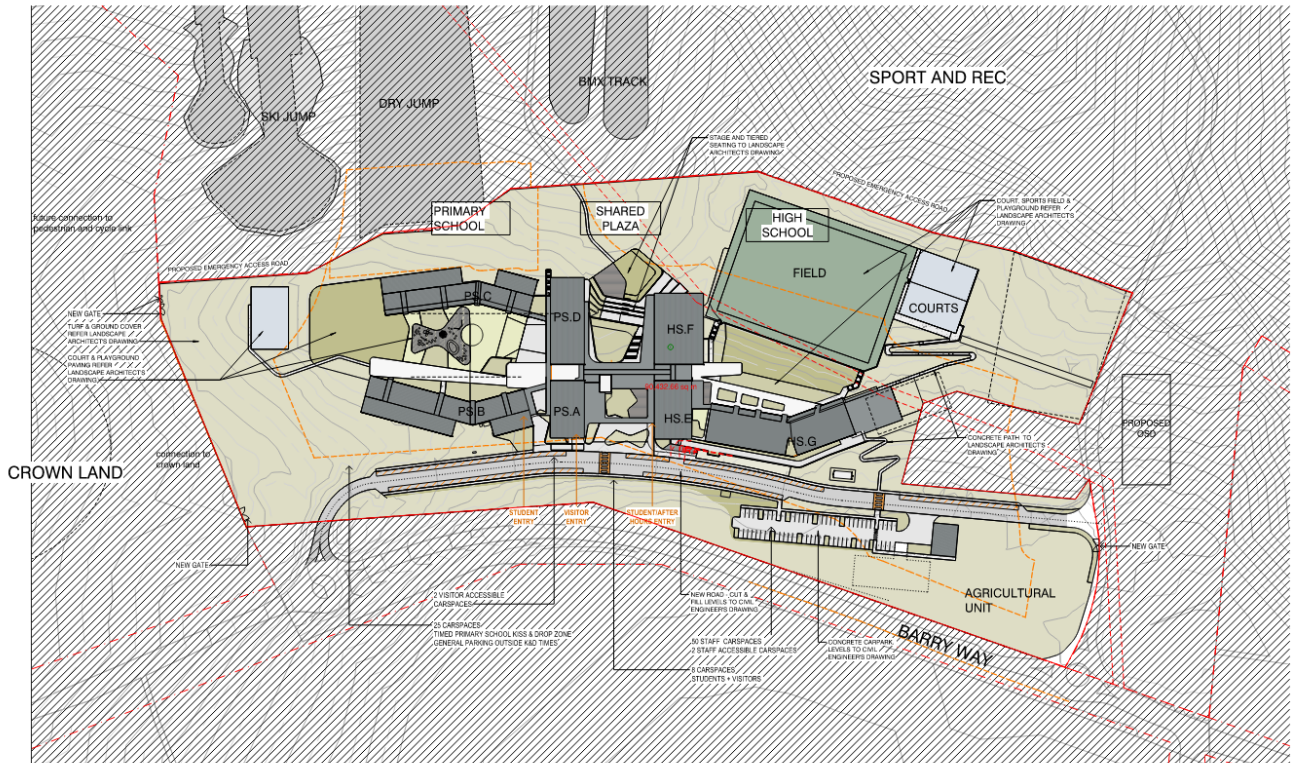
## A.2 Environmental Management Accreditation - ISO14001





## A.3 Site Location

207 Barry Way, Jindabyne, NSW 2627



## A.4 HSE Project Risk Assessment

HANSEN YUNCKEN				PROJECT HSE RISK ASSESSMENT											
				This Project HSE Risk Assessment is to be used as a guide when completing the monthly Project High Risk Identification assessment on the HYWAY Site Management Dashboard in accordance with the Project HSE Risk Assessment procedure and should be conducted at the time of Construction programme status to assess hazards and risks for next month. Hazards with residual risk from the Design WHS Risk Assessment (if applicable) are also to be considered.											
RELEVANT PROCEDURE:				Project HSE Risk Assessment				RISK ASSESSMENT TABLE		Consequence					
PROJECT:				Jindabyne Education Campus				Likelihood		1	2	3	4	5	
JOB NO:				SN105				A	Very Likely	High	High	High	Medium	Medium	
								B	Likely	High	High	Medium	Medium	Medium	
ASSESSED BY:				Daniel Spirit Jones, Chris Histon, Mick Parker, Matt O'Grady, Tim Redmond				C	Possible	High	High	Medium	Medium	Low	
								D	Remotely Possible	Medium	Medium	Medium	Low	Low	
ASSESSMENT DATE:				13-Jul-24				E	Very Unlikely	Medium	Medium	Low	Low	Low	
								NA	Not applicable	NA	NA	NA	NA	NA	
				RISK ASSESSMENT		CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)									
HAZARD (Include additional project specific hazards as required)				L	C	Class	Legislation, Standards & Codes of Practice				Enter Details of Specific Controls Required				
Amenities															
Access				A	4	Medium	NSW Code Of Practice: Managing the work Environment and Facilities				While concrete footpaths have been installed for safe access to all amenities in the compound area. The compound area is fenced off to protect workers from moving plant, trucks and vehicles.				
Location and nature of workplace				A	4	Medium	NSW Code Of Practice: Managing the work Environment and Facilities				All amenities are set up in a compound area at the main entry to site making it easy for access and egress in emergency situations.				
Housekeeping				A	4	Medium	NSW Code Of Practice: Managing the work Environment and Facilities				A full time cleaner is engaged to manage and maintain all amenities.				
Seating				A	4	Medium	NSW Code Of Practice: Managing the work Environment and Facilities				Sufficient seating is in place for all workers to rest, take breaks and eat lunch.				
Lighting (Poor)				A	4	Medium	NSW Code Of Practice: Managing the work Environment and Facilities				Lighting is setup in all amenities for safe access.				
Air Quality				A	4	Medium	NSW Code Of Practice: Managing the work Environment and Facilities				Windows, fans and air conditioning are installed to all site sheds.				
Hot and Cold Environment				A	4	Medium	NSW Code Of Practice: Managing the work Environment and Facilities				Air conditioning installed to all lunch sheds.				
Drinking water				A	4	Medium	NSW Code Of Practice: Managing the work Environment and Facilities				Bubble bar set up at lunch sheds and various locations throughout site.				
Dining Facilities				A	4	Medium	NSW Code Of Practice: Managing the work Environment and Facilities				Clean and tidy tables are available in all lunch sheds. There is sufficient space for all workers to sit down and have lunch.				
Hand washing				A	4	Medium	NSW Code Of Practice: Managing the work Environment and Facilities				Warm water, soap and hand dryers are available in the toilets.				
Shower Facilities				A	4	Medium	NSW Code Of Practice: Managing the work Environment and Facilities				Hot showers are provided on site.				
Change Room				A	4	Medium	NSW Code Of Practice: Managing the work Environment and Facilities				Change rooms with benching and coat hooks are provided on site for workers to change clothes.				
Air Quality															
Dust from plant & truck movements				C	4	Medium	Jindabyne Education Campus WHS Plan				Water cart to conduct regular taps of the site spraying water on the ground to keep dust settled particularly where there is high plant and truck movements.				
Refuelling of plant and equipment				B	4	Medium	AS/NZS 1715 Selection, use and maintenance of respiratory protective devices AS/NZS 1716 Respiratory protection devices				All refuelling is to be conducted in well ventilated areas only. Refuelling to be conducted clear of any hot works on site such as grinding, welding etc.				
Concrete cutting / coring				E	5	Low	NSW Cutting & Drilling Concrete & Other Masonry Products 1996				Water must be used to minimise dust. Demolition saws take preference over dry cutting with a masonry blade on an angle grinder. Rubble to be cleaned up immediately. Slurry to be cleaned up immediately.				
Access/ Egress and movements around site															
Workers entering site without Hansen Yuncken permission would be unaware of any specific site hazards eg, asbestos, gas lines, high risk construction work etc				A	2	High	NSW Code Of Practice: Consultation, coordination and cooperation				All workers must be site inducted by Hansen Yuncken prior to entering site. This is clearly marked on the contact details sign at the main entry to site. Subcontractors must give Hansen Yuncken site staff sufficient notice prior to workers attending site to be site inducted. All workers on site to display a HY Jindabyne Education Campus photo ID at all times and sign into the site attendance register on a Daily Basis after they have been inducted.				
Unauthorised access onto site				B	3	Medium	SafeWork NSW Code Of Practice: WHS Consultation, coordination and cooperation HY procedure - Site Establishment Hansen Yuncken HYer Standard 09 Site Establishment				Install safety/warning signage e.g. Construction Site Authorised Persons Only. All visitors report to site office. Where a security fence is used to control unauthorised entry onto a construction site, they should: • be constructed from suitable, dedicated materials with no holes or gaps; • be a suitable height to deter entry (for example, at least 1.8 metres high) • be soundly constructed (for example, gates and joints) • be secure and not present a weak point for entry • be stable and able to withstand anticipated loads or forces (for example, strong winds, persons attempting to climb the fence) • be difficult to gain access under the fence and to scale the fence Where a fence is comprised of discrete panels, the joints should not weaken it and should provide the same level of security as the panels. Sheets of reinforcing mesh should not be used as site fencing because it may allow adequate hand and foot hold for children to climb over the protruding ends. Fencing with signage and shade cloth type coverings may require additional support to resist wind loadings. Gates should not represent a weak point and the closed gate should provide the same level of security. Gates to have locks and chains fitted. Gates to be kept locked where required, e.g. vehicle access points, or traffic controllers in place. Undertake regular inspections to ensure integrity of fences and gates. Security turnstiles to be installed.				
Visitors entering site without Hansen Yuncken permission would be unaware of site hazards eg, asbestos, gas lines etc				C	5	Low	NSW Code Of Practice: Consultation, coordination and cooperation				All visitors must sign in at the site office prior to entering site. Signs have been erected clearly stating this. Visitors must display a ID card and be escorted by an inducted guide at all times. Visitors entering site must have approval from the Site Manager.				
Pedestrians/ workers walking around site being struck by vehicles/trucks/ plant moving around site				D	1	Medium	NSW Code of Practice: Moving Plant On Construction Sites				Buried/fenced off pedestrian pathways have been erected on site to keep pedestrians clear of areas where there are high movements of vehicles/ trucks and plant. All subcontractors using moving plant must have a HRCW SWMS which details how to protect other workers in the area from being struck by the plant. All plant must have a flashing light, horn and reversing beeper. Vehicles/ trucks must turn their flashing lights on. There is a 10km/h speed limit on site. All workers have been told at the site induction to be aware of moving plant on site and keep clear whenever possible. Only workers who are involved with the task are to be in the vicinity of the plant. HY have instructed all subcontractors to train their workers through pre-start meetings on how to approach moving plant and equipment. Hand roads for plant and vehicles are to be maintained. Pedestrians are to avoid walking on hard road whenever possible. Plant operators are to keep reversing to a minimum. Pedestrians that need to approach moving plant are to do so from the front of the machine and ask to gain the operators attention by waving arms and yelling out to the operator. No person is to approach the machine until the operator has stopped moving the machine and signalled that it is safe to approach. Spotters working with machines must always stand in an area where they are visible to the operator. A site spotter/ elimination plan has been proposed to and approved by the site safety committee. This plan states areas where a spotter is mandatory for all plant and vehicle movements. This plan is posted on the site notice board.				
Public being struck by trucks entering and exiting site				D	3	Medium	NSW Code Of Practice: How to manage work health and safety risks				Traffic control is in place managing vehicle and pedestrian movements at main entry to site.				
Subcontractors bringing vehicles onto site without Hansen Yuncken permission				B	4	Medium	Jindabyne Education Campus Traffic Management Plan				All subcontractors must seek approval from the Hansen Yuncken Site Manager prior to bringing vehicles/ trucks onto site.				




<div>HANSEN YUNCKEN</div>				<div>PROJECT HSE RISK ASSESSMENT</div> <div>This Project HSE Risk Assessment is to be used as a guide when completing the monthly Project High Risk Identification assessment on HYWAY Site Management Dashboard in accordance with the Project HSE Risk Assessment procedure and should be conducted at the time of Construction programme status to assess hazards and risks for next month. Hazards with residual risk from the Design WHS Risk Assessment (if applicable) are also to be considered.</div>										
RELEVANT PROCEDURE:				Project HSE Risk Assessment				RISK ASSESSMENT TABLE		Consequence				
PROJECT:				Jindabyne Education Campus				Likelihood		1	2	3	4	5
JOB NO:				SN105				A	Very Likely	High	High	High	Medium	Medium
ASSESSED BY:				Daniel Spirit Jones, Chris Histon, Mick Parker, Matt O'Grady, Tim Redmond				B	Likely	High	High	Medium	Medium	Medium
ASSESSMENT DATE:				13-Jul-24				C	Possible	High	Medium	Medium	Medium	Low
								D	Remotely Possible	Medium	Medium	Medium	Low	Low
								E	Very Unlikely	Medium	Medium	Low	Low	Low
								NA	Not applicable	NA	NA	NA	NA	NA
				RISK ASSESSMENT			CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)							
HAZARD (Include additional project specific hazards as required)				L	C	Class	Legislation, Standards & Codes of Practice			Enter Details of Specific Controls Required				
Workers slipping/ tripping over on muddy/ uneven ground				C	3	Medium	Jindabyne Education Campus WHS Management Plan			Pedestrian pathways have been constructed to minimise slip and trip hazards. Wheel ruts, eroded ground, muddy haul roads and pathways are to be blasted back to solid ground as required. On rain days the foreman & safety committee (when established) is to walk the site prior to work commencing and determine which areas are safe for work and which areas are no go zones.				
Vehicles becoming bogged or losing traction whilst entering/ exiting and driving around site				E	4	Low				Vehicles to be driven on solid ground only. No vehicles will be allowed to drive on muddy terrain				
Collisions between plant on site				E	3	Low				Sufficient distance to be kept between all plant on site. Flashing light, horn and reversing beeper must be working. Plant and vehicles to stay on haul roads whenever possible. Site speed limit is 10km/h				
Too many vehicles parked on site creating restricted access around site				NA	4	NA				No Parking onsite. Unless a designated area has been provided by Hansen Yuncken for Subcontractor or Visitor Parking.				
PPO1 Road Works access, egress and work face for workers adjacent live roadway.				B	4	Medium	Jindabyne Education Campus Traffic Management Plan Council Approved TGS's Hansen Yuncken Hyer Standards for Traffic Management Code of Practice:Construction Work			Council approved TGS's to be implemented and enforced. Workforce separation of moving vehicles of minimum 1.0m in 40km live traffic on public roadways as per requirements.				

## PROJECT HSE RISK ASSESSMENT

This Project HSE Risk Assessment is to be used as a guide when completing the monthly Project High Risk Identification assessment on the HYWAY Site Management Dashboard in accordance with the Project HSE Risk Assessment procedure and should be conducted at the time of Construction programme status to assess hazards and risks for next month. Hazards with residual risk from the Design WHS Risk Assessment (if applicable) are also to be considered.


RELEVANT PROCEDURE:	Project HSE Risk Assessment				RISK ASSESSMENT TABLE		Consequence				
PROJECT:	Jindabyne Education Campus						Likelihood	1	2	3	4
JOB NO:	SN105				A	Very Likely	High	High	High	Medium	Medium
ASSESSED BY:	Daniel Spirit Jones, Chris Histon, Mick Parker, Matt O'Grady, Tim Redmond				B	Likely	High	High	Medium	Medium	Medium
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ASSESSMENT DATE:	13-Jul-24				E	Very Unlikely	Medium	Medium	Low	Low	Low
					NA	Not applicable	NA	NA	NA	NA	NA
		RISK ASSESSMENT		CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)							
HAZARD (Include additional project specific hazards as required)	L	C	Class	Legislation, Standards & Codes of Practice		Enter Details of Specific Controls Required					
Asbestos											
Workers being exposed to the asbestos contaminated soil (ACM) at various locations around site	NA	3	NA	Working with asbestos guide 2008		An independent Environmental consultant will be engaged by HY to verify any areas that may potentially be deemed to contain asbestos contaminated soil or material on site. All works to be undertaken in accordance with the RMP.					
Unidentified finds of asbestos	B	3	Medium	Jindabyne Education Campus Asbestos Management Plan		All works to be undertaken in accordance with the RMP.					
Unidentified finds of asbestos	B	3	Medium	Code of Practice: How to manage and control asbestos in the workplace		Warning signage and red/white tape to be used to prevent unauthorised persons entering the area. Air monitors to be installed and all workers in the area must wear appropriate PPE as defined in SWMS.					
Unidentified finds of asbestos	B	3	Medium	Code of Practice: How to safely remove asbestos		Warning signage and red/white tape to be used to prevent unauthorised persons entering the area. Air monitors to be installed and all workers in the area must wear appropriate PPE as defined in SWMS.					
Unidentified finds of asbestos	B	3	Medium	NWHSC 2002 - 2005 Safe Removal of Asbestos		Warning signage and red/white tape to be used to prevent unauthorised persons entering the area. Air monitors to be installed and all workers in the area must wear appropriate PPE as defined in SWMS.					
Unidentified finds of asbestos	B	3	Medium	NWHSC 2018 - 2005 Management & Control of Asbestos		Warning signage and red/white tape to be used to prevent unauthorised persons entering the area. Air monitors to be installed and all workers in the area must wear appropriate PPE as defined in SWMS.					
Atmosphere - Contaminated/ Flammable											
Flammable fumes from fuel containers	A	4	Medium	NSW Code of Practice: Storage and Handling of Dangerous Goods		Fuel to be stored in fuel storage areas only. Fuel drums are to be placed back in the fuel storage area after refuelling has been completed. No refuelling near any hot works being undertaken. All subcontractors must have a relevant SWMS.					
Unsafe storage of fuel	C	4	Medium	AS/NZS 2430 Classification of hazardous areas		Fuel must be stored in ventilated cages. No fuel to be stored in shipping containers.					
Fumes from spray sealer application	D	4	Low	AS1318 Use of colour for the marking of physical hazards and the identification of certain equipment in industry		Applicators must wear mask whilst spray painting. Warning signage to be erected and all other personnel not involved with the task are to be clear of the area.					
Biological Hazards											
Disease from unhygienic facilities and amenities	E	4	Low	NSW Code Of Practice: HIV and other blood-born pathogens in the workplace Jindabyne Education Campus WHS Management Plan NSW: Code Of Practice: Work Place Amenities		A cleaner has been engaged by Hansen Yuncken to clean amenities on a weekly basis. Amenities to be kept clean and tidy at all times.					
Bomb Threat											
Persons unaware of what to do in the event of an emergency	E	5	Low	HY Emergency Response Plan AS 2293 Emergency escape lighting and exit signs for buildings AS 3745: 2002 Emergency Control Organisation and Procedures For Buildings, Structures and Workplaces		Emergency response procedure is explained to all workers at the site induction. HY to practice fire drills every 6 months to ensure the system is working.					
Changes in design											
Changes in design could result in new hazards not being identified	D	4	Low	Jindabyne Education Campus WHS Management Plan		All design changes must be risk assessed by HY. Subcontractor SWMS will be reviewed by HY as required.					
Craning & Hoisting Operations											
Persons/ other trades on site walking into the crane slew area may be struck by crane or load	B	1	High	AS 2550: Cranes, hoists & winches - Safe Use Jindabyne Education Campus WHS Plan		The work area around all cranes must be fully barricaded eg banking and signposted to keep other workers clear.					
Slings or chains failing resulting in loss of load	A	1	High	AS 1418.1: Cranes, hoists and winches – General Requirements AS 4991 Lifting Devices Jindabyne Education Campus WHS Plan		Subcontractors must keep an up-to-date register of all chains and slings. All equipment must be visually checked daily prior to use.					
Crane out riggers sinking in ground resulting in crane rolling over	A	1	High	NWHSC 1010: National Standard for Plant Jindabyne Education Campus WHS Plan		Subcontractor SWMS to detail craning and hoisting operations. Subcontractor to communicate with HY staff and obtain a plant setup permit prior to setting up cranes to ensure outriggers are not set up over underground services or in unstable ground conditions.					
Crane striking structures whilst slewing	A	2	High	AS 1418.10(Int): Cranes, hoists and winches - Elevating work platforms Jindabyne Education Campus WHS Plan		Dogman and crane operator to consistently communicate with each other. Crane operator to take directions from dogman only.					

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HAZARD (Include additional project specific hazards as required)				L	C	Class	Legislation, Standards & Codes of Practice						Enter Details of Specific Controls Required					
Concrete																		
Concrete Pumping - overload formwork structure				A	2	High	NSW Code Of Practice: Pumping Concrete 1993						Spotter to be used when positioning boom over formwork					
Trip hazard after excess concrete has cured				A	4	Medium	Environmental Protection Act 1994						Back to plant policy for large amounts of excess concrete					
Slip hazard from excess water and slurry on the ground/ concrete washout				A	4	Medium	Jindabyne Education Campus WHS Plan						Concrete washout to be set up in area where water will not run over pedestrian pathways. Generally plastic is rolled out on the ground. The hopper is washed out onto the plastic, the concrete cured then is placed in a skip bin for the following day					
Slurry and wet concrete entering stormwater drains				B	5	Medium	Jindabyne Education Campus WHS Plan						The concrete washout area will constantly move on site to suit site conditions. The HY site foreman will determine where the wash out area will be on the day of any concrete pour.					
No designated washout area could result in truck drivers washing out wherever they please leaving the site messy and untidy				D	4	Low	Jindabyne Education Campus WHS Plan						Excess concrete from washing out the pump is to be placed onto plastic, allowed to set then placed into the skip bin with a telehandler					
Concrete cutting / coring - dust				B	4	Medium	Jindabyne Education Campus WHS Plan						Water must be used to minimise dust. Demolition saws take preference over dry cutting with a masonry blade on an angle grinder. Rubble to be cleaned up immediately. Slurry to be cleaned up immediately					
Strike PT cables whilst cutting concrete				B	4	Medium	Jindabyne Education Campus WHS Plan						Review As Built Drawings, consult Structural Engineer and obtain permission to proceed. Erect Cutting and Lifting Permits prior to any works commencing					
Confined Space																		
Poor ventilation inside in-ground pits				C	4	Medium	NWHSC 1009: Safe Working in a Confined Space AS 2865: Confined Spaces NSW Code of Practice: Confined spaces						No chemicals are to be used inside in-ground pits. Close supervision of all men working inside pits at all times. Lid to be kept open at all times. Sparging up of pits is to be conducted as pit doors are installed to minimise the need to enter the pit afterwards. Where pits are left open, lighting and signage is required to clearly identify open pit.					
Workers unable to easily enter and exit trenches				D	3	Medium	Jindabyne Education Campus WHS Plan						All trenches over 1.5m must be benched at 1:1 at a maximum of 1.5m or battered at 45 degrees. A ramp or steps must be put into the trench for easy pedestrian access.					
Workers being overcome by fumes building up in open trenches				D	3	Medium	NSW WHS Regulation 2011: Part 4.3 Confined spaces						All open trenching has good ventilation. Refuelling does not occur inside open trenches. Dry scaffolding equipment is kept clear of open trenching.					
Contaminated Soil																		
Exposure to contaminated soil which has not been identified				C	3	Medium	AS 4482: Guide to the investigation & sampling of sites with potentially contaminated soil NSW Environment Operations Act 1997						All subcontractors that will excavate are to have a SWMS for 'unsuspected finds'. All workers have been instructed at the site induction to stop work immediately and notify Hansen Yuncken site staff whom will take action to make the area safe. All works to be undertaken in accordance with the RAP.					
Exposure to contaminated soil which has not been identified				C	3	Medium	Jindabyne Education Campus WHS Plan						All works to be undertaken in accordance with the RAP.					
Deliveries To Site																		
Delivery vehicle drivers unaware of site hazards				A	4	Medium	NSW Code of Practice: Moving Plant On Construction Sites: 2004						All delivery drivers must complete a delivery driver induction prior to entering site. A delivery driver induction is an abridged induction similar to a visitors induction.					
Delivery vehicle unloading in an unsafe area eg. in an area where there is mobile plant or pedestrians frequently moving past				C	2	Medium	Jindabyne Education Campus Site WHS Plan						The subcontractor supervisor must have good communication with the delivery driver and escort him to the work area where the delivery is to be unloaded. The site supervisor must take charge and assist the driver to unload materials from the truck.					
Pedestrians/ other workers in the area being struck by materials as they are being unloaded from the truck				A	4	Medium	Jindabyne Education Campus Traffic Management Plan						All delivery drivers are told at the delivery driver induction to be aware of any pedestrians/ other workers in the area. Delivery drivers must ensure they have enough space to unload/ load materials from trucks safely. If they have any problems they must notify HY staff immediately whom will assist the driver to undertake their task safely. Subcontractors must manage and supervise their deliveries on site. Subcontractors must spot the driver whilst materials are being unloaded and warn other workers in the area to keep well clear.					
Untrained delivery drivers using plant to unload goods				E	3	Low	Jindabyne Education Campus Site WHS Plan						SWMS must be in place for subcontractors using plant to unload their delivery					
Drugs & Alcohol																		
Persons under the influence of drugs or alcohol are at high risk of injuring themselves or others				E	4	Low	Alcohol and other drugs in the workplace guide - 2006						Persons assumed to be under the influence of drugs or alcohol will be stopped from working immediately. Their employer will be notified who will investigate and take appropriate action as per their drug and alcohol policy.					

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RELEVANT PROCEDURE:				Protect HSE Risk Assessment				RISK ASSESSMENT TABLE		Consequence					
PROJECT:				Jindabyne Education Campus				Likelihood		1	2	3	4	5	
JOB NO:				SN105				A	Very Likely	High	High	High	Medium	Medium	
ASSESSED BY:				Daniel Spirit Jones, Chris Histon, Mick Parker, Matt O'Grady, Tim Redmond				B	Likely	High	High	Medium	Medium	Medium	
ASSESSMENT DATE:				13-Jul-24				C	Possible	High	Medium	Medium	Medium	Low	
								D	Remotely Possible	Medium	Medium	Medium	Low	Low	
								E	Very Unlikely	Medium	Medium	Low	Low	Low	
								NA	Not applicable	NA	NA	NA	NA	NA	
				RISK ASSESSMENT		CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)									
HAZARD (Include additional project specific hazards as required)				L	C	Class	Legislation, Standards & Codes of Practice				Enter Details of Specific Controls Required				
Dust															
Disruption/nuisance to neighbours and client				D	5	Low	NSW Code of Practice: Control Of Workplace Hazardous Substances				Shade cloth installation to site perimeter fence to contain all dust within the construction site.				
Eye injuries and respirable damage to workers				D	4	Low	AS/NZS 1336 Recommended practices for occupational eye protection				Water carts and hoses used to keep dust to a minimum. Plant and trucks to move at low speeds to keep dust settled. Eye protection to be worn for any task that creates large amounts of dust				
Dust from wall chasing				NA	4	NA	AS/NZS 1715 Selection, use and maintenance of respiratory protective devices				Dust must be minimised whilst wall chasing by way of vacuum system. Workers must wear dust mask whilst wall chasing. Rooms are to be swept frequently to minimise dust				
Concrete cutting / coring				E	4	Low	AS/NZS 1716 Respiratory protection devices NSW Cutting & Drilling Concrete & Other Masonry Products 1996 Jindabyne Education Campus WHS Plan				Water must be used to minimise dust. Demolition saws take preference over dry cutting with a masonry blade on an angle grinder. Rubble to be cleaned up immediately. Slurry to be cleaned up immediately. HV Cutting and/or Coring permit in place				
Electricity															
Electrocution from faulty/ damaged electrical equipment				D	1	Medium	AS/NZS 3017: Electrical installations - Testing & inspection guidelines				All power tools/ leads must be visually checked daily and tested and tagged monthly. Damaged leads and power tools are not to be used on site. Leads are to be elevated off the ground to minimise risk of electrical leads being damaged				
Electrocution from faulty/ damaged Distribution boards				NA	1	NA	Jindabyne Education Campus WHS Plan				HV DB Board checklist to be completed for all DB boards. All temporary distribution boards will be inspected, tested and tagged monthly. All RCD's to be padlocked and only reset by a qualified electrician				
Workers tripping on leads				C	4	Medium	AS/NZS 3199 Approval & test specification for cord extension sets				All power leads must be elevated off the ground. A maximum of 5m may be on the ground for general movements in the area whilst using the power tool				
Electrocution from temporary construction wiring being damaged				B	1	High	NSW Low Voltage Electrical Work 2002				All temporary construction must be labelled with yellow temporary construction wiring tape. All temporary construction wiring will be inspected and recorded on the site HSE inspection report weekly				
Working around energised live Substation				B	2	High	AS/NZS 3000: Electrical Installations				All subcontractors conducting excavation works must obtain a permit to dig from HY site staff. A plan with existing underground services must be attached to the permit to dig				
Workers piggy backing leads				C	3	Medium	AS 3012: Electrical Installations - Construction & Demolition Sites				Portable generators must be used if electrical leads cant reach from the DB board to the work area so a power source is close to the work area				
							AS 3190: Approval & test specification - Residual current devices								
							AS/NZS 3001 Electrical installations - Relocatable premises and their site installations								
							NSW: Code Of Practice: Electrical Practices for Construction Work								
							AS3760: 2010 In-service safety inspection and testing of electrical equipment								
							NSW Code Of Practice: Electrical Practices for Construction Work 2007								
Emergency Services Unavailability															
Injured person may not receive first aid treatment in a sufficient amount of time				E	3	Low	WHS Act 2011 Code of Practice: First Aid HY emergency response plan				Emergency contact details are displayed on the site safety notice board in the lunch shed and in the first aid room. All HY site staff have first aid training. Thomas Lees have occupational first aid training and is on-site full time and available by mobile phone. There are 2 type A first aid kits in the site office. One is portable and one is fixed to the wall. There is a defibrillator in the first aid room. The first aid facilities have been setup in accordance with Code Of Practice: First Aid taking into account the number of workers on site, response times and types of injuries which may occur on site				
Site Emergencies				B	3	Medium	WHS Regulation 2011				HY emergency response plan details actions to be taken for different types of emergencies				
Erosion/ Loss of Topsoil															
Sediment entering stormwater systems				E	4	Low	Environmental Protection Act 1994				All stormwater pits to be covered with sediment control fabric. Sediment barrier to be erected around the low perimeter of site perimeter fencing in accordance with the site sediment control plan. Sediment control to be inspected weekly and recorded on the site HSE inspection report. All de-watering of site must be pumped into tanks or tanks. The water must be flocced, tested and approved by HY prior to being pumped into the existing stormwater system. Permit to discharge required to any release into the SW system				
Erosion causing perimeter scaffolding to become unstable				NA	3	NA	Jindabyne Education Campus Environmental Management Plan				All perimeter scaffolding to be checked following significant rainfall and rectified by scaffolder as required				

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				RISK ASSESSMENT		CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)							
HAZARD (Include additional project specific hazards as required)				L	C	Class	Legislation, Standards & Codes of Practice			Enter Details of Specific Controls Required			
Existing services													
Damage to existing services could cause major disruption to the client eg. live power, security cables etc.				D	3	Medium	NSW Code Of Practice: Excavation 2004 Jindabyne Education Campus WHS Plan			Subcontractors are available to repair services in the event they are damaged			
PLANT OPERATORS STRIKING UNDERGROUND SERVICES WHILST UNDERTAKING TRENCHING/ EXCAVATION WORKS				C	1	High	Ausgrid National Standard NS 156 - Working near or around underground cables Jindabyne Education Campus WHS Plan			A permit to dig system is in place on this site. All known existing services have been marked up on the site plans. Pot holing and hand digging must occur when working around existing services. Striking existing underground services has been listed as a hazard on all subcontractor SWMS involving excavation works			
Excavators digging trenches accidentally striking recently installed and charged up hydrant lines throughout the site				E	2	Medium	Jemena Guidelines Construction Activities Near & Over Jemena Gas Networks Assets Jindabyne Education Campus WHS Plan			A plan has been issued to all subcontractors notifying them of existing services			
PPO1 Roadwork Services Reticulation Telstra, NBN, SMRC Water Main, SMRC Sewer, Essential Energy HV				A	1	High	NSW Code Of Practice: Excavation 2004 Jindabyne Education Campus WHS Plan Ausgrid National Standard NS 156 - Working near or around underground cables			Services identified and surveyed through non-destructive digging. Civil design implemented with known impacts to existing services. Asset Owners engaged and coordinated with the road design with mitigation strategies put in place.			
Trench collapse trapping workers													
Eye and hearing damage				E	4	Low	Jindabyne Education Campus WHS Plan			Eye and hearing protection must be worn. Workers must be closely supervised by their supervisor			
Excavation													
Excavation over 1.0m				C	3	Medium	NSW Code Of Practice: Excavation 2000 Hyer Standards - Procedure			All trenches over 1.0m must be benched at 1:1 at a maximum of 1.0m or battered at 45 degrees unless stated otherwise by a geotechnical engineers report. A ramp or steps must be cut into the trench for easy pedestrian access. Shoring boxes to be used for trenches greater than 1.5m deep if benching is not possible			
Large stockpiles of spoil creating blind spots for plant operators and truck drivers				E	3	Low	NSW Code Of Practice: Moving Plant On Construction Sites 2004			Plant operators must neatly stockpile all spoil and limit the height of the stockpile to maintain good vision. Plant operators are to avoid stockpiling spoil next to berms on haul roads.			
Trench collapse trapping workers				C	1	High	AS 2763 Vibration and shock - hand transmitted vibration - guidelines for measurement and assessment of human exposure			Any trenching in unstable ground is to be benched/ battered. If the excavation reaches rock or shale and benching/ battering is not practical geotechnical engineers signoff is required. A ramp must also be cut into the end of trench for emergency access/ egress.			
Plant eg. mobile crane set up too close to a trench could result in trench collapse and plant roll over				C	2	Medium	Jindabyne Education Campus WHS Management Plan			All plant must be set up clear of the zone of influence			
Plant outriggers sinking into ground resulting in plant roll over.				C	1	High	AS 3798 Guidelines on earthworks for commercial & residential developments			Plant must only be set up on solid ground and sufficient pty packing/ sole plates placed underneath outriggers. Sole plates are to be used underneath EWP stabilisers if the ground is soft. Ground conditions to be constantly checked during and after rain fall.			
Open trenches restricting access for vehicles and pedestrians around site				C	4	Medium	NSW Dial Before U Dig Legislation			Pedestrian / vehicle/ plant access must be kept clear at all times around site. Alternative access routes are to be set up prior to trenching across pathways and roadways			
Building materials/ stockpiles stored near trench could result in trench collapse				C	3	Medium				Materials and equipment must not be stored within the zone of influence			
Different trades working in the same area at the same time could strike each other with mobile plant				A	2	High				Daily pre-starts and SWMS detail how to work around moving plant on site including plant used by other trades eg. spotters, barricade the work area, signage etc.			
Damage to existing buildings from vibrations caused by machinery				NA	4	NA				Vibration from earthworks to be monitored by HV and subcontractors			
Formwork													
Formwork collapse				B	1	High	Code of Practice: Formwork			Formwork must be certified by a qualified engineer that it is structurally sound and able to safely support loads that may be applied by the concrete pour, workers, reinforcement & crane tied loads. Once engineer's inspection complete ensure any additional back propping is installed if required. Place plant and materials on formwork and falsework only where allowed for by the design and when the structure or deck is sufficiently constructed so it is able to bear the load			
Fall from heights				A	1	High				Spread first section of joist on beam from intermediate work platform and only access the deck to start tying pty once the joist are down and handrail is in place. Use scaffold to gain access to deck to start tying plywood. When you sheet up to 1.0m from end of joist lay next section of joist. NEVER sheet to the end of the joist even if there is a catch deck in place. Lay joist across bearers fixed at a spacing of 400 maximum to prevent any possibility of falls while construction of the deck. Establish working areas for steelworkers & other trades. A 'formwork only' zone should be maintained behind the leading edge. This zone should be clearly demarcated by signage and a barrier. Protect open penetrations with edge protection (e.g. handrails) or cover securely. Gaskets must mesh with a small aperture (e.g. 50 x 50 mm mesh size or smaller) for small penetrations. Paint pty covers with appropriate warnings (e.g. "PENDING" or similar) and fasten securely.			
Cuts/ impalement on starter bars				B	3	Medium				Safety caps to be fitted to all starter bars whenever there is a risk that a person may fall on one.			
Fall prevention/ arrest equipment													

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			RISK ASSESSMENT		CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)							
HAZARD (Include additional project specific hazards as required)			L	C	Class	Legislation, Standards & Codes of Practice			Enter Details of Specific Controls Required			
Failure of fall arrest equipment			B	1	High	HY emergency response plan AS/NZS 1891: Industrial fall arrest systems and devices			All safety harnesses and lanyards must be visually checked daily. Safety harness is the last form of control and other forms of fall protection should be used such as perimeter scaffolding, EWP, handrails etc. Maintenance and inspection records in subcontractor safety management plans to be kept up to date. Roof anchor points must be certified prior to use. Rescue procedure for rescuing persons in fall arrest must be developed prior to persons using safety harnesses.			

				<b>PROJECT HSE RISK ASSESSMENT</b> This Project HSE Risk Assessment is to be used as a guide when completing the monthly Project High Risk Identification assessment on the HYWAY Site Management Dashboard in accordance with the Project HSE Risk Assessment procedure and should be conducted at the time of Construction programme status to assess hazards and risks for next month. Hazards with residual risk from the Design WHS Risk Assessment (if applicable) are also to be considered.									
RELEVANT PROCEDURE:				Project HSE Risk Assessment			RISK ASSESSMENT TABLE		Consequence				
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JOB NO:				SN105			A	Very Likely	High	High	High	Medium	Medium
ASSESSED BY:				Daniel Spirit Jones, Chris Histon, Mick Parker, Matt O'Grady, Tim Redmond			B	Likely	High	High	Medium	Medium	Medium
ASSESSMENT DATE:				13-Jul-24			C	Possible	High	Medium	Medium	Medium	Low
							D	Remotely Possible	Medium	Medium	Medium	Low	Low
							E	Very Unlikely	Medium	Medium	Low	Low	Low
							NA	Not applicable	NA	NA	NA	NA	NA
				RISK ASSESSMENT		CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)							
HAZARD (Include additional project specific hazards as required)				L	C	Class	Legislation, Standards & Codes of Practice			Enter Details of Specific Controls Required			
Fall from heights													
Workers falling into open trenches	C	3	Medium	AS 1418.1: Cranes, hoists and winches – General Requirements			All open trenches must be boarded off at least 1m from the edge of the trench. Where there are high movements of pedestrians on plan then a solid barrier such as a temporary mesh, water filled barriers or equivalent						
Workers falling into open penetrations (eg in-ground pits)	C	3	Medium	WHS Regulation 2011 Part 4.4 Falls			All penetrations to be covered with and secured and the wording "warn" or "do not remove" sprayed onto the plywood						
Workers falling from ladders	C	3	Medium	NSW Code Of Practice: Managing the risk of falls at workplaces			Ladders are to be used in accordance with the HY ladder policy. Ladders are the last resort for height access and other means of height access should be used eg EWP's, mobile scaffolding, platform ladders etc. Standard A frame ladders can be used but only for short duration works or tight restricted spaces such as small rooms where a scissor lift will not fit. Ladders with 4 steps or less are not permitted on site						
Bricklayers falling from trestle scaffold	C	1	High	AS 4576: Guidelines for scaffolding			Bricklayers must install a handrail to the scaffold and a ladder for safe access/egress. Trestle scaffold must be set up correctly on solid ground						
Fall from scaffold	E	3	Low	AS 1576: Scaffold general requirements			Module stairs to be installed at the same time as decks are installed for safe access to each deck. Handrails must be installed from deck below prior to accessing the deck above. Ends must be closed off with toeboards. Scaffolder will erect danger scaffold incomplete signage until the scaffold is ready for use and a handover certificate has been issued to HY. All trades have been made aware not to alter the scaffold under any circumstances						
Personnel falling into open trenches or off the edges of batters and excavations	D	3	Medium	Jindabyne Education Campus Emergency Response Plan			All open trenches and along the top edge of batters must be boarded off at least 1m from the edge of the trench. Deep trenching must be benched every 1.5m so that a person can only fall a maximum of 1.5m						
Fall from mobile scaffold	B	3	Medium	Scaffold erection guide (comes with scaffold)			All mobile scaffolding must be built as per the manufacturers instructions. Handrails and toeboards must be in place. Any scaffold where a person can fall more than 4m must be erected by a licensed scaffolder						
Workers falling from heights	C	2	Medium	Jindabyne Education Campus WHS Plan			Roof access permit must be obtained by the roofer prior to accessing the roof. Perimeter scaffold or handrail must be in place for fall protection. Safety mesh must be installed correctly as per Code Of Practice: Safe Work On Roofs: Part 1						
Falls into bored piers	B	2	High	AS/NZS 1892 Portable Ladders			Bored piers must be fully covered with plywood or mesh to eliminate risk of workers falling into the hole. Deep excavation signs are to be erected and the are fully boarded off. Best practice is to fill the hole with concrete as soon as possible						
Falling objects													
Pallets of blocks stacked too high could tip over and injure a person	A	4	Medium	Workcover Bricklayers guide			Pallets of blocks must be stacked on level ground no more than 2 pallets high						
Scaffold parts could fall/ be knocked off the deck and injure workers below	NA	2	NA	AS 1576: Scaffold general requirements			All excess scaffold material must remain on the ground. No excess scaffold material is to be left lying on scaffold decks						
Formwork and reo materials falling from deck onto persons below	B	2	High				All FRP materials must be stacked neatly clear from edge of deck. If this is not possible then kick boards must be put in place						
Building material and tools falling from scaffold decks	NA	2	NA	Jindabyne Education Campus WHS Plan			Edge boards to be fixed to all scaffold decks. Materials stored on scaffolding is to be kept to a minimum and removed from decks daily. If possible do not store materials on scaffold at all						
Falling materials from EWPs	A	1	High	AS/NZS 2210 Occupational protective footwear			No worker is to walk underneath an elevated EWP. All EWP operation must have a spotter or the area must be fully barricaded off with red/white tape, bunting or flagging or signage in place						
Loose materials and rocks from walls of trenches falling onto workers within the trench	D	3	Medium	AS/NZS 1800 Occupational protective helmets - Selection, care & use			No access to any open trenches for workers unless the walls of the trench are stable. Goodex sign off required for trenching over 1.5m						
Materials left behind after works finish eg. loose bolts, off cuts etc	B	1	High	AS/NZS 1801 Occupational protective helmets			Work areas at heights must be checked daily and loose items brought down to ground level						
Fauna (protected or endangered species)													
Snakes and insects in long grass	B	3	Medium	Environmental Protection Act Jindabyne Education Campus Environmental Management Plan			Weeds and long grass alongside pedestrian pathways around the site are to be cut back with a regular program						
PPO1 - Nest Boxes	D	5	Low	Jindabyne Education Campus CEMP Jindabyne Education Campus CEMP - Barry Way Road Works Jindabyne Education Campus Barry Way Upgrade - Flora and Fauna Assessment Report			Nest Boxes to be installed supervised by a licensed ecologist on trees inspected and signed off for retention by an ADF Level 3 Arborist. Relocation of existing nest boxes to be inclusive of a preconstruction survey prior to relocation						
PPO1 - Unsexpected Finds, Flora and Fauna	E	5	Low	Jindabyne Education Campus CEMP Jindabyne Education Campus CEMP - Barry Way Road Works Jindabyne Education Campus Barry Way Upgrade - Flora and Fauna Assessment Report			Procedure explained in site induction. Unexpected finds protocol found in Jindabyne Education Campus Barry Way Upgrade - Flora and Fauna Assessment Report						
Weed management				Jindabyne Education Campus Barry Way Upgrade - Flora and Fauna Assessment Report			Weed Management requirements found in Jindabyne Education Campus Barry Way Upgrade - Flora and Fauna Assessment Report						
Fire													
Chemical and fuel spills may cause a fire	E	1	Medium	Jindabyne Education Campus Emergency Response Plan			ABC Powder type fire extinguishers are installed at several locations strategically placed around the site						
Sparks from hot works eg welding, grinding may cause a fire	D	3	Medium	AS 2444: Portable fire extinguishers & fire blankets - selection and location AS/NZS 1850 Portable fire extinguishers - Classification, rating and performance testing			All subcontractors must obtain a hot works permit from HY staff. The permit will detail any controls required for undertaking the task						
Flammable materials stored on site may ignite from hot works in the area	D	2	Medium	NSW Code of Practice: Control Of Workplace Hazardous Substances			Hazardous materials must be stored in cool, dry areas away from ignition sources and flammable material signage installed						
Fuel drums could catch on fire from sources of ignition	B	4	Medium	AS 3745 Emergency control organisation and procedures for buildings, structures and workplaces			Fuel drums are to be put away when not in use in a storage cage in a well ventilated area						
Workers could be seriously injured whilst attempting to extinguish fire	E	1	Medium	AS 2444 Portable fire extinguishers and blankets - Selection & location			All workers are told at site induction not to place themselves at risk and not to try and fight the fire						
Time taken to obtain fire extinguisher in the event of an emergency	D	1	Medium	AS/NZS 1841 Portable fire extinguishers			Fire extinguishers are placed strategically around site for easy/ fast access. Locations of fire extinguishers are on the site layout plan						
Poor maintenance of fire extinguishers	E	1	Medium	AS 2375 Guide to the selection, care & use of clothing for protection against heat & fire			Fire extinguishers are to be tagged every 6 months by a competent person						



## PROJECT HSE RISK ASSESSMENT

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			RISK ASSESSMENT		CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)							
HAZARD (Include additional project specific hazards as required)	L	C	Class		Legislation, Standards & Codes of Practice		Enter Details of Specific Controls Required					
First aid												
Persons unaware of what to do if an individual requires first aid	E	5	Low	WHS Regulation 2011	Emergency response plan posted on site notice board. All workers explained the location of the first aid room and contact details for site first aiders.							
Injured person not receiving first aid treatment quickly enough due to the site being so large	D	3	Medium	Work injury management and workers compensation act 1988	Site staff to communicate by way of mobile phones and 2 way radios. A first aid room is set up in the HY compound area. Within the first aid room is a fixed type A kit and portable type A kit for rapid response. Nurse Cables to be incorporated in work sections and a back-to-base received within the Site Office.							
It may not be possible to take the injured person to the first aid room because of the seriousness of their injuries	E	4	Low	First aid in the workplace: Code of Practice: July 2012	Access routes to be kept clear around site for emergency vehicles.							
Inadequate first aid supply/s	E	3	Low	Jindabyne Education Campus WHS Plan	First aid room to be set up with portable and fixed first type A first aid kits, stretcher, defibrillator, ice packs, sun cream, eye wash and exsanguination couch as per Code of Practice: First Aid.							
Inadequately trained first aiders/ insufficient number of first aiders	E	3	Low	Jindabyne Education Campus Emergency Response Plan	HY Site Foreman must have Apply First Aid type certification. HY Safety Officer must have Occupational First aid certificate.							
Persons working alone unable to raise the alarm	E	3	Low	Jindabyne Education Campus Emergency Response Plan	No person is to work alone. There must be another person in the area at all times. This is told to all workers at site induction.							
Heart attack/ stroke	E	1	Medium	Jindabyne Education Campus Emergency Response Plan	Defibrillator to be kept in first aid room.							
Number of buildings	E	5	Low	Jindabyne Education Campus Emergency Response Plan	6 - 7 - all easily accessible for pedestrians or vehicles.							
Maximum Number of levels on each building	E	5	Low	Jindabyne Education Campus Emergency Response Plan	1 - 2 - All have internal stair access.							
Time taken to walk to furthest point on site	D	4	Low	Jindabyne Education Campus Emergency Response Plan	7-8 minutes from furthest point on site.							
Nearest Hospital	D	4	Low	Jindabyne Education Campus Emergency Response Plan	Cooma Hospital (20kms away - 50 minute drive).							
Nearest Medical centre	D	4	Low	Jindabyne Education Campus Emergency Response Plan	Snowy Mountains Medical Centre.							
Maximum time to medical service	D	4	Low	Jindabyne Education Campus Emergency Response Plan	60 minutes.							
Maximum number of workers	D	4	Low	Jindabyne Education Campus Emergency Response Plan	20-40.							
Number of other persons	E	4	Low	Jindabyne Education Campus Emergency Response Plan	5-Oct.							
Site hours	E	5	Low	Jindabyne Education Campus Emergency Response Plan	7:00am - 6:00pm Monday - Friday. 8:00am - 1:00pm Saturday. No Works on Sundays or Public Holidays. A first aid qualified person from Hansen Yuncken is on site at all times.							
Average hours worked by a worker	E	5	Low	Jindabyne Education Campus Emergency Response Plan	Workers generally work 8-10 hours per day.							
Remote or isolated works	E	4	Low	Jindabyne Education Campus Emergency Response Plan	Workers are not permitted to work alone. There must be at least 2 workers in the same area at all times.							
Types of injuries over the last 12 months	E	4	Low	Jindabyne Education Campus Emergency Response Plan	Majority of types of injuries include: cuts and abrasions, minor eye injuries, insect bites, sprains and strains, back injuries and dislocations.							
Incidents not resulting in injury	E	5	Low	Jindabyne Education Campus Emergency Response Plan	Incidents have occurred where excavator operators have struck existing live underground electrical cables - defibrillator will be required in the event persons are electrocuted.							
Other	E	3	Low	Jindabyne Education Campus Emergency Response Plan	Occasionally workers have fallen off (not work related) however these people are sent to a Doctor for further treatment.							
Cuts and abrasions	C	4	Medium	Jindabyne Education Campus Emergency Response Plan	Type A first aid kit has contents for treating these types of injuries.							
Sprains and strains	D	4	Low	Jindabyne Education Campus Emergency Response Plan	Ice packs and instant cold packs to be available.							
Eye injuries	D	3	Medium	Jindabyne Education Campus Emergency Response Plan	Eye wash station to be set up in first aid room.							
Burns	E	4	Low	Jindabyne Education Campus Emergency Response Plan	Burn cream and non-adherent wound dressings.							
Fractures	D	4	Low	Jindabyne Education Campus Emergency Response Plan								
Dislocations	D	4	Low	Jindabyne Education Campus Emergency Response Plan	Type A first aid kit has triangle slings.							
Poisoning and toxic effect of substances	E	5	Low	Jindabyne Education Campus Emergency Response Plan	Safety data sheets available for all substances used. Chy viva system to be kept in first aid room.							
Heat stroke	D	4	Low	Jindabyne Education Campus Emergency Response Plan	Ice packs and cold water on standby. Subcontractors have been addressed at site induction to take breaks, work in shade whenever possible, job rotation etc.							

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HAZARD (Include additional project specific hazards as required)				L	C	Class	Legislation, Standards & Codes of Practice		Enter Details of Specific Controls Required			
Ground Collapse/poor ground												
Plant roll over from sinking in unstable ground conditions	C	3	Medium	Jindabyne Education Campus WHS Plan		Subcontractors to complete a plant risk assessment prior to operating plant. Plant will not be operated in unstable ground conditions. If the ground is too soft or uneven then the ground will be blasted back to solid ground prior to plant operating on it. All subcontractors must obtain a HV plant setup permit prior to operating plant with outriggers. Concrete boom pumps and mobile cranes must obtain a geotechnical engineers report stating the ground is stable and able to take the weight of the crane and load being lifted. Site to be inspected by the Site Manager and HSB following heavy rain prior to work commencing the next day.						
Vehicles/ plant could become bogged in soft muddy ground	D	4	Low	National Standard For Plant: 10:10 (1994)		Temporary roadways have been rolled and compacted to keep ground stable. No plant to work on unstable ground accessed in wet weather postant to be conducted after each inclement weather event.						
Pedestrian slip and trip hazards from muddy/ uneven ground	E	3	Low	Jindabyne Education Campus WHS Plan		Crusher dust has been spread over pedestrian pathways to minimise slip and trip hazards. Plant is to be used to blade back ruts and muddy ground to minimise slip and trip hazards for workers in the area particularly on rain days.						
Trucks and vehicles tracking mud and dirt onto road from muddy tyres	E	3	Low	Jindabyne Education Campus WHS Plan Jindabyne Education Campus Environmental Management Plan		Cable grid installed at site entrance. High pressure water blaster to be used to wash tyres if required.						
Pedestrians/ workers tripping over in deep wheel ruts left by plant movements	E	3	Low	Jindabyne Education Campus WHS Plan		Wheel ruts are to be blasted/ levelled out to minimise trip hazards around site.						
Identifying frost/ice for potential slip hazard	C	3	Medium			Discussed in Prestart Meetings and Toolbox talks to identify days on site where risk of ice build up is elevated and for raised awareness. Site walk to occur to identify hazards and de-icing to occur where required.						
Hazardous Chemicals												
Spillage of fuels and chemicals	C	3	Medium	AS 1940: The storage and handling of flammable and combustible liquids Jindabyne Education Campus Environmental Management Plan		A spill kit is kept in the site office. Any drums of fuel larger than 20 litres must be banded. All trucks are to set up a hazardous substance storage area next to their site containers with signage erected 'no smoking', 'Danger Fuel Storage Area' etc.						
Unsafe storage of oxy acetylene equipment	C	3	Medium	AS 4332 The storage and handling of gases in cylinders Jindabyne Education Campus Environmental Management Plan		Cylinders and acetylene bottles are to be stored in separate ventilated cages 3m apart at the end of each day and appropriate warning signage erected.						
Mix matched storage of hazardous substances could cause a chemical reaction	C	3	Medium	NWHSC 2017 - 2001 Storage & Handling of Dangerous Goods		Only substances of the same class can be stored together as per the Safety Data sheet for the products.						
				AS 3780: The storage & handling of corrosive substances								
				NWHSC 2011: Preparation of Material Safety Data Sheets								
				Jindabyne Education Campus WHS Plan								
				NSW Code of Practice: Control Of Workplace Hazardous Substances								
				NWHSC 1015 - 2001 Storage & Handling of Dangerous Goods								
				NWHSC 2011 - 2003 Preparation of Material Safety Data Sheets								
				NWHSC 2007 - 1994 Control of Workplace Hazardous Substances								
				NWHSC 2012 - 1994 Labelling of Workplace Hazardous Substances								
				NWHSC 2014 - 1995 Carcinogenic Substances								
Heat stress												
Sun burn	D	4	Low	NSW Code Of Practice Work in hot or cold environments 2001		Sun cream is available in the site office. Sunglers are banned. Workers are encouraged at the site induction to wear long sleeve pants and shirts.						
Hot temperatures may cause persons to become dehydrated resulting in illness, headaches, fainting etc	E	4	Low	NSW Hot & Cold Environments 2001		No conditioned lunch sheds. Subcontractors to work in shaded area wherever possible.						
				NSW Code Of Practice: Managing the work Environment and Facilities								
				Jindabyne Education Campus WHS Plan								
Heavy lifting (over normal crane operation)												

<div>HANSENYUNCKEN</div>		<div>PROJECT HSE RISK ASSESSMENT</div> <div>This Project HSE Risk Assessment is to be used as a guide when completing the monthly Project High Risk Identification assessment on the HYWAY Site Management Dashboard in accordance with the Project HSE Risk Assessment procedure and should be conducted at the time of Construction programme status to assess hazards and risks for next month. Hazards with residual risk from the Design WHS Risk Assessment (if applicable) are also to be considered.</div>											
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HAZARD (Include additional project specific hazards as required)		L	C	Class	Legislation, Standards & Codes of Practice			Enter Details of Specific Controls Required					
Manual handling injuries		E	4	Low	WHS Regulation 2011 Part 4.2 Hazardous Manual Tasks			Team lift for heavy items. Subcontractor's SWMS must list manual handling as a hazard and controls put in place. Mechanical lifts wherever possible.					
Back injuries		E	3	Low	Jindabyne Education Campus WHS Plan			Bend knees, keep a straight back, don't twist					
Block and tackle use		NA	4	NA	NCOP for Manual Tasks 2007 National Standard for Manual Tasks - 2007 NCOP for the Prevention of Musculoskeletal Disorders Caused From Performing Manual Tasks			Use of block, tackle and slings is to be used in accordance with SWMS. Slings are to be wrapped around a solid structure only. Slings to be wrapped by dogman and riggers only.					
					NSW Manual Handling Resource 2004								
					Code of Practice: Hazardous Manual Tasks								
Hot Works													
Sparks from welding, grinding or using oxy acetylene may cause a fire if flammable materials are in the area		C	4	Medium	AS 1674: Safety in welding and allied processes			A hot works permit must be obtained by the subcontractor. All sources of ignition to be removed from the area prior to hot works occurring.					
Fire and injury to others from persons using angle grinders		A	4	Medium	Jindabyne Education Campus hot works permit			Conduct all grinding away from flammable materials and other workers in the area. Be aware of direction of flying sparks.					
Welders flash to other trades		B	4	Medium	Jindabyne Education Campus WHS Plan			Welding screens and warning signage must be erected to protect other trades from welders flash. If others are within a 10m radius of the work area.					
					Code Of Practice: Welding Processes								
Hygiene (poor)													
Unhygienic facilities could result in workers becoming ill and contracting diseases		D	4	Low	NSW Code Of Practice: Managing the work environment and facilities			A cleaner has been engaged by Hansen Yuncken to clean amenities on a daily basis. All amenities to be kept clean and rubbish bins emptied daily.					
Trades not putting rubbish and off cuts in bins provided creating trip hazards		D	4	Low	NSW Code Of Practice: Amenities for construction work 1997			Site Shopdrawings for clean up crews to be implemented. Improvement notices to be issued to subcontractors who do not keep the site neat and tidy.					
Inadequate facilities for general site rubbish		D	4	Low	Jindabyne Education Campus WHS Plan			Skip bins to be placed on site at various locations and changed over regularly.					
Lifting Over Public/outside site													
Injury to pedestrians/ public		NA	4	NA	AS 1742.3-2009: Manual of uniform traffic control devices - Traffic control for works on roads Jindabyne Education Campus WHS Plan Jindabyne Education Campus Traffic Management Plan Road Management Act 2004			No lifting of building materials outside of the construction fence unless traffic control and diversions are in place and the subcontractor has secured approval from the HY Site Manager. Public access ways to be clear of all construction debris. Fences to be kept in satisfactory manner.					
Manual Handling													
Back injuries/sprains and strains		C	3	Medium	HY Glove and clip policy			Team lift for heavy items. Mechanical aids eg. wheelbarrow to be used wherever possible. Building material to be dropped off as close to the work area as possible to minimise carrying distance.					
Cuts to hands		C	4	Medium	WHS Regulation 2011 Part 4.2 Hazardous Manual Tasks			Gloves to be worn for manual handling tasks as per Hansen Yuncken glove & clip policy.					
					NSW Code Of Practice: Hazardous Manual Tasks								
					AS/NZS 2161 Occupational protective gloves								
					Jindabyne Education Campus WHS Plan								

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Mobile Plant															
Mobile plant could strike a pedestrian worker on site	C	1	High	NWHSC 1010: National Standard for Plant				All trades are warned of moving plant at the site induction. High vis vests are to be worn at all times. All workers on site must keep well clear of plant on site and gain the operators attention prior to approaching any plant. Only workers involved with the task are to be with in the work areas of plant. People working within the work area of plant must be visible to the operator at all times.							
Mobile plant could crash into a structure or open trench	D	3	Medium	Jindabyne Education Campus WHS Plan				Trained, experienced, qualified workers to operate plant only. Plant operator competency statement to be issued to HY for any plant which does not require a legislated ticket.							
Pedestrians/ workers being struck by mobile plant	C	1	High	AS 2294 Earth moving machinery - Protective Structures AS 4602 High Visibility Safety Garments				A combination of controls must be put into place and detailed in subcontractors SWMS eg. barricade the area, erect signage, use a spotter etc. Bunted off pedestrian pathways have been erected on site to keep pedestrians clear of areas where there are high movements of vehicles/trucks and plant. All subcontractors using moving plant must have a SWMS which details how to protect other workers in the area from being struck by the plant. All plant must have a flashing light, horn and reversing beepers/packager. Vehicles/trucks must turn their flashing lights on. There is a 10km/h speed limit on site. All workers have been told at the site induction to be aware of moving plant on site and keep clear whenever possible. Only workers who are involved with the task are to be in the vicinity of the plant. HY have instructed all subcontractors to train their workers through pre-start meetings on how to approach moving plant and equipment. Access routes for plant and vehicles are to be maintained. Pedestrians are to walk along the side of access routes whenever possible. Plant operators are to keep reversing to a minimum. Pedestrians that need to approach moving plant are to do so from the front of the machine and are to gain the operators attention by making verbal contact and eye contact with the operator. No person is to approach the machine until the operator has stopped moving the machine and signalled that it is safe to approach. Spotters working with machines must always stand in an area where they are visible to the operator.							
Plant roll over on unstable ground	E	3	Low	Model Code of Practice - Managing the Risks of Plant in the Workplace				Plant operator and HY site staff must assess conditions and determine if the ground is stable for plant. If the plant has out riggers then they must be fully extended. Subcontractors must obtain a plant setup permit from Hansen Yuncken prior to setting up any plant with outriggers eg. concrete boom pumps, cranes, forklifts etc.							
Possibility of scissor lift being driven off edge of concrete slab resulting in scissor lift tipping over	NA	2	NA	Model Code of Practice - Managing the Risks of Plant in the Workplace				A timber bump stop must be installed to the edge of the slab whenever EWPs are used close to the edge of a slab.							
Crushing Injury from scissor or boom lift	NA	1	High	Model Code of Practice - Managing the Risks of Plant in the Workplace				Provide onsite training, instruction and supervision Pre-starts and Toolbox talks to be done as consultation with person's affected by the controls outlined. Only person's with EWP ticket to operate Scissor Lift No Person to work isolated or alone on an EWP 2 person team as a minimum - whilst using a EWP, 1 person to spot and also assist with task. All Personnel to be trained by a qualified person from the hire company on the specific EWP, as not all EWPs are the same. Prior to use, completion of a logbook check is to be done. All faults are to be immediately reported to supervisor and machine is to be tagged out. Personnel using EWP must be aware of the emergency response protocol of that specific EWP. Person operating scissor lift must be able to communicate clearly to spotter/work partner/team.							
PPO1 - Mobile Plant adjacent Roadworks and live traffic resulting in collision	E	2	Medium	Jindabyne Education Campus Traffic Management Plan Council Approved TGS's Hansen Yuncken Hyer Standards for Traffic Management Code of Practice:Construction Work				Council approved TGS's to be implemented and enforced. Workforce/Mobile Plant separation of moving vehicles of minimum 1.5m in 40km live traffic on public roadways as per requirements.							
Needle stick Injury															
Injured person could contract a disease	E	2	Medium	NSW Code Of Practice: HIV and other blood-born pathogens in the workplace				Workers injured by needle stick to be sent to the nearest medical centre/hospital							
Workers unaware of what to if a needle is found	E	4	Low	Jindabyne Education Campus WHS Plan				Workers to be told at site induction that if they find a needle on site they are not to touch it and report it to HY staff immediately.							
Inadequate disposal facilities for needles found on site	E	4	Low	NSW: Code Of Practice: Work Place Amenities				Sharps clean up kit to be kept in site office at all times.							
Noise															
Hearing damage from general construction noise eg. power tool usage, jack hammering etc.	B	3	Medium	AS/ANZ 1269: Occupational Noise Management				Hearing protection to be worn when using power tools or loud equipment. Signage to be erected to warn other trades of excessive noise. A noise monitor is available in the site office. The noise monitor is available for use on site safety walks.							
Disruption to client and neighbours	D	5	Low	NWHSC 1007 - 2000 National Standard for Occupational Noise NWHSC 2009 - 2004 Noise Mgt & Protection of Hearing at Work				Notice of disruption to be issued to client if required. Work to be conducted within approved hours of 0500-157000hrs Conditions only							
				AS/NZS 1269 Occupational noise management AS/NZS 1270 Acoustics - hearing protectors AS 2436 Guide to noise control on construction, maintenance & demolition sites											
				NSW Noise Management & Protection of Hearing at Work 1996											
				AS 2436: Guide to noise control on construction, maintenance & demolition sites											
				AS 2012: Acoustics – Measurement of Airborne Noise Emitted by Earthmoving Machinery & Agricultural Tractors											
				Jindabyne Education Campus WHS Plan											
				AS/NZS 1270: Acoustics - hearing protectors											
Overhead Power lines															
Power lines over main entry to site	NA	4	NA	Jindabyne Education Campus WHS Plan				All plant and workers must keep clear of overhead power lines as per Code of Practice: Work near overhead power lines.							
				NSW Code of Practice: Work near overhead power lines 2006											

HANSENYUNCKEN				PROJECT HSE RISK ASSESSMENT											
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RELEVANT PROCEDURE:				Protect HSE Risk Assessment				RISK ASSESSMENT TABLE		Consequence					
PROJECT:				Jindabyne Education Campus				Likelihood		1	2	3	4	5	
JOB NO:				SN105				A	Very Likely	High	High	High	Medium	Medium	
ASSESSED BY:				Daniel Spirit Jones, Chris Histon, Mick Parker, Matt O'Grady, Tim Redmond				B	Likely	High	High	Medium	Medium	Medium	
ASSESSMENT DATE:				13-Jul-24				C	Possible	High	Medium	Medium	Medium	Low	
								D	Remotely Possible	Medium	Medium	Medium	Low	Low	
								E	Very Unlikely	Medium	Medium	Low	Low	Low	
								NA	Not applicable	NA	NA	NA	NA	NA	
				RISK ASSESSMENT		CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)									
HAZARD (Include additional project specific hazards as required)				L	C	Class	Legislation, Standards & Codes of Practice				Enter Details of Specific Controls Required				
Plant & Equipment															
Plant failure may cause serious injury to workers				D	3	Medium	NWHSC 1010: National Standard for Plant				HY plant verification reports to be completed for all plant. Maintenance records to be submitted to HY as evidence machine is safe for operation. Plant risk assessments to be conducted for all high risk work. Plant operators must conduct pre-start safety inspections of their machine daily and report faults to their supervisors.				
Poorly maintained ladders and scaffolding failing/ collapsing				D	3	Medium	AS/NZS 1892: Portable Ladders				No timber ladder on HY sites. Ladders must be in good condition. Electrocare must use fibre glass ladders. All workers are aware of the HY ladder policy posted on the wall in the lunch shed. Extension ladders must be tied off at the top landing. Scaffolding to be visually checked daily and full inspection monthly or after adverse weather.				
Use of damaged ladders				D	3	Medium	AS 4576: Guidelines for scaffolding				Ladders to be checked for damage weekly on the site safety walk.				
Lifting gear failure				D	1	Medium	AS/NZS 4994: Temporary edge protection				All lifting gear - soft slings, lifting chains must be visually checked daily prior to use for damage. Damaged lifting gear is to be withdrawn from service.				
Scaffold collapse/ fall from scaffold				NA	1	NA	AS/NZS 1891.1 2007 Industrial fall arrest systems - harnesses and ancillary equipment				Scaffold handover certificate to be issued to HY prior to anyone accessing the scaffold. Scaffold to be inspected minimum monthly and after heavy rain. Monthly handover certificates to be provided. Scaffold will also be inspected on weekly safety walks. Mobile scaffolds to be built as per manufacturers instructions. Scaffold where a person can fall more than 4m must be erected by a licensed scaffolder. No person is to alter the scaffold what so ever. Any issues with scaffold is to be reported to the Site Manager immediately.				
Multiple mobile plant interaction/ contact				D	1	Medium	Jindabyne Education Campus WHS Plan				Plant operators must communicate by way of 2 way radios, eye contact and spotters.				
Vehicle and plant exhaust fumes				D	4	Low	HY ladder policy				Use of electric power tools inside buildings only. All other diesel powered machines are used in open well ventilated areas.				
Post Tensioning															
Accidental drilling or cutting into PT cable				NA	2	NA					All subcontractors to obtain permit to cut concrete core. This permit will detail location of PT cables if applicable. Drones to be used to photograph PT decks just prior to concrete pour.				
Plant & Equipment Washout															
Water from cleaning plant and equipment creating a muddy/ slippery surface				D	4	Low	Environmental Protection Act 1994				Washout area to be determined on a daily basis as the site changes. The wash out area must not allow water to flow over pedestrian foot paths.				
Muddy and contaminated water entering stormwater system				D	4	Low	HY environmental management plan				Sediment control to be placed around the washout area.				
Pressurised Gas Mains															
Excavator buckets striking UNDERGROUND GAS LINES				D	1	Medium	NSW Code Of Practice: Excavation Work 2000				A permit to dig system is in place on this site. All known existing services to be marked up on the site plans. Pro hitting must occur when working around existing services. Only toolless buckets are to be used when digging in the vicinity of gas lines. Striking existing underground services has been listed as a hazard on all subcontractor SOWMS involving excavation works.				
							Jindabyne Education Campus WHS Plan								
							Jemena guidelines construction activities near and over Jemena has network assets								
Live Gas Tank struck by Mobile Plant				E	4	Low	Hansen Yuncken Hyer Standard - Mobile Plant				Trained operators of Mobile Plant. Safety in Design with barriers and an exclusion zone surrounding Gas tank.				
Scaffold															
Fall from heights over 2m				NA	1	NA	WHS Regulation 2011: Part 3.1 Managing risks to health and safety								
Fall from heights whilst forming up and pouring concrete				NA	3	NA	AS4576: Guidelines for scaffolding								
Insufficient safe means of access onto Ground Floor Slab from Basement Slab level				NA	5	NA	AS1576: Scaffold general requirements								
Insufficient egress from building in the event of an emergency				NA	5	NA	Jindabyne Education Campus WHS Plan								
Inadequate development of scaffold plan				NA	5	NA									
Possible scaffold overload resulting in scaffold collapse - materials and workers				NA	4	NA									
Scaffold sinking into soft ground compromising structural integrity				NA	3	NA									
Sediment and erosion control															
Mud, dirt and sediment polluting stormwater systems				C	4	Medium	Environmental Protection Act 1994				HY Sediment Erosion Control Plan				
Mud, dirt and sediment polluting stormwater systems				C	4	Medium	Jindabyne Education Campus Environmental Management Plan				Silt barriers to be installed around low areas of site to catch all rain fall. All stormwater pits to be covered in silt control. All vehicles tyres must be washed clean of mud prior to leaving site. Silt socks to be placed in front of stormwater drains in gutters. Inspections to be carried out weekly by HY using the Site HSE inspection report.				

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RELEVANT PROCEDURE:				Protect HSE Risk Assessment			RISK ASSESSMENT TABLE		Consequence				
PROJECT:				Jindabyne Education Campus			Likelihood		1	2	3	4	5
JOB NO:				SN105			A	Very Likely	High	High	High	Medium	Medium
ASSESSED BY:				Daniel Spirit Jones, Chris Histon, Mick Parker, Matt O'Grady, Tim Redmond			B	Likely	High	High	Medium	Medium	Medium
ASSESSMENT DATE:				13-Jul-24			C	Possible	High	Medium	Medium	Medium	Low
							D	Remotely Possible	Medium	Medium	Medium	Low	Low
							E	Very Unlikely	Medium	Medium	Low	Low	Low
							NA	Not applicable	NA	NA	NA	NA	NA
				RISK ASSESSMENT		CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)							
HAZARD (Include additional project specific hazards as required)				L	C	Class	Legislation, Standards & Codes of Practice			Enter Details of Specific Controls Required			
Site Lighting													
Sun glare restricting plant operators visibility				C	4	Medium	WHS Regulation 2011			Sunglasses to be worn by plant operators as required. Certain tasks may also be conducted at different times of the day to stop the sun becoming an issue.			
Lighting (Poor)				NA	5	NA	NSW Code Of Practice: Managing the work Environment and Facilities			Ensure that task area has adequate natural light and if natural light is not adequate provide artificial lighting			
Slips/Trips													
Workers slipping or tripping on rough/ uneven/ muddy/ slippery ground				C	3	Medium	AS/NZS 2210 Occupational protective footwear Jindabyne Education Campus WHS Plan			Pedestrian pathways to be kept clear of rubbish and material. Safe access around site to be maintained at all times. Gravel crusher dust to be placed on slippery/ muddy surfaces. Blading back of ruts and muddy ground conditions to be conducted as required. Barred off pedestrian pathways are installed around main access routes throughout site for safe pedestrian access, this way people can use the pathway then branch out to their specific work area with minimal risk of slipping over in muddy conditions. During colder weather access ways are to be checked for potential snow/ice/slush pathways. These are to be reviewed by SM and PM to determine alternate access route to eliminate any risks of slips and falls.			
Structural Support													
Masonry walls collapsing in high winds				NA	1	NA	National Code of Practice for Precast, Tilt Up and Concrete Elements in Building Construction 2008			Masonry walls must be adequately braced with timbers every 2m until core filled			
Formwork collapse				NA	1	NA	AS 3850:Tilt Up Concrete Construction			Engineers sign off required to pouring of any concrete			
Precast concrete panel collapse if structural steel is inadequately braced				NA	1	NA	NSW Code of Practice: Formwork 1998			Structural steel must be signed off by engineer prior to installation of precast concrete panels			
Structural steel collapse				NA	1	NA	AS 4991: Lifting devices			Structural steel must be erected by qualified dogmen and riggers. Subcontractor must submit ITP's to Hansen Yuncken. Hansen Yuncken to complete QC Compliance audit report: Structural Steel checker			
Synthetic fibres													
Unsafe handling of roof insulation				NA	4	NA	NSW Code of Practice: Safe use of synthetic mineral fibres			Install roof insulation as per Safety Data Sheet and SWMS			
Temperature Extremes													
Dehydration				E	3	Low				Workers are encouraged to drink plenty of water. Water bubbler available at site lunch shade			
Sunburn				C	3	Medium				Workers must wear sun shirt on site. Singlets are not allowed. Sun cream is available to everyone and is kept in the site office			
Heat stress				E	3	Low				Workers are encouraged to work in the shade whenever possible and take regular breaks whenever required.			
Tilt –up or Precast Concrete Work													
Structural steel support collapse				A	1	High	AS 3850:Tilt Up Concrete Construction			HY precast panel installation checklist must be completed and all relevant documentation submitted, reviewed and approved by HY prior to installation of precast panels			
Injury to other workers/ trades				B	1	High	AS 4991: Lifting devices			Precast panel installation must be closely monitored by HY Management and conducted in accordance with SWMS. The work area around the crane must be clearly closed off to other trades with burning, tagging or red/white tape. Spotters must be used to			
Plant failure				B	1	High	National Code of Practice for Precast, Tilt Up and Concrete Elements in Building Construction 2008			All maintenance records and plant safety verification reports must be maintained and kept up to date			
Failure of lifting points on precast panels				C	1	High	AS 2550: Cranes, hoists & winches - Safe Use			Subcontractor ITP's must be submitted and reviewed by HY prior to erection of precast panels. engineered lifting points used to install precast. Lifting gear register in place			
Concrete may not have cured to specified strength				C	2	Medium				HY precast panel installation checklist must be completed and all relevant documentation submitted, reviewed and approved by HY prior to installation of precast panels			
Crane roll over on unstable ground				B	1	High	AS 1418.1: Cranes, hoists and winches – General Requirements			Third safety permit must be obtained by subcontractor prior to standing crane			
Exceed SWL of crane				B	2	High	AS 2321: Short link chain for lifting purposes			Work to SWL chart for crane at all times			
Lifting gear failure				A	3	High	National Code of Practice for Precast, Tilt Up and Concrete Elements in Building Construction 2008			Riggers must inspect all lifting gear prior to use. Damaged lifting equipment must not be used. Lifting gear registers and certificates must be issued to HY prior to use			
Poor communication between crane operator and dogmen				C	3	Medium				Dogmen and crane operator to constantly communicate with each other. Crane operator to take directions from dogmen only.			
Unloading on Materials on roadway causing dmage or impact				C	3	Medium	AS 1418.1: Cranes, hoists and winches – General Requirements AS 4991: Lifting devices National Code of Practice for Precast, Tilt Up and Concrete Elements in Building Construction 2008 Hansen Yuncken Hyer Standard - Mobile Plant Hansen Yuncken Hyer Standard - Cranes and Lifting Hansen Yuncken Hyer Standard - Precast and Tilt Up Hansen Yuncken Hyer Standard - Transport and Deliveries			HY plans and policies to be adhered to when organising and unloading deliveries. HY plans and policies to be adhered to when installing precast items. TGSs and traffic management plans to be followed when working adjacent live traffic.			

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RELEVANT PROCEDURE:				Protect HSE Risk Assessment				RISK ASSESSMENT TABLE		Consequence				
PROJECT:				Jindabyne Education Campus				Likelihood		1	2	3	4	5
JOB NO:				SN105				A	Very Likely	High	High	High	Medium	Medium
ASSESSED BY:				Daniel Spirit Jones, Chris Histon, Mick Parker, Matt O'Grady, Tim Redmond				B	Likely	High	High	Medium	Medium	Medium
ASSESSMENT DATE:				13-Jul-24				C	Possible	High	Medium	Medium	Medium	Low
								D	Remotely Possible	Medium	Medium	Medium	Low	Low
								E	Very Unlikely	Medium	Medium	Low	Low	Low
								NA	Not applicable	NA	NA	NA	NA	NA
				RISK ASSESSMENT		CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)								
HAZARD (Include additional project specific hazards as required)				L	C	Class	Legislation, Standards & Codes of Practice				Enter Details of Specific Controls Required			
Traffic Management														
Vehicles/ trucks speeding on site	B	3	Medium	AS 1742.3-2009: Manual of uniform traffic control devices - Traffic control for works on roads				10km/h speed limit signs are erected around site. Drivers must give way to pedestrians. Delivery driver inductions for all drivers entering site. Hazard or flashing lights must be turned on						
Vehicles parking and blocking access roads	B	4	Medium					Vehicles to be used for loading/unloading purposes only and are to be parked off site if not required for work purposes. All these controls need to be identified on site layout plan and communicated to all workers at site induction						
Blind spots creating collisions between vehicles	E	3	Low					Warning signs to be erected at blind spots. All these controls need to be identified on site layout plan and communicated to all workers at site induction						
Pedestrians entering site being struck by trucks and vehicles	A	2	High					A fenced off pathway with signage has been installed along the driveway from the street to the site office to keep all pedestrians off the road used by plant and trucks. Pedestrians and vehicles have been separated through entry via by way of concrete jersey kerbs						
PPO1 - Roadworks Traffic Management	E	5	Low	Council Approved TGSS Hansen Yuncken Hyer Standard - Transport and Deliveries Hansen Yuncken Hyer Standard - Traffic Management AS 1742.3-2009: Manual of uniform traffic control devices - Traffic control for works on roads				Daily traffic control checks to be completed by Subcontractor and reported to Hansen Yuncken. Weekly checks and at milestones dates to be completed by Hansen Yuncken. TGSS and traffic management plans to be followed when working adjacent live traffic i.e. separation of workers, 40km/h speed limits, exclusion zones etc.						
Tree lopping														
Tree lopping	NA	4	Medium					Area to be delineated and HROW for falling from heights and Plant and Equipment						
Vehicle & plant exhaust fumes														
Workers overcome by exhaust fumes from plant	E	1	Medium	NSW Code of Practice: Control Of Workplace Hazardous Substances				Plant to be operated in open areas with good ventilation only. Electric scissor lifts to be used inside buildings only. No petrol diesel powered equipment used inside buildings						
Ventilation (poor)														
Workers overcome by fumes when using chemicals	E	1	Medium	NSW Code of Practice: Control Of Workplace Hazardous Substances AS/NZS 1715 Selection, use and maintenance of respiratory protective devices AS/NZS 1716 Respiratory protective devices				MSDS to be read and understood by all workers prior to work commencing						
Violence														
Workers arguing and fighting	D	4	Low	Violence in the workplace guide 2002				Zero tolerance for fighting on site - instant dismissal						
Waste Management/ Littering														
Inadequate bins on site to dispose of rubbish	E	3	Low	WHS Act/ Regulation 2011				Skip bins to be placed at various locations around site which are easy to access. Bins for food scraps are to be placed at the front of all lunch sheds						
Bins attracting rodents	D	4	Low					Food scrap bins to be bagged and changed regularly						
Having to walk long distances to dispose of rubbish	D	4	Low					Numerous skip bins to be on site close to all work areas						
Workers littering the site with rubbish and off cuts instead of disposing of rubbish in bins provided	D	4	Low					Supervisory improvement notices to be issued to subcontractors who leave the site untidy						
Water Contaminants														
Clean water around site becoming contaminated with mud	E	4	Low					Clean rain water is diverted around site by way of swales and sediment control						
Working at Height above 2m														
Workers dropping tools and material onto persons below	C	1	High	NSW Code of practice: Safe work on roofs part 1				Danger workers above signage to be erected. If there are other trades in the immediate area then red/white tape will be erected to create an exclusion zone						
Scaffolders falling from heights during erection process	B	1	High	WHS Regulation 2011 Part 4.4 Falls				Install handrail, mid-rails and toe-boards where scaffolders are working from deck below while building using the approved control methods such as the 1m rule or Advanced guardrail systems						
Perimeter scaffold collapse	NA	1	NA	AS 4576: 1995 Guidelines for scaffolding				Check and confirm the suitability of the subgrade prior to basing out the scaffolding Confirm areas where trenches have been laid Visually check ground for stability, use sole boards where required or get others to compact areas Do not allow scaffold to exceed 4.0 m in height without being tied to the structure and braced or stabilised to an approved design Do not allow standards to be erected and left unsupported Each standard will be braced in a minimum of two directions. A brace is defined as a ledger or transom Scaffolds from which a person can fall more than 4 metres must be constructed and certified by a licensed scaffolder Secure materials at height & isolate areas below where there is risk of falling objects causing injury to persons below No scaffold alterations are to be undertaken except by licensed scaffolder Close off access to incomplete scaffolds, for example, install tube barricades and warning signs "Scaffold Incomplete" Ensure all scaffold is checked and secure before issuing handover ticket and attaching Scafftag						
Workers falling from roof	A	1	High	HY HSE procedure 9.46 Working at height				Roof access permit must be obtained by the workers prior to accessing the roof. Perimeter scaffold or handrail must be in place for fall protection. Safety mesh must be installed correctly as per Code Of Practice Safe Work On Roofs: Part 1						
Mobile scaffold collapse	B	1	High	NSW Code of Practice: Managing the risk of falls at workplaces										
Workers falling from perimeter scaffold	NA	1	NA	AS 1577 Scaffold Planks				Perimeter scaffolds to be inspected weekly using the site HSE inspection report. All workers are advised at site induction strictly not to alter any scaffolding						
Fall from ladder	C	3	Medium	AS/NZS 4488 Industrial rope access systems - Selection, use & maintenance				Ladders must be used in accordance with HY ladder policy. An Access has been issued on ladder use to all subcontractors. EWP's, mobile scaffold and platform ladders take first preference over standard A frame ladders.						
Fall from EWP/ boom lift	B	1	High	AS/NZS 1891 Industrial fall arrest systems & devices AS/NZS 4994 Temporary edge protection				WP ticket required to operate boom lift >11m. EWP/PA yellow car required for EWP <11m. Ground conditions to be checked prior to operation. Harnesses and lanyards must be maintained and kept in good condition						
Fall from scissor lift	B	1	High	NWHSC - Prevention of Falls in General Construction 2008				Timber or angle to be installed to the edge of concrete slabs to stop scissor lifts accidentally being driven off edge of slab. Scissor lift operators must have a EWP/PA yellow card or WP type ticket. Stabilisers and side plates must be used for rough terrain scissor used on soft ground						



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RELEVANT PROCEDURE:	<a href="#">Project HSE Risk Assessment</a>			RISK ASSESSMENT TABLE		Consequence					
PROJECT:	Jindabyne Education Campus			Likelihood		1	2	3	4	5	
JOB NO:	SN105			A	Very Likely	High	High	High	Medium	Medium	
ASSESSED BY:	Daniel Spirit Jones, Chris Histon, Mick Parker, Matt O'Grady, Tim Redmond			B	Likely	High	High	Medium	Medium	Medium	
ASSESSMENT DATE:	13-Jul-24			C	Possible	High	Medium	Medium	Medium	Low	
				D	Remotely Possible	Medium	Medium	Medium	Low	Low	
				E	Very Unlikely	Medium	Medium	Low	Low	Low	
				NA	Not applicable	NA	NA	NA	NA	NA	
	RISK ASSESSMENT		CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)								
HAZARD (Include additional project specific hazards as required)	L	C	Class	Legislation, Standards & Codes of Practice		Enter Details of Specific Controls Required					
Inadequately installed roof perimeter handrail	B	1	High	NSW Identification Tool for Aluminium Mobile Scaffolds 2008		Installation certificate must be issued to HY prior to any worker accessing roof. Installation manual to be available on site so it can be confirmed the handrail has been installed as per the manufacturer's specifications.					

## PROJECT HSE RISK ASSESSMENT

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RELEVANT PROCEDURE:				Project HSE Risk Assessment		RISK ASSESSMENT TABLE		Consequence				
PROJECT:				Jindabyne Education Campus				Likelihood		1	2	3
JOB NO:				SN105		A	Very Likely	High	High	Moderate	Minor	Insignificant
ASSESSED BY:				Daniel Spirit Jones, Chris Histon, Mick Parker, Matt O'Grady, Tim Redmond		B	Likely	High	High	Medium	Medium	Medium
						C	Possible	High	Medium	Medium	Medium	Low
ASSESSMENT DATE:				13-Jul-24		D	Remotely Possible	Medium	Medium	Medium	Low	Low
						E	Very Unlikely	Medium	Medium	Low	Low	Low
						NA	Not applicable	NA	NA	NA	NA	NA
				RISK ASSESSMENT		CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)						
HAZARD (Include additional project specific hazards as required)				L	C	Class	Legislation, Standards & Codes of Practice		Enter Details of Specific Controls Required			
Potential Emergencies - preparation for and response to potential emergency events assessed high or medium risk to be defined in the Emergency Response Plan												
Arrested fall in a harness	B	2	High	HY Procedure for Emergency Response		An individual who is being hoisted in both the main frame a rescue procedure as part of their training. Generally rescue will be by using the ground controls at the base of the machine or by using a second boom lift to retrieve the suspended casualty.						
Bomb threat	E	4	Low	HY Procedure for Emergency Response		Procedure for bomb threats is part of the HY Emergency Response Plan						
Confined Space Rescue	E	3	Low	HY Procedure for Emergency Response		Procedure for confined space rescue is part of the HY Emergency Response Plan						
Cyclone	NA			HY Procedure for Emergency Response		NA as the Jindabyne Education Campus Project						
Drowning	E	5	Low	HY Procedure for Emergency Response		Rescue will be by the designated staff to any person working in around the area						
Electric shock	D	1	Medium	HY Procedure for Defibrillators		Refer to the procedure detailed in the HY Emergency Response Plan						
Emergency services unavailability				HY Procedure for Emergency Response								
Fire	D	2	Medium	AS 3745 Emergency control organisation and procedures for buildings, structures and workplaces AS/NZS 1221 Fire hose reels AS/NZS 1841 Portable fire extinguishers AS/NZS 1850 Portable fire extinguishers - Classification, rating and performance testing AS 1851 Maintenance of fire protection systems & equipment AS 2375 Guide to the selection, care & use of clothing for protection against heat & fire AS 2444 Portable fire extinguishers and blankets - Selection & location		Fire procedure detailed in the HY emergency response plan						
First Aid (inadequate resources)	E	3	Low	HY Procedure for Emergency Response		First aid room to be set up with portable and fixed first type A first aid kits, stretcher, defibrillator, ice packs, sun cream, eye wash and examination couch as per Code of Practice: First Aid. (Refer to first aid assessment)						
Gas line contact or damage	D	2	Medium	HY Procedure for Emergency Response		Refer to the procedure detailed in the HY Emergency response plan						
Major rock fall/landslip	E	4	Low	HY Procedure for Emergency Response		Refer to the procedure detailed in the HY Emergency response plan						
Major Fuel/Chemical Spill	E	3	Low	HY Procedure for Emergency Response		Refer to the procedure detailed in the HY Emergency response plan						
Medical Emergency	D	3	Medium	HY Procedure for Emergency Response		Medical emergency is part of the HY emergency response plan						
Overhead power line contact or arcing	NA	5	NA	HY Procedure for Emergency Response		Contact with overhead power lines is part of the HY emergency response plan						
Precast Panel Collapse	NA	1	NA	HY Procedure for Emergency Response		Precast panel collapse is part of the HY emergency response plan						
Structural failure/collapse	NA	1	NA	HY Procedure for Emergency Response		Structural collapse is part of the HY emergency response plan						
Trench collapse	D	1	Medium	HY Procedure for Emergency Response		Trench collapse is part of the HY emergency response plan						
Other:												

## A.5 Construction Traffic and Pedestrian Management Sub-plan (CTPMSP)



Construction Traffic & Pedestrian Management Sub-Plan  
Jindabyne Education Campus  
for  
Hansen Yuncken

## Document Control

**Project No:** 0338  
**Project:** Jindabyne Education Campus CTPMSP  
**Client:** Hansen Yuncken  
**File Reference:** P0338r1v6 Jindabyne Education Campus CTPMSP

## Revision History

Revision	Date	Details	Approved by
v1	6/10/2022	Draft 1	A. Reisch
v2	14/10/2022	Draft 2	A. Reisch
v3	24/10/2022	Final 1	A. Reisch
v4	11/11/2022	Final 2	A. Reisch
v5	14/02/2023	Final 3	A. Reisch
v6	10/07/2023	Final 4	A. Reisch

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**Appendix E:** Drivers Code of Conduct

# 1 Introduction

## 1.1 Overview

arc traffic + transport has been engaged by Hansen Yuncken to prepare a Construction Traffic & Pedestrian Management Sub-Plan (**CTPMSP**) to provide for the safe and efficient construction of the Jindabyne Education Campus (the **Campus**) at 207 Barry Way, Jindabyne (the **Site**).

Full details of the Campus development are provided in State Significant Development 15788005 (the **SSD**) and subsequent **SSD Approval** prepared by the Department of Planning & Environment (**DPE**). This revision to the CTPMSP, dated 10 July 2023, has been prepared to include:

- A revised Campus Master Plan;
- A revised Campus Active Transport Plan; and
- Details of identified easements within and adjacent to the Site.

Importantly, these revisions have no material impact on the construction traffic management measures as detailed in the CTPMSP (previous version dated 31 October 2022) but are provided only to show the minor changes to the key Campus plans, and to identify the easements, access to which would be appropriately provided throughout the construction period. The identification of the easements will not result in any changes to construction vehicle access to or through the Site.

As such, the revisions provided in the CTPMSP are limited to:

- Figure 3 (the Campus Master Plan);
- Figure 4 (the Campus Active Transport Plan); and
- A new Section 4.1.4 which identifies the location of the easements.

## 1.2 CTPMSP Author

This CTPMSP has been prepared by Anton Reisch, Director of arc traffic + transport, with additional input provided by Ben Midgley, Principal Traffic Engineer at PDC Consultants. Curriculum Vitae's for each author are provided in Appendix A.

## 1.3 CTPMSP Condition of Consent

In accordance with the SSD Consent, this CTPMSP is provided as a *Sub-Plan* to the broader Construction Environmental Management Plan (**CEMP**) being prepared by Hansen Yuncken, and provides an assessment of the relevant access, traffic and parking characteristics of the construction of the Campus in accordance with the SSD Approval.

This CTPMSP specifically provides a response to the **Conditions** detailed in the SSD Instrument of Consent (**SSD Consent**) dated 10 August 2022. In this regard, Table 1 provides a summary of the individual Conditions relating to the CTPMSP, and the section of this CTPMSP where each is addressed.



Table 1: SSD Approval Conditions

Condition	Condition Requirement	Document Reference
<b>B16</b>	<p><i>The Construction Traffic and Pedestrian Management Sub-Plan (CTPMSP) must be prepared to achieve the objective of ensuring safety and efficiency of the road network and address, but not be limited to, the following:</i></p> <p><i>(a) be prepared by a suitably qualified and experienced person(s);</i></p> <p><i>(b) be prepared in consultation with Council and TfNSW;</i></p> <p><i>In detail:</i></p> <p><i>(i) measures to ensure road safety and network efficiency during construction in consideration of potential impacts on general traffic, cyclists and pedestrians and bus services;</i></p> <p><i>(ii) measures to ensure the safety of vehicles and pedestrians accessing adjoining properties where shared vehicle and pedestrian access occurs;</i></p> <p><i>(iii) heavy vehicle routes, access and parking arrangements;</i></p> <p><i>(iv) the swept path of the longest construction vehicle entering and exiting the site in association with the new work, as well as manoeuvrability through the site, in accordance with the latest version of AS 2890.2; and</i></p> <p><i>(v) arrangements to ensure that construction vehicles enter and leave the site in a forward direction unless in specific exceptional circumstances under the supervision of accredited traffic controller(s).</i></p>	<p>Appendix A Section 1.6 Appendix B</p> <p>Section 4 Appendix E</p> <p>Section 4.3.2</p> <p>Section 3.2 Section 3.3 Section 3.6</p> <p>Section 3.2</p> <p>Section 3.2</p>
<b>B22</b>	<p><i>A Driver Code of Conduct must be prepared and communicated by the Applicant to heavy vehicle drivers and must address the following:</i></p> <p><i>(a) minimise the impacts of earthworks and construction on the local and regional road network;</i></p> <p><i>(b) minimise conflicts with other road users;</i></p> <p><i>(c) minimise road traffic noise; and</i></p> <p><i>(d) ensure truck drivers use specified routes</i></p>	<p>Section 4.4.5 Appendix E</p> <p>Section 3.2 Section 3.3 Appendix E</p> <p>Appendix E</p> <p>Section 3.2 Section 3.3.3</p> <p>Appendix E</p> <p>Section 3.2 Section 3.3.3 Appendix E</p>
<b>B23</b>	<p><i>Prior to the commencement of construction, the Applicant must provide sufficient parking facilities on-site, including for heavy vehicles and for site personnel to ensure that construction traffic associated with the development does not utilise public and residential streets or public parking facilities.</i></p>	<p>Section 3.6</p>

## 1.4 CTPMSP Tasks

In order to appropriately respond to the Conditions detailed in Table 1, this CTPMSP includes consideration of the following:

- The Scope of Work to be assessed as part of the CTPMSP in accordance with the SSD Consent, and Transport for NSW (**TfNSW**), Austroads and Australian Standards guidelines;
- The proposed construction schedule, including a breakdown of key stages of the construction period and the associated transport demands of each of those stages;
- General construction characteristics, including staff and truck numbers and construction hours;
- Access to and from the Site through all stages of construction, including the use of designated truck routes to minimise impacts on the local road network;
- Traffic generation and distribution through all stages of construction, and an assessment of the potential impact of construction traffic on the operation of the local road network;
- Staff and truck parking requirements and provisions;
- Mitigation measures by which to minimise to as great an extent as possible any potential impacts that the construction will have on existing road users, including motorists, pedestrians and cyclists;
- Key strategies and protocols by which to maximise the safety and efficiency of construction operations across all stages of construction, focusing on the retention of safe and efficient vehicle, pedestrian and cyclist movements adjacent to the Site, and the ongoing monitoring of and – where required – revisions to the CTPMSP to respond to issues where they arise.

## 1.5 Reference Documents

### 1.5.1 Planning Documents

Key planning documents referenced in the preparation of this CTPMSP include:

- The SSD, with a particular focus on the Jindabyne Education Campus Transport Assessment 2021, Aurecon (**Campus TA**);
- The SSD Consent;
- Snowy Mountains Special Activation Precinct Master Plan 2022, NSW State Government (**SM Master Plan**);
- Snowy Mountains Special Activation Precinct Technical Study Report Engineering - Transport June 2022, wsp (**SM Transport Study**); and
- Snowy Mountains Special Activation Precinct Final Structure Plan Report June 2022, Jensen Plus (**SM Structure Plan**).

### 1.5.2 Traffic and Transport Guidelines

This CTPMSP also references general traffic and transport guidelines, including:

- Australian Standard 1742 Manual of Uniform Traffic Control Devices Part 3: Traffic Control for Works on Roads (**AS 1742.3**);
- TfNSW Traffic Control at Work Sites Manual 2022 (**TCW Manual**); and
- Austroads Guide to Traffic Management Part 12: Integrated Transport Assessments for Developments.

## 1.6 Consultation

During the preparation of this CTPMSP, **arc traffic + transport** has engaged with TfNSW and Council officers to determine the scope of work provided in this CTPMSP, and additional assessment requirements that may arise through the construction period. A copy of emails between **arc traffic + transport** and TfNSW and Council officers is provided in [Appendix B](#), noting the following:

### ➤ Council Correspondence

- In November 2022 – after the submission of Version 4 (dated 11 November 2022) - **arc traffic + transport** had the opportunity to discuss the CTPMSP with Mr Zachary Crombie-Brown, Council's Acting Infrastructure Manager.
- Mr Crombie-Brown undertook a review the CTPMSP and further to our discussions provided an email response noting current and planned works in the vicinity of the Site, and the anticipated relocation of the proposed southern roundabout from its currently approved location north of Tinworth Drive to an alignment with Tinworth Drive, and with what has previously been referred to as Recreation Road. As acknowledged by **arc traffic + transport**, these plans are still being developed, but will necessarily be the subject of additional future consultation with Council prior to be finalised (see also [Section 3.5](#)).
- Mr Crombie-Brown also noted that Council is commencing road widening in Barry Way in the vicinity of the Site; as agreed, if the Council works impact or are impacted by Campus construction vehicles, then further revisions to the CTPMSP may be required to ensure that this part of the road network operates with maximum efficiency and safety.
- Finally, Mr Crombie-Brown notes that a Section 138 submission would be required prior to any future occupancy of Council's road reserve to accommodate future road works.

### ➤ TfNSW Correspondence

- **arc traffic + transport** also had the opportunity to discuss the CTPMSP with Mr Maurice Morgan, TfNSW Land Use Manager Southern Region.
- Mr Morgan also expressed agreement with the proposed scope of work in the CTPMSP, but noted that the design of the proposed upgrades in Barry Way as part of the broader Project had yet to be finalised (see also [Section 3.5](#)). This also specifically referred to the location and design of the southern roundabout, and again noted that the design would necessarily be the subject of additional future consultation with TfNSW prior to be finalised (see also [Section 3.5](#)).
- Recognising this, it was agreed with Mr Morgan that it was appropriate for revisions to be made to the CTPMSP in regard to the construction of the Barry Way upgrades once the design and construction staging have been finalised.

Further to the above, it is again important to state that the CTPMSP is a live document, and will continue to be revised as necessary based on all traffic and transport related issues that may arise during the construction of the Campus and adjacent road infrastructure.

## 2 The SSD Approval

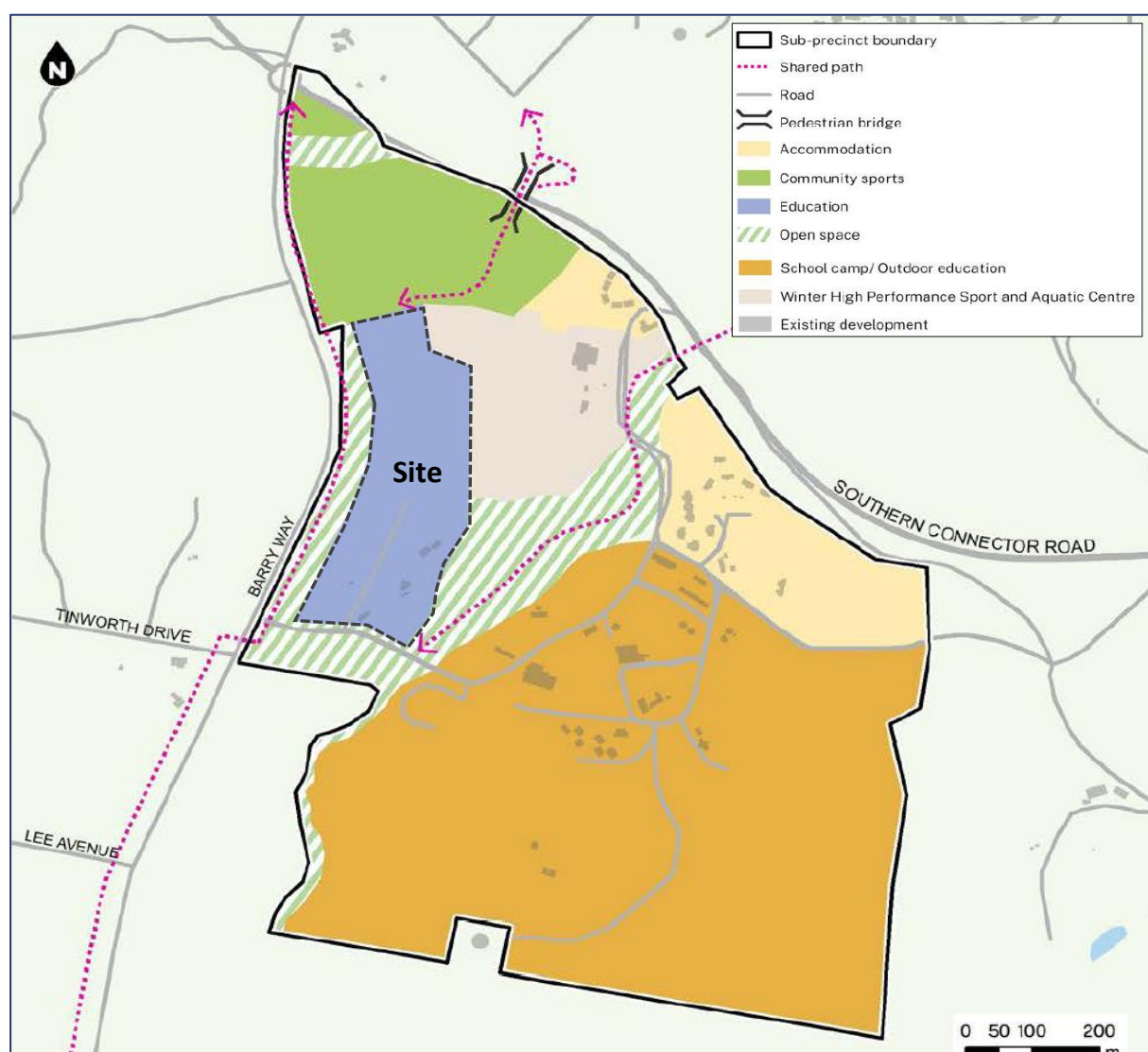
### 2.1 Site Location

The Site is located at 207 Barry Way, Jindabyne, and lies within what the SM Master Plan terms the Sports and Education Sub-Precinct (**S&E Precinct**) within the broader Jindabyne Catalyst Precinct (the **Jindabyne Precinct**).

The Site is bordered by land that will be used for community sport facilities to the north, a local access road to the south (termed **Recreation Road** for ease of reference), land that will be used for open space and additional sports facilities to the east, and Barry Way to the west.

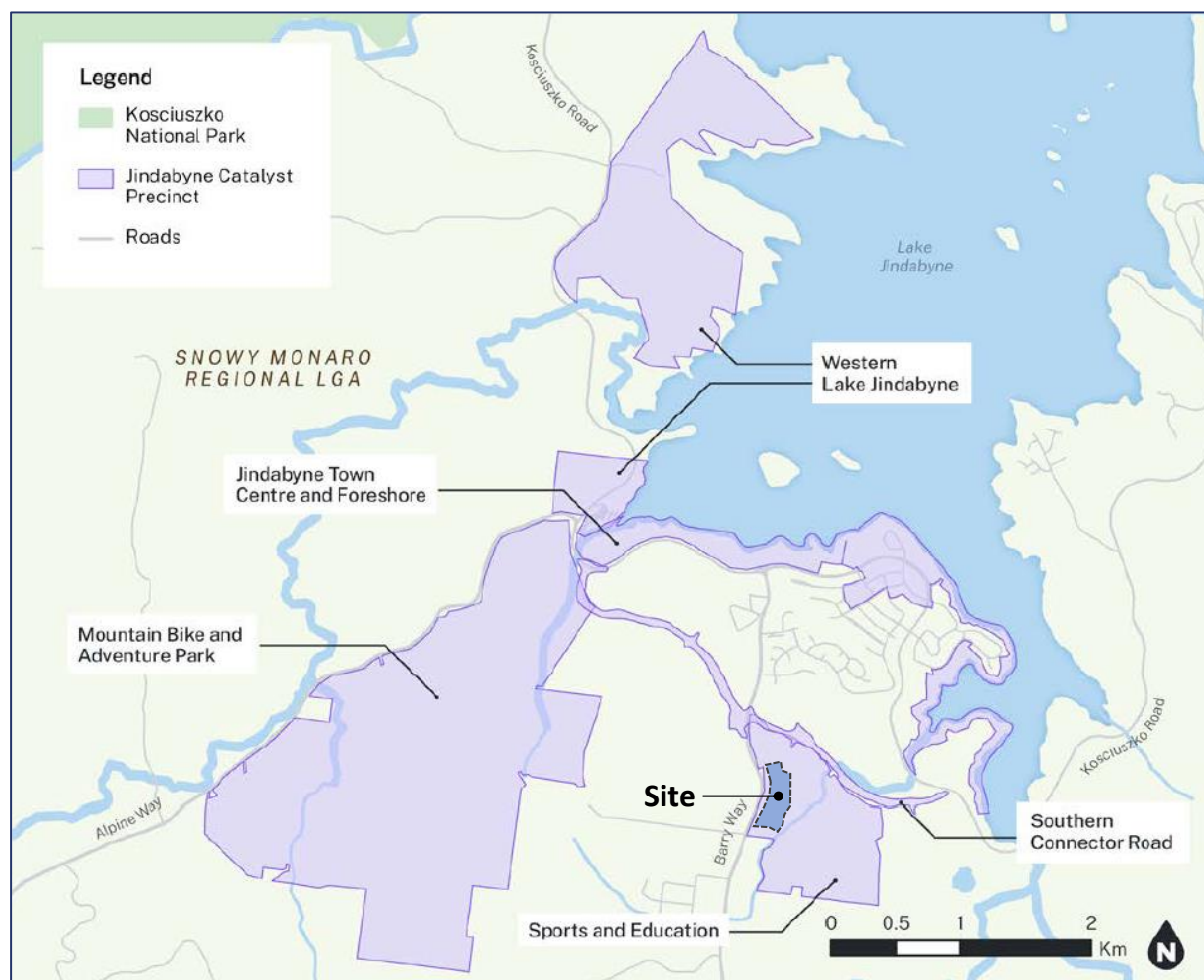
The Site is shown in its local context (within the S&E Precinct) in **Figure 1**, while **Figure 2** shows the Site in its broader context (within the Jindabyne Precinct).

**Figure 1: Site Location within Sports & Education Precinct**



Source: SM Master Plan

Figure 2: Site Location within Jindabyne Precinct



Source: SM Master Plan

## 2.2 The SSD Approval

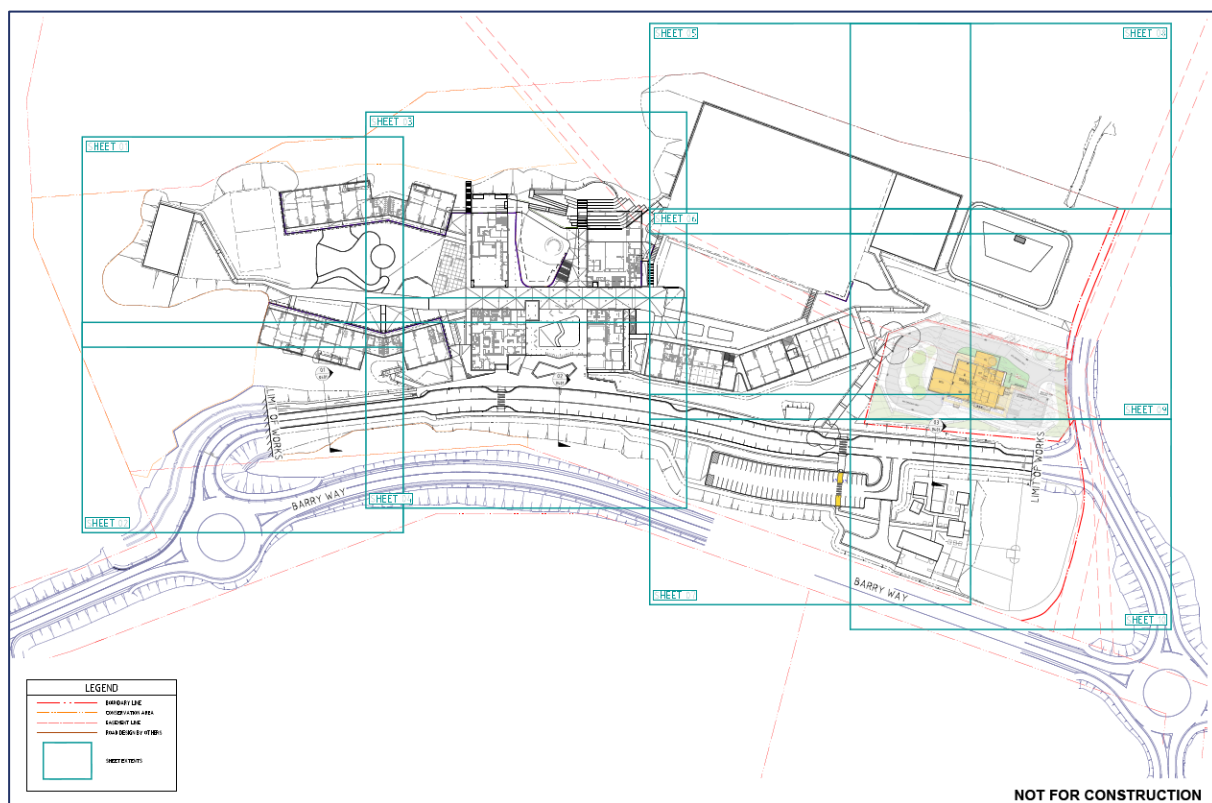
The SSD Approval provides for the development of the Site to include:

- A Primary School for 515 students;
- A High School for 410 students;
- Support infrastructure, including administration buildings, after hours facilities and recreational facilities; and
- A new internal access road (termed **School Road** for ease of reference) providing access to the staff car park, and for visitor parking, drop-off and pick-up (**DOPU**) facilities and bus bays;
- Active transport connections to the broader active transport network proposed across the Jindabyne Precinct; and
- The upgrade of Barry Way adjacent to the Site, including the construction of new roundabout intersections at School Road and Recreation Road.

The Campus Master Plan is shown in Figure 3.



Figure 3: The Campus Master Plan



Source: Pedavoli architects

With reference to Figure 3, arc traffic + transport notes that at this time, Hansen Yuncken is preparing a Modification submission to the SSD Approval that would provide for minor changes to the Campus as approved. Importantly, an approval of the Modification would not result in any substantial changes to the construction of the Campus as detailed in this CTPMSP.

## 2.3 Access

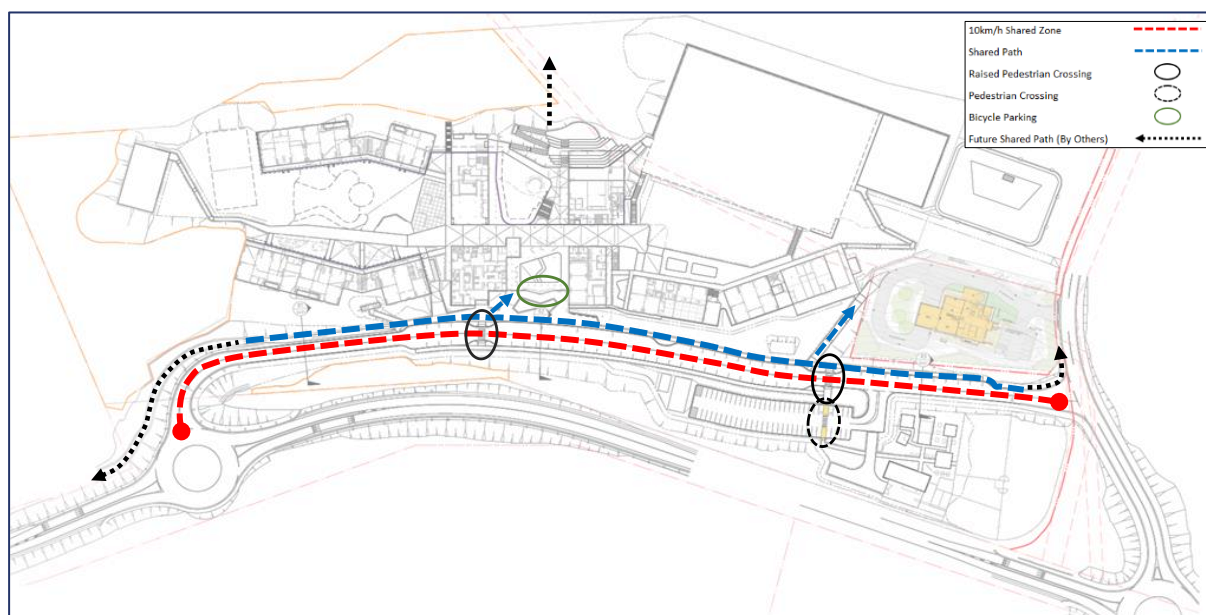
### 2.3.1 Vehicle Access

With reference to Figure 3, vehicle access to the Site will be provided via School Road, which will generally run parallel to, and east of, Barry Way. In the north, School Road will connect directly to a new roundabout intersection with Barry Way, while in the south School Road will connect to Recreation Road, and in turn the new roundabout intersection of Barry Way & Recreation Road.

### 2.3.2 Active Transport Access

The Campus will provide significant internal active transport infrastructure, which will in turn connect to the broader active transport network proposed across the S&E Precinct and Jindabyne Precinct. Active transport infrastructure across the Campus is shown in Figure 19 of the Campus TA, which is reproduced below, noting that the broader active transport connections across the S&E Precinct are shown in Figure 1 above.

Figure 4: Campus Active Transport Infrastructure



Source: Northrop and arc traffic + transport

## 2.4 Traffic

### 2.4.1 Campus Trip Generation

The trip generation of the Campus was determined in Campus TA further to consultation with key authorities and stakeholders; the adopted trip characteristics are summarised in Table 5.1 of Campus TA, which is reproduced below.

Table 2: Campus Peak Period Vehicle Trip Characteristics

Assumptions
10% of the Barry Way traffic stream are Heavy Vehicles
Opening year 2023
Students and staff numbers remain unchanged for the opening year and the future year 2033
70% of students get dropped off and picked up
80% of staff drive there and back in their own vehicle
50% of entering traffic comes from north
50% of exiting traffic leaves to north
50% of entering traffic comes from south
50% of exiting traffic leaves to south

Source: Campus TA

Based on these characteristics, Campus TA estimates that the Campus will generate approximately 1,368 vehicle trips in the AM and PM peak hours.

### 2.4.2 TAFE Connected Learning Centre and Sports & Recreation Centre



Campus TA states that the trip generation of the future TAFE Connected Learning Centre (TAFE CLC) located south of Recreation Road (currently under construction) and additional sports facilities to the east of the Site would be relatively minor, and moreover be largely generated outside of the School peak periods.

### 2.4.3 Intersection Operations

Campus TA provides SIDRA intersection analysis of the 2 roundabout intersections to Barry Way for both a 2023 and 2033 scenario, with the traffic volumes in Barry Way referencing the surveyed and forecast traffic volumes reported in the SM Traffic Study. Campus TA considers that the trip generation of the Campus itself would be the same under both scenarios.

The operation of these intersection under these scenarios is summarised in Table 5.3 and Table 5.4 of Campus TA for the 2023 and 2033 scenarios respectively, and are reproduced below.

**Table 3: 2023 Intersection Operations**

Intersection	Approach	Degree of Saturation		Average Delay (s)		Level of Service		Queue (m)	
		AM	PM	AM	PM	AM	PM	AM	PM
Northern Roundabout	S	0.336	0.405	4.1	4.3	LOS A	LOS A	18.1	24.2
	E	0.285	0.377	0.9	2.7	LOS A	LOS A	13.7	18.8
	N	0.208	0.201	6.0	5.0	LOS A	LOS A	11.1	10.7
	Overall	0.336	0.405	4.0	4.2	LOS A	LOS A	18.1	24.2
Southern Roundabout	S	0.513	0.564	14.1	13.3	LOS B	LOS B	34.8	41.4
	E	0.377	0.515	2.4	5.6	LOS A	LOS A	21.2	34.3
	N	0.340	0.556	6.0	7.2	LOS A	LOS A	18.0	38.9
	Overall	0.513	0.564	8.7	9.3	LOS A	LOS A	34.8	41.4

Source: Campus TA

**Table 4: 2033 Intersection Operations**

Intersection	Approach	Degree of Saturation		Average Delay (s)		Level of Service		Queue (m)	
		AM	PM	AM	PM	AM	PM	AM	PM
Northern Roundabout	S	0.353	0.431	4.2	4.4	LOS A	LOS A	19.4	26.7
	E	0.290	0.390	1.0	3.0	LOS A	LOS A	14.0	19.5
	N	0.208	0.223	5.9	4.9	LOS A	LOS A	11.1	12.3
	Overall	0.353	0.431	4.0	4.3	LOS A	LOS A	19.4	26.7
Southern Roundabout	S	0.530	0.582	13.8	12.9	LOS B	LOS B	36.9	43.7
	E	0.383	0.515	2.6	5.6	LOS A	LOS A	21.5	34.2
	N	0.354	0.550	6.0	7.0	LOS A	LOS A	19.0	38.0
	Overall	0.530	0.582	8.7	9.1	LOS A	LOS A	36.9	43.7

Source: Campus TA

With reference to the tables above, it is clear that the key intersections to Barry Way will operate at a good Level of Service (**LOS**), with very moderate average delays and queuing on each approach, and retain significant spare capacity.

## 2.5 Additional Transport Infrastructure

### 2.5.1 Staff Parking

The Campus will provide a total of 50 staff parking spaces in a car park to be located to the west of School Road.

### 2.5.2 Visitor Parking

The Campus will provide 4 visitor parking spaces in School Road adjacent to the School Administration building.

### 2.5.3 Drop-Off & Pick-Up Spaces

The Campus will provide 53 DOPU spaces, which will be provided as parallel spaces on both sides of School Road.

### 2.5.4 Bus Bays

The Campus will provide 4 bus bays in School Road adjacent to the Primary School and High School.

## 3 Construction Characteristics

### 3.1 General Construction Characteristics

#### 3.1.1 Construction Schedule and Staff

Based on our discussions with Hansen Yuncken and the broader Project Team, a summary of the general characteristics of the construction schedule is provided in Table 5.

Table 5: Construction Schedule Characteristics

Construction Stage	Scheduled Timing	Staff/day	Peak Trucks per Day
Site Establishment	20/10/22 – 2/11/22	Approx. 20 - 40	10
Demolition	11/11/22 - 2/12/22	Approx. 20 - 40	10
Earthworks	16/12/22 - 5/4/23	Approx. 20 - 40	15
Construction	20/2/23 - 16/4/24	Approx. 60 - 180	15
Site Finalisation	1/10/24 - 28/10/24	Approx. 20 - 40	4

#### 3.1.2 Construction Hours

In accordance with Condition C4 of the SSD Consent, construction hours – including the delivery of materials to/from the Site - will be as follows:

- 7:00am to 6:00pm Monday to Friday; and
- 8:00am to 1:00pm on Saturdays;

No construction work is permitted on Sundays or public holidays.

Notwithstanding Condition C4, Condition C5 of the SSD Consent states the following:

*provided noise levels do not exceed the existing background noise level plus 5dB, works may also be undertaken during the following hours:*

- (a) between 6pm and 7pm, Mondays to Fridays inclusive; and*
- (b) between 1pm and 4pm, Saturdays.*

As is also relatively standard for major construction projects, Condition C6 and Condition C7 of the SSD Consent also provides for construction activities outside of the hours detailed in Conditions C4 and C5 of the SSD Consent, stating:

*C6. Construction activities may be undertaken outside of the hours in condition C4 (and C5) if required:*

- (a) by the Police or a public authority for the delivery of vehicles, plant or materials; or*

- (b) in an emergency to avoid the loss of life, damage to property or to prevent environmental harm; or*
- (c) where the works are inaudible at the nearest sensitive receivers; or*
- (d) for the delivery, set-up and removal of construction cranes, where notice of the crane-related works is provided to the Planning Secretary and affected residents at least seven days prior to the works; or*
- (e) where a variation is approved in advance in writing by the Planning Secretary or her nominee if appropriate justification is provided for the works.*

*C7. Notification of such construction activities as referenced in condition C6 must be given to affected residents before undertaking the activities or as soon as is practical afterwards.*

Finally, Condition C8 of the SSD Consent restricted hours for construction activities that would generally result in more significant noise impacts, such as rock breaking, rock hammering, sheet piling, pile driving and other similar activities. These works can only be undertaken during the following periods:

- 8:00am to 12:00pm Monday to Friday;
- 1:00pm to 5:00pm Monday to Friday; and
- 9:00am to 12:00pm on Saturdays;

### 3.1.3 Out of Hours Work Permits

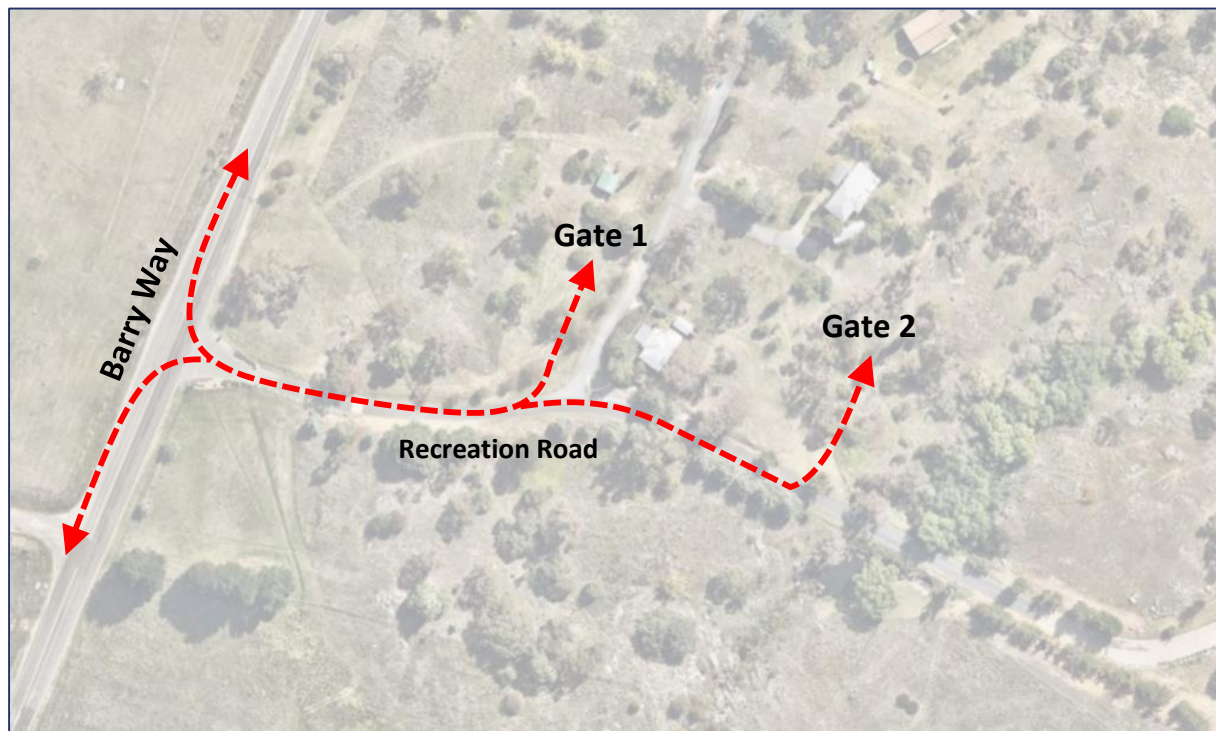
While not anticipated at this time, where it is necessary for any significant construction works to occur outside of the conditioned work hours, an application for an Outside of Hours Work Permit (**OHW Permit**) will be submitted to Council, and adjacent residents will also be notified of the proposed works. Any out of hours works would only commence further to an approval of the OHW Permit.

## 3.2 Site Access

Through most of the construction period, access to the Site will be via Recreation Road and a new access driveway (Gate 1) immediately west of the existing residential driveway running north from Recreation Road into the Site. An additional access driveway (Gate 2) will also be provided to the east of the residential driveway later during the construction period.

These access driveways are shown in [Figure 5](#), noting that all vehicles will be required to enter and depart the Site in a forward direction, which can easily be achieved given the significant on-site areas available for turning even the largest vehicles accessing the Site.

Figure 5: Site Access: Recreation Road



Source: Nearmap

It is noted that this route (to/from Barry Way and along Recreation Road) is currently being used by construction vehicles accessing the TAFE site to the east of the Site, and moreover by construction vehicles of the same type as those proposed for the construction of the Campus (see also [Section 3.3.2](#)); this means that the intersection of Barry Way & Recreation Road has inherently been approved to accommodate the swept path of trucks travelling to and from the TAFE site, which will essentially be identical to the movement of trucks to the Site.

During (and after) the construction of the northern roundabout in Barry Way (at School Road), a third access driveway (Gate 3) to the Site would also be available.

### 3.3 Construction Trucks

#### 3.3.1 Truck Movement Hours

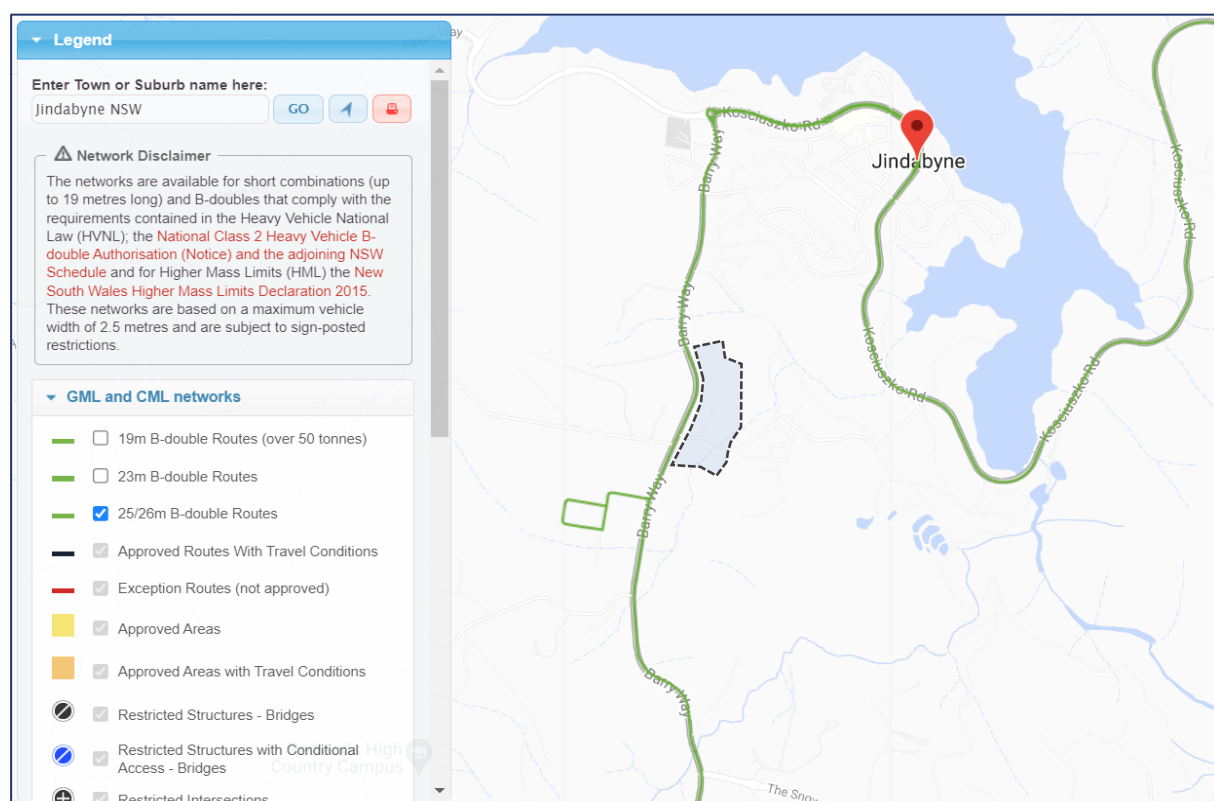
As discussed in [Section 3.1.2](#), truck movements will be restricted to the same periods as general construction works. Any out of hours truck movements would also be subject to the same OHW Permit application and notification process as described in [Section 3.1.3](#).

#### 3.3.2 Truck Types

The type of trucks required during the construction period will include Medium Rigid Vehicles (**MRVs**), Heavy Rigid Vehicles (**HRVs**) and Articulated Vehicles (**AVs**).

At this time, there is no anticipation that AVs accessing the Site would be anything other than General Access Vehicles (**GAVs**), which are able to use the entire public road network. Notwithstanding, if Restricted Access Vehicles (**RAVs**) are required at any time, they would be able to use the TfNSW approved RAV routes which include Barry Way and Kosciusko Road east through to Cooma (and then the broader State Road network). These approved RAV routes are shown below.

**Figure 6: Approved Restricted Access Vehicle Routes**



Source: TfNSW

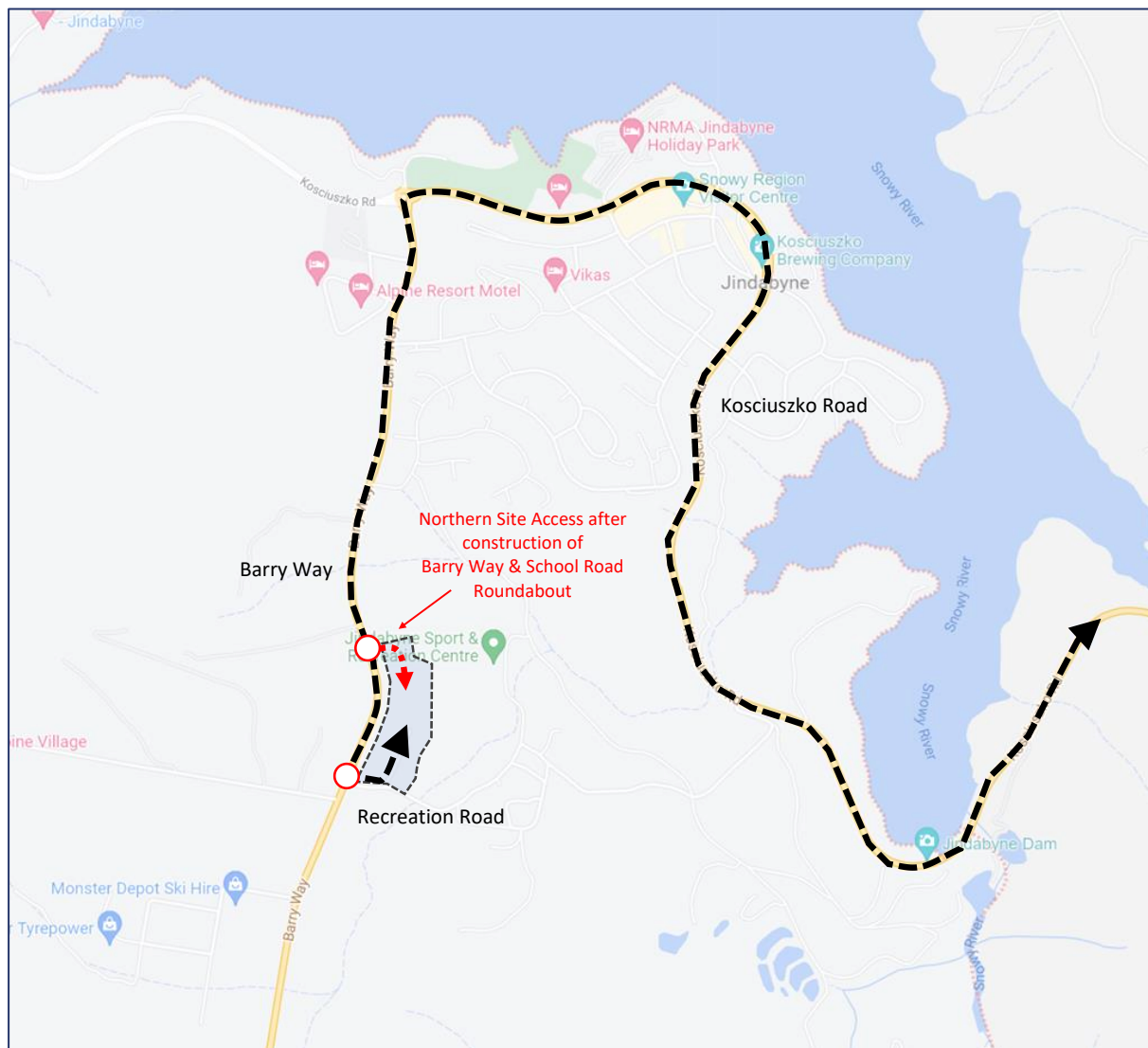
Should there be a requirement for vehicles larger than a 26m B-Double during the construction period, an application would be prepared for an Oversize Overmass Permit (**OSOM Permit**); OSOM Permits may be issued with conditional restrictions that limit the time and days that these vehicles are allowed to access the Site, and that all movements are undertaken efficiently and safely.

### 3.3.3 Designated Truck Routes

A Vehicle Movement Plan (**VMP**) in accordance with Section 5.2.2 of the TCW Manual that identifies a designated truck route that uses higher order roads rather than local residential streets; all trucks (other than those generated from local suppliers/contractors) will be required to use this route (which aligns with the RAV route shown in Figure 6) as shown in Figure 7, noting again the change in access provisions further to the construction of the northern Barry Way roundabout at School Road.



Figure 7: Vehicle Movement Plan - Designated Truck Routes



Source: Google

## 3.4 Construction Vehicle Trips

### 3.4.1 Staff Trip Generation

With reference to Table 5, it is estimated that a maximum of 180 staff would be on-site at any one time (during the peak construction period); this would include general construction staff, Project Managers and tradespeople.

As with other major building projects across NSW, it is anticipated that a high percentage of construction staff will be accommodated in the local area rather than travel significant distances to/from the Site each day. In this regard, there is already a significant amount of accommodation in Jindabyne (and the sub-region) catering for workers during the winter ski season, but it is anticipated that any construction staff demand – estimated to be at least 60% – 70% of staff – can be appropriately met.



Further, where construction staff are accommodated in close proximity to the Site, it is anticipated that group transport (shuttle buses and the like) will be used to transport staff to and from the Site each day, which significantly reduces staff trip generation. Even for those staff in more remote locations travelling by smaller vehicles, a high vehicle occupancy is anticipated.

Based on the use of group transport and high occupancies of other vehicles, it is estimated that staff would generate up to 40 vehicle trips per hour in both the arrival peak hour (prior to the 7:00am construction start time) and departure peak (immediately after the 6:00pm construction finish time) during the peak construction period. Outside of this peak period, staff trips would be less than 20 vehicle trips per hour.

### 3.4.2 Truck Trip Generation

With reference to Table 5, it is estimated that up to 15 trucks per day would be required during some stages of the construction; this equates to a total of up to 30 truck trips per day.

Based on a spread of these movements over the day, it is estimated that up to 4 truck trips could be generated in a single hour, though during the commuter peak periods (not generally coinciding with the construction arrival and departure peak periods) the number of truck trips would likely be lower than this average as a factor of cost efficiency (i.e. faster trips outside the commuter peak periods) and the general start-up/shut-down periods at the start and end of the construction day where trucks are unlikely to be utilised.

### 3.4.3 Trip Distribution

As discussed in sections above, it is anticipated that the majority of both staff and truck trips would be generated to/from the north of the Site based on accommodation centres (staff) and construction materials arriving from major centres to the east of Jindabyne.

## 3.5 Construction Traffic Impacts

### 3.5.1 Traffic Impacts Prior to Barry Road Upgrades

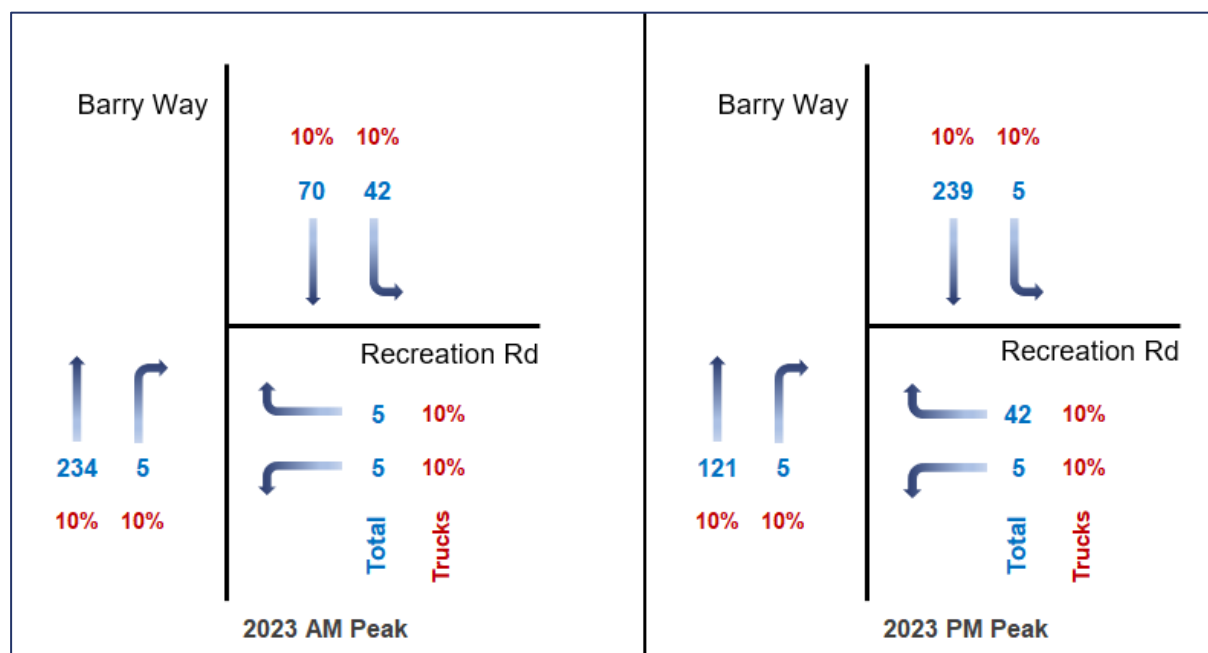
Prior to the construction of the Barry Way roundabouts, the intersection of Barry Way & Recreation Road would continue to operate under priority control (nominally Stop). As such, arc traffic + transport has undertaken an assessment of this intersections during the peak construction period, i.e. with the maximum construction trip generation, to ensure that it will continue to operate at an appropriate LOS. In this regard, the assessment considers the following:

- 2023 Barry Way peak season (July) traffic volumes, which are based on the traffic volumes as reported in Table 5.2 of Campus TA;
- Application of 50% of these Barry Way traffic volumes to represent a peak 30 minute arrival (AM peak) and 30 minute departure (PM peak) period prior to and following each construction day;

- The construction vehicle trips as detailed in Section 3.4, with 100% of trips assigned to/from the north (which provides a worst case assignment of right turn movements from the minor road to Barry Way); and
- A minor number of trips being generated by other sites off Recreation Road, and in turn to other movements at the intersection.

The resulting traffic volumes are shown in Figure 8.

Figure 8: Barry Way & Site Traffic Volumes



Based on these peak volumes, the operation of the intersection has been assessed using the TfNSW approved SIDRA intersection model. SIDRA provides a number of outputs by which to measure the performance of an intersection, including:

- **Level of Service:** Level of Service is a basic performance parameter assigned to an intersection based on average delay; we note that we have assessed the intersections using the RTA parameters which use only delay in the calculation of LOS. At priority controlled intersections LOS is based on the worst minor approach movement delay.
- **Average Vehicle Delay:** Average Vehicle Delay represents the difference between interrupted and uninterrupted travel times through an intersection, and is measured in seconds per vehicle in this assessment. Delays include queued vehicles accelerating and decelerating from/to the intersection stop, as well as general delays to all vehicles travelling through the intersection.
- **Degree of Saturation:** Degree of Saturation is defined as the ratio of demand (arrival) flow to capacity. Degrees of Saturation above 1.0 represent over-saturated conditions (demand flows exceed capacity) and degrees of saturation below 1.0 represent under-saturated conditions (demand flows are below capacity).

- **95%ile Queue Length:** The 95%ile queue length represents the maximum queue that would be generated on any approach 95% of the time.

Table 6 provides a summary of the SIDRA recommended criteria for the assessment of priority intersections.

**Table 6: SIDRA Level of Service Criteria**

Level of Service	Average Delay	Stop & Give Way
<b>A</b>	less than 14	Good operation
<b>B</b>	15 to 28	Acceptable delays and spare capacity
<b>C</b>	29 to 42	Satisfactory, but accident study required
<b>D</b>	43 to 56	Near capacity and accident study required
<b>E</b>	57 to 70	At capacity, requires other control mode
<b>F</b>	More than 70	Unsatisfactory and requires other control mode or major treatment.

Source: SIDRA Systems

The results of the SIDRA analysis of existing intersection operations are summarised in Table 7; detailed SIDRA Movement reports are provided in Appendix C.

**Table 7: Barry Way & Recreation Road Priority Control Intersection Operations**

Peak Period	Level of Service	Average Delay (s)	Worst Delay (s)	Degree of Saturation	95%ile Queue (m)
<b>AM Peak</b>	B	1.4	16.8	0.277	1.2
<b>PM Peak</b>	B	2.6	21.8	0.340	12.5

With reference to Table 7, even if all peak construction traffic were assigned to the intersection of Barry Way & Recreation Road operating under priority control, the intersection would operate at a good LOS B, with minimal average and worst delays, very moderate queues.

### 3.5.2 Traffic Impacts After Barry Road Upgrades

Following the upgrade of Barry Road to provide the new roundabouts, the vehicle trips generated during the later stages of construction period would have no significant impact on the operation of the local or sub-regional traffic network. In this regard:

- As discussed in [Section 3.4](#), the trip generation of the Site during peak construction periods is estimated at no more than 40 light vehicles and 4 heavy vehicles; even when considering a shorter arrival and departure peak (approximately 30 minutes before and after the construction day) this trip generation equates to an average of 1 – 2 vehicle trips per minute;
- As the broader Jindabyne Precinct is only in the early stages of development, existing traffic volumes on all key roads providing access between the Site and the sub-regional road network are minimal, and unlikely to increase to any significant degree prior to the completion of the construction works; and
- The construction traffic represents only a minor percentage of the peak periods trips that would be generated by the Campus once operational, and – with reference to [Section 2.4.3](#) – the roundabout intersections to Barry Way would therefore provide significant capacity such that they would operate at a LOS A throughout the later stages of the construction period.

### 3.5.3 Construction Traffic Summary

With reference to sections above, it is the conclusion of [arc traffic + transport](#) that the traffic generated through the entire construction period would have no impact on the operation of the local road network.

## 3.6 Parking

### 3.6.1 Peak Staff Parking Demand

As discussed in [Section 3.4.1](#), it is anticipated that the majority of staff will arrive in groups, either using group transport or in smaller vehicles with a high occupancy. Based on these factors, it is anticipated that the Site would generate a peak parking demand for up to 40 parking spaces.

### 3.6.2 On-Site Staff Parking Provision

The Site provides significant areas to accommodate staff parking through all stages of construction. The areas dedicated to staff parking are anticipated to change during the construction period (as new infrastructure is provided) but there is no potential for any staff parking to be required off-site.

### 3.6.3 Truck Parking

There is not anticipated to be any significant demand for truck parking on-site; however, and as with staff parking, there are significant areas on-site to provide for any truck parking demand, such that again there is no potential for truck parking to be required off-site.

## 4 Construction Traffic & Pedestrian Management Plan

### 4.1 On-Site Management

#### 4.1.1 Staff Parking

As discussed in Section 3.6, all staff parking will be contained on-site.

#### 4.1.2 Deliveries & Materials Handling

All deliveries and materials handling will also occur on-site at all times, and as discussed in Section 3.6.3, all truck parking demand will be contained on-site.

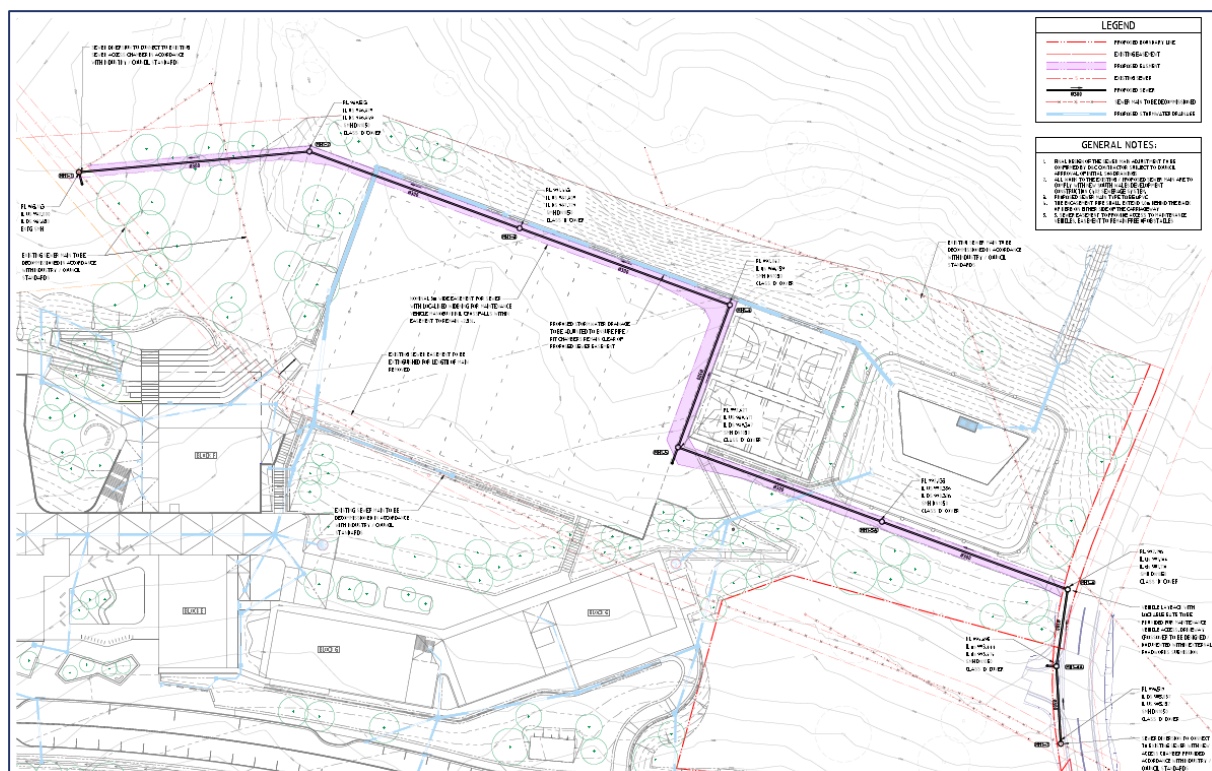
#### 4.1.3 Emergency Vehicle Access

Emergency vehicle access to and from the Site will be available at all times while the Site is occupied by construction workers; emergency protocols during the works will be developed by the Project Manager for inclusion in the CTPMSP.

#### 4.1.4 Easements

A number of easements have been identified within and adjacent to the Site, and are shown in the figures below. Appropriate access to these easements will be provided throughout the construction period.

Figure 9: Sewer Diversion Easement



Source: dep Consulting





## 4.2 Traffic and Pedestrian Management

### 4.2.1 Work Areas

At this time, it is anticipated that Work Areas (within the road reserve) will only be required in Barry Way during the construction of the roundabouts at School Road and Recreation Road. An application for a Road Occupancy Licence (**ROL**), including all relevant information relating to the construction staging, will be prepared by the Project Team for submission to TfNSW and/or Council prior to the commencement of any works in Barry Way (see also [Section 4.3](#) below).

### 4.2.2 Pedestrian and Cyclist Management

Appropriate fencing will be provided along all Site frontages so as to prevent unwanted pedestrian access to the Site at all times.

It is anticipated that the fencing will either be ATF or 2.4m chain wires, and that Site access gates will be provided at all access points to the Site and remain closed at all times outside of the permitted construction hours.

It is also noted that there would essentially be no demand for the pedestrian and cyclist infrastructure provided for in the SSD Approval – including both on and off-site active transport paths – prior to the Campus commencing operations. This specifically includes the Barry Way shared path that will run adjacent to the Site, as this shared path is not anticipated to be connected to shared paths north or south of the Site (to be constructed by others) until after the Campus becomes operational.



## 4.3 Traffic Guidance Schemes

### 4.3.1 General Traffic Control Plan Requirements

Further to [Section 4.2.1](#), any submission for a ROL will necessarily be accompanied by a detailed Traffic Guidance Scheme (**TGS**) - previously referred to as a Traffic Control Plan - which will be prepared by persons accredited to *Prepare a Work Zone Traffic Management Plan* in accordance with the TCW Manual and AS1742.3.

Any TGS involving signage, traffic control or other potential changes to the operation of Barry Way (or Recreation Road) will require consultation with and approval from TfNSW and/or Council prior to the construction works to which they relate.

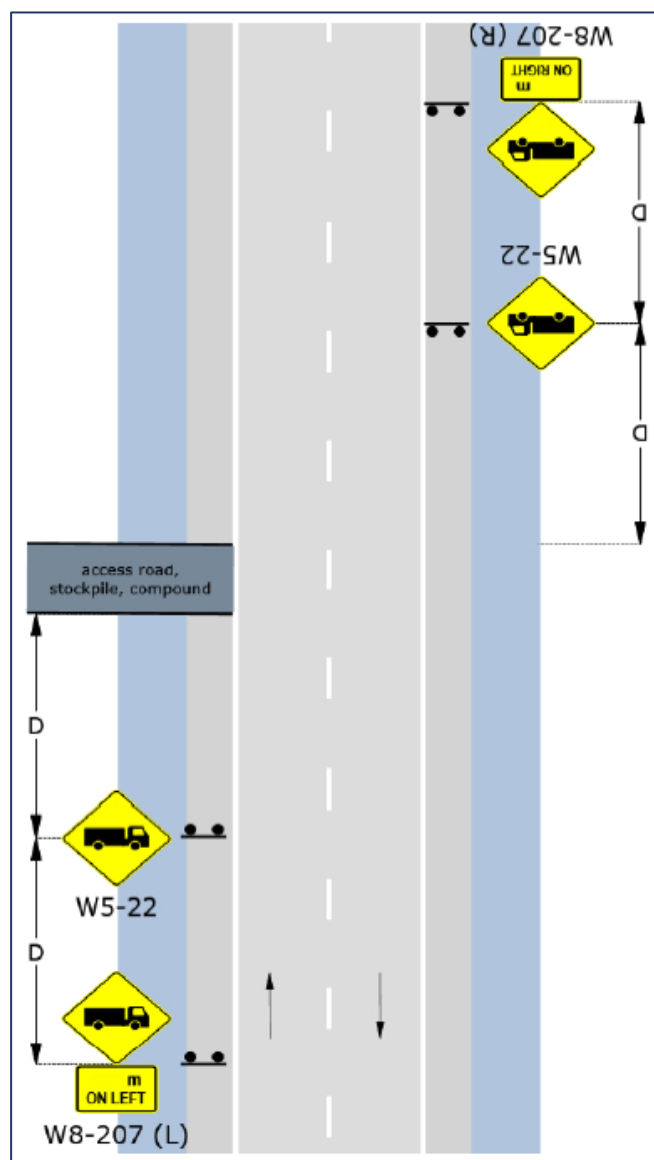
### 4.3.2 Recreation Road Traffic Guidance Scheme

While there is no requirement for a detailed TGS to manage the movement of vehicles to and from the Site via the Recreation Road access driveways, a TGS has been developed to increase the safety of these movements, and through movements in Recreation Road.

In this regard, a TGS has been prepared referencing Section D.4.7 of the TCW Manual relating to *Static Work: Access to depot, stockpile, quarry, gravel pit etc. all roads*, formerly referenced as Traffic Control Plan 195. This will provide for the installation of signage on both approaches to the Site access driveway(s) in Recreation Road to heighten the awareness of drivers in Recreation Road that trucks may be turning to and from the Site access driveways.

The basic components of the TGS are in accordance with [Figure 12](#) below, and the detailed TGS for the Recreation Road access driveway is provided as [Appendix D](#).

Figure 12: Traffic Guidance Scheme: Static Work



Source: TCW Manual

#### 4.3.3 Barry Way Upgrade Traffic Guidance Scheme

A detailed TGS will be required to support the safe and efficient construction of the Barry Way roundabouts at School Road and at Recreation Road.

At this time, the timing and staging of the construction of these roundabouts has not been finalised, and as such it is not possible to provide a detailed TGS advice at this time; notwithstanding, it is anticipated that the TGS will at the minimum provide for:

- Vehicle access along Barry Way to be retained at all times through the upgrades, with no expectation of any local diversions being required (i.e. there would not be a full closure of Barry Way at any time). This will most likely be achieved by retaining at least one traffic lane outside of the Work Area throughout the construction of the roundabouts;

- A reduction in the speed limit in Barry Way through the Work Area, anticipated to be 40km/h on the approaches to and through the Work Area;
- Stop-Go operations (under the supervision of appropriately authorised Traffic Controllers – see also [Section 4.3.4](#)) during any construction stages where 2 traffic lanes (for two-way flows) are not available; based on the low through volumes in Barry Way, this is unlikely to have any significant impact on through traffic movements. It is noted that any TGS detailing Stop-Go operations would also be supported by traffic analysis of delays and queue lengths in Barry Way during these operations; and
- The provision of appropriate warning and guidance signage (per the TWC Manual, anticipated to include T1-5, T1-18 and T1-34 signage as a minimum) on all approaches to and around Works Areas.

Any other works requiring the occupancy of Barry Way would also necessarily be accompanied by a detailed TGS and - where required – all TGS would be reviewed and updated to respond to any changes to prevailing traffic conditions throughout the course of the construction works.

#### 4.3.4 Authorised Traffic Controllers

Should they be identified as being required as part of any future TGS – most likely for the construction of the Barry Way roundabouts - authorised Traffic Controllers will be present on-site throughout the proposed works. Responsibilities of the Traffic Controllers are anticipated to include:

- The supervision of all construction vehicle movements into and out of Works Areas;
- The supervision of all loading and unloading of construction materials Work Areas, and
- Pedestrian and cyclist management, to ensure that adverse conflicts between vehicle movements and pedestrians do not occur, while maintaining radio communication with construction vehicles at all times, notwithstanding the very minimal potential for any pedestrian or cyclists movements in the vicinity of the Site.

### 4.4 Principal Contractor Responsibilities

#### 4.4.1 Site Induction

All construction staff will be properly inducted prior to commencing work on-site. The induction will detail the Site's construction safety protocols, including:

- General Site safety;
- Site access, amenities and general procedures;
- Truck movements and on-site parking;
- Neighbour consultation and notification requirements; and
- Project Management's policies and procedures.

#### 4.4.2 Truck Movements

The Principal Contractor is required to take all steps necessary to ensure all trucks, and truck movements, are as safe as possible, and will not result in truck drivers operating under conditions that are unsafe. This will be achieved by undertaking the following:

- Ensuring all trucks are well maintained and that the equipment enhances driver, operator and passenger safety to as great an extent as practicable;
- Ensuring all truck drivers have a valid Verification of Competency for the class of vehicle they are driving;
- Identifying truck driver training needs and arranging appropriate training or re-training. This is anticipated to include truck driver competency assessments as part of all inductions, and regular Toolbox Talks on safety conditions, managing fatigue, approved truck routes and truck driver responsibilities; and
- Encouraging safe driving behaviour by not covering or re-imbursing staff for speeding or other infringement notices; ensuring the legal use of mobile phones only while driving; and providing training on, and circulating information about, travel planning and efficient truck driving habits.

#### 4.4.3 Communications Strategy

A Communications Strategy will be established by the Principal Contractor and included in the CTPMSP. The Communications Strategy will outline the most effective communication methods to ensure adequate information is provided to relevant authorities and the local community, and will assist the Project Team to deliver any construction traffic changes with minimal disruption to the on and off-site vehicle, pedestrian and cyclist environment.

The Communications Strategy will include (as a minimum):

- The erection of signs providing advanced notice of works and/or any traffic control measures to be implemented (on or off-site);
- Written notices to surrounding residents who would potentially be impacted by the construction works (prior to commencement of those works); and
- A contact person from the Principal Contractor to answer enquiries from key stakeholders and local residents.

The nominated Hansen Yuncken representative for any required Council or stakeholder contact is:

- Daniel Spirit Jones, Project Manager: Phone 0402 893 643.

Relevant Site contact details for the appointed contractor(s) will also be affixed to the fencing around the Site.

#### 4.4.4 CTPMSP Monitoring and Review

The development of a program to monitor the effectiveness of the CTPMSP will be established by the Principal Contractor.

The CTPMSP will be subject to ongoing review to further enhance the safety and efficiency of the construction works; any and all reviews will be documented by the Principal Contractor, with considerations for review potentially including the following:

- Tracking deliveries and general construction vehicle movements against estimated volumes;
- Identifying any shortfalls in the existing CTPMSP, and developing an updated action plan to address issues that may arise during construction (for example, parking or access issues);
- Ensuring that any TGS (where required) are updated by accredited persons to ensure they remain consistent with construction requirements and the intent of the CTPMSP; and/or
- Undertaking regular checks to ensure all loads are leaving the Site appropriately covered and without tracking materials onto adjacent roads.

#### 4.4.5 Drivers Code of Conduct

A Drivers Code of Conduct will be strictly enforced by the Principal Contractor throughout the construction period. The objectives of the Drivers Code of Conduct include:

- Minimising the impact of truck and company vehicle movements on the on-site work environment and local road network;
- Minimising conflict with other on and off-site road users;
- Minimising truck traffic noise by ensuring that vehicles have correctly been fitted with mufflers to minimise noise disturbance, and use only the approved construction vehicle routes during approved construction hours so as to minimise noise impacts in residential and urban areas; and
- Ensuring truck drivers use the designated truck routes.

The Driver Code of Conduct will also require that, while driving any truck or company vehicle for construction related purposes, drivers must:

- Demonstrate safe driving and road safety activities;
- Abide by traffic and road legislation;
- Abide by on and off-site speed limits at all times; and
- Follow Site signage and instructions at all times.

The detailed Driver Code of Conduct is provided in [Appendix E](#).

## 5 Conclusions

Further to an assessment of the access, traffic and parking characteristics of the proposed construction of the Campus and associated infrastructure, **arc traffic + transport** has concluded that the construction works can be undertaken in a safe and efficient manner without impacting the local road environment. In summary:

- The trip generation of the Site during all stages of construction relatively very moderate, and further to consideration of the low traffic volumes in the local road network through the construction period, those trips would have no impact on the operation of local roads and intersections;
- Trucks will be restricted to a designated route so as minimise impacts on lower order roads;
- The maximum sized trucks required for construction would be the same as those currently using the intersection of Barry Way & Recreation Road, i.e. the intersection can accommodate the swept paths of the maximum size truck accessing the Site;
- Parking for staff (and trucks as required) can be contained wholly within the Site through the entire construction period;
- OHW Permits, OSOM Permits and TGS will be prepared as required through the construction period by qualified personnel; approval for each by TfNSW and/or Council would be required prior to any works associated with these permits/schemes commencing;
- Hansen Yuncken and other contractors will implement comprehensive construction management strategies and protocols through the construction period to maximise the on and off-site safety of staff and the general public;
- The CTPMSP will be reviewed throughout the construction period, and appropriately updated as required.

In summary, **arc traffic + transport** has determined that the construction of the Jindabyne Education Campus in line with this CTPMSP can be undertaken without any significant network or safety impacts.

## Appendix A: Anton Reisch and Ben Midgley Curriculum Vitae



## ANTON REISCH CURRICULUM VITAE

Anton excels in the detailed assessment of traffic and parking generating developments, and urban and strategic planning projects. His range of work has extended from small dwelling renovations through to residential subdivisions, shopping centres, schools, churches, commercial, industrial, mining and major infrastructure projects. Anton's reports provide the clear and precise detail required to meet and exceed the expectations of clients, while his communication with local and State government authorities and key stakeholders is second to none; a collaborative approach will always provide the best results.

Anton retains a fierce independence in his approach to any assessment task. This has been instrumental in the establishment of a large and loyal client base, from small architectural firms through to national and multi-national corporations and local and State government agencies.

### Personal

Date of Birth: 31<sup>st</sup> December 1970  
 Nationality: Australian  
 Address: 19 Canoon Road, Turramurra NSW 2074 Australia  
 Mobile: +61 2 427 995 160  
 Email: [antonreisch@optusnet.com.au](mailto:antonreisch@optusnet.com.au)



### Education

BA (USyd): 1990 - 1992  
 Master Urban & Regional Planning (USyd): 1993 - 1995

### Employment

Stapleton & Hallam	1993 - 1994
Christopher Stapleton Consulting	1994 - 2004
Stapleton Transportation & Planning	2004 - 2011
arc traffic + transport	2011 - 2018
Ason Group	2018 - 2020
arc traffic & transport	2020 - Present

### Referees |

#### Local Government Projects

Mr Tim Ruge  
 Urban Engineer, Coffs Harbour City Council  
 P: +61 2 6648 4650

#### Residential and Commercial Projects

Mr Peter Lawrence  
 Director, GLN Planning  
 Phone: +61 402 181 571

#### Regional Projects

Mr Stephen Richardson  
 Director, Cowman Stoddart  
 Phone: +61 2 4423 6198

#### Precinct Planning

Mr Murray Donaldson  
 Director, Urbis  
 Phone: +61 2 8233 9900

## CURRICULUM VITAE



## BEN MIDGLEY

PRINCIPAL TRAFFIC ENGINEER



### YEARS OF EXPERIENCE

10 years

### QUALIFICATIONS & AFFILIATIONS

Master of Engineering (MEng)

Chartered Engineer (CEng)

Registered Engineer (NER)

Member Engineers Australia

Member AITPM

Member UDIA

### KEY SKILLS & COMPETENCIES

Traffic Modelling (SIDRA, VISSIM, LinSig)

Construction Traffic Assessment

Development Planning

Traffic & Parking Impact Assessments

Car Park Design

Traffic Management Plans

Traffic Engineering

Public Transport Assessment

Economic & Financial Evaluation

Land Use Development Assessment

Project Management

Peer Review

### PROFESSIONAL BACKGROUND

2020-Present - PDC Consultants

2016-2020 - AECOM ANZ

2012-2016 - AECOM UK&I

### PROFESSIONAL OVERVIEW

Ben is an innovative traffic engineer and development planner with substantial and varied international experience in traffic engineering and project management for Government, Council and Private clients. This experience has led to his recognition as a Chartered Professional Engineer (CEng) with Engineers Australia.

Having spent his early career working in London on major transport schemes such as the flagship Cycle Superhighway, he immigrated to Australia where he has worked on large infrastructure projects for local government and the private sector, most notably the WestConnex motorway upgrade scheme and Easing Sydney's Congestion program.

Ben has taken a keen interest in transportation modelling which forms the bedrock of his experience, resulting in him leading the microsimulation modelling offering in his United Kingdom office before joining his expertise with colleagues and continuing his exposure to such work in Sydney. This is supplemented with extensive traffic engineering and design experience from feasibility through to detailed design and construction.

This life-cycle appreciation and experience with projects, pre-application and post-approval, give Ben a firm a thorough understanding of the traffic and parking impacts of public infrastructure schemes, private developments, and during construction. Ben has developed several post-approval reports and approvals assessing and mitigating the impacts of construction activities across NSW.

### RELEVANT PROJECT EXPERIENCE

#### HALL STREET, BONDI BEACH

Traffic engineering lead preparing design certification for construction certificate (CC) of all traffic and parking related areas of this mixed-use retail and residential development in Bondi Beach. The development provides car parking over two basement parking levels with several complex design features, including traffic signals managing two-way conflict of the vehicle ramp between ground level and basement level 1, a mechanical car lift between basement levels 1 and 2, and mechanical vehicle stackers for a more efficient car parking layout.

The design was reviewed several times during preparation of the CC plans, including extensive liaison with the architect, project team, and car stacker manufacturer to ensure the proposed arrangements met the relevant design standards and operate safely and efficiently. Further design advice was given on design changes to vehicle ramps, internal line marking and signage, and mitigation for any identified non-compliances.

#### FRENCHMANS ROAD, RANDWICK

Traffic engineering lead preparing design certification for CC of the parking area of this residential development. The development is granted vehicular access via a narrow right of way to the rear of the site which limits manoeuvrability. Extensive and detailed design advice was thus required to ensure the driveway was designed satisfactorily to comply with the relevant standards and operate efficiently. The design was further complicated by the irregular alignment of the property boundary and grading issues longitudinally and horizontally across parking areas, thus requiring much back and forth with the architect to ensure Council's engineering design standards were met for the driveway.

#### NEW SOUTH HEAD ROAD, EDGECLIFF

Project managed the development of a Construction Traffic Management Plan (CTMP) for the construction of a seven-storey mixed-use development with basement parking. The site fronts a State Road managed by Transport for NSW (TfNSW) and is a corner site fronting a set of traffic signals with Mona Road. As such, Council deferred comment on the suitability of traffic management arrangements to TfNSW.

The CTMP proposal was for a Works Zone to be implemented on the State Road of New South Head Road, which was undesirable to TfNSW given the anticipated impacts to traffic. As such, TfNSW requested that SIDRA traffic modelling be undertaken to assess the impacts of the lane closure during weekday AM and PM peak periods. We worked closely with the project team, Council, and TfNSW in undertaking the assessment and providing advice on the most appropriate traffic management arrangements to minimise the impacts to traffic on the TfNSW-managed State Road.

## Appendix B: Correspondence

## arc traffic + transport to Transport for NSW 12 October 2022

### Jindabyne Education Campus Construction Traffic Management Plan

AR Anton Reisch <antonreisch@optusnet.com.au>  
To 'Duncan.Mcrae@transport.nsw.gov.au'; 'Sharon.Horner@rms.nsw.gov.au'

Wed 12/10/2022 3:20 PM

Good afternoon Sharon and Duncan,

We are preparing a CTMP for the construction of the Jindabyne Education Campus in Barry Way, and am hoping to just have a quick chat to ensure that we are covering all the bases that Transport would like covered!

The CTMP is being prepared as a sub-plan to the broader Construction Environmental Management Plan in accordance with the SSD Consent for the Campus, so all the standard information will be included; I note that we have addressed the following:

- The Scope of Work to be assessed as part of the CTPMSP in accordance with the SSD Consent and Transport for NSW (**TNSW**), Austroads and Australian Standards guidelines;
- The proposed construction schedule, including a breakdown of key stages of the construction period and the associated transport demands of each of those stages;
- General construction characteristics, including staff and truck numbers and construction hours;
- Access to and from the Site through all stages of construction, including the use of designated truck routes to minimise impacts on the local road network;
- Traffic generation and distribution through all stages of construction, and an assessment of the potential impact of construction traffic on the operation of the local road network;
- Staff and truck parking requirements and provisions;
- Mitigation measures by which to minimise to as great an extent as possible any potential impacts that the construction will have on existing road users, including motorists, pedestrians and cyclists;
- Key strategies and protocols by which to maximise the safety and efficiency of construction operations across all stages of construction, focusing on the retention of safe and efficient vehicle, pedestrian and cyclist movements adjacent to the Site, and the ongoing monitoring of and – where required – revisions to the CTPMSP to respond to issues where they arise

We have also prepared a Driver Code of Conduct.

At this stage, there is little in the way of road occupancy, with all access via Barry Way and then the existing road that leads to the Jindabyne Sports Centre, the same route as currently being used for construction vehicles accessing the new TAFE site. Down the line we will need to prepare Traffic Control Plans (or the now lovely sounding Traffic Guidance Schemes!) for the construction of 2 new roundabouts to Barry Way, but the exact details of their construction are not available at this time – necessarily these details (and any TGS requirements) will be provided to TNSW and Council for future approval.

So...just hoping to touch base and make sure we aren't missing any local issues that may have a bearing on the CTMP. If either of you has the chance to reply to this email or given me a call I would be extremely grateful.

Many kind regards,

anton



anton reisch. director

## arc traffic + transport to Transport for NSW 13 October 2022

### RE: Jindabyne Education Campus CTMP

AR Anton Reisch <antonreisch@optusnet.com.au>  
To 'Maurice Morgan'

Thu 13/10/2022 4:30 PM

Afternoon Maurice, long time no speak, trust you and yours are all very well!

We are preparing a CTMP for the construction of the Jindabyne Education Campus in Barry Way, and am hoping to just have a quick chat to ensure that we are covering all the bases that Transport would like covered!

The CTMP is being prepared as a sub-plan to the broader Construction Environmental Management Plan in accordance with the SSD Consent for the Campus, so all the standard information will be included; I note that we have addressed the following:

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- The proposed construction schedule, including a breakdown of key stages of the construction period and the associated transport demands of each of those stages;
- General construction characteristics, including staff and truck numbers and construction hours;
- Access to and from the Site through all stages of construction, including the use of designated truck routes to minimise impacts on the local road network;
- Traffic generation and distribution through all stages of construction, and an assessment of the potential impact of construction traffic on the operation of the local road network;
- Staff and truck parking requirements and provisions;
- Mitigation measures by which to minimise to as great an extent as possible any potential impacts that the construction will have on existing road users, including motorists, pedestrians and cyclists;
- Key strategies and protocols by which to maximise the safety and efficiency of construction operations across all stages of construction, focusing on the retention of safe and efficient vehicle, pedestrian and cyclist movements adjacent to the Site, and the ongoing monitoring of and – where required – revisions to the CTPMSP to respond to issues where they arise

We have also prepared a Driver Code of Conduct.

At this stage, there is little in the way of road occupancy, with all access via Barry Way and then the existing road that leads to the Jindabyne Sports Centre, the same route as currently being used for construction vehicles accessing the new TAFE site – I'm not sure if there was an approval from Transport or Council for this route, but a public road and no Restricted Access vehicles proposed.

Down the line we will need to prepare Traffic Control Plans (or the now lovely sounding Traffic Guidance Schemes!) for the construction of 2 new roundabouts to Barry Way, but the exact details of their construction are not available at this time – necessarily these details (and any TGS requirements) will be provided to TNSW and Council for future approval.

So...just hoping to touch base and make sure we aren't missing any local issues that may have a bearing on the CTMP. If you a chance to reply to this email we would be extremely grateful, and of course don't hesitate to get in touch if you would like to discuss further.

Many kind regards,

anton








anton reisch. director

## Transport for NSW and arc traffic + transport 14 October 2022

RE: Jindabyne Education Campus Construction Traffic Management Plan

 Duncan Mcrae <Duncan.Mcrae@transport.nsw.gov.au>  
To: Anton Reisch  
Cc: Zachary.crombie-brown; Sharon Homer  
 You replied to this message on 14/10/2022 10:59 AM.

  Reply  Reply All  Forward  Fri 14/10/2022 10:03 AM






Hi Anton

Thanks for the heads up.  
Barry Way is on a regional road and as such we need to keep SMRC in the loop.  
I've add Zach to the email. Please include him on all future corro.

Regards Duncan

RE: Jindabyne Education Campus Construction Traffic Management Plan

 Duncan Mcrae <Duncan.Mcrae@transport.nsw.gov.au>  
To: Anton Reisch  
Cc: Zachary.crombie-brown; Sharon Homer  
 You replied to this message on 14/10/2022 1:11 PM.

  Reply  Reply All  Forward  Fri 14/10/2022 11:20 AM

Great, thanks Duncan -- I put in a call to Troy Dowd but haven't hear back, sounds like Zach is the right contact!

Per email, really just want to know if there are any issues for resolve; we will put in a Traffic Guidance Scheme (why did they have to change from Traffic Control Plan!) for the Site access driveways in the existing road south of the Site, but more detailed TGS will be required for the construction of the Barry Way roundabouts. The exact staging of the construction of the roundabouts hasn't been determined yet but would obviously come across your desk in the development of the TGS and then for approval.

Hope that all makes sense!! If there are any specific issues you would like us to consider please let me know, otherwise if you could confirm that the scope of work outlined below is appropriate that would be much appreciated.

As always, more than happy to discuss further.






Kind regards,

anton



RE: Jindabyne Education Campus Construction Traffic Management Plan

 Duncan Mcrae <Duncan.Mcrae@transport.nsw.gov.au>  
To: Anton Reisch  
Cc: Zachary.crombie-brown; Sharon Homer  
 You replied to this message on 14/10/2022 1:11 PM.

  Reply  Reply All  Forward  Fri 14/10/2022 11:20 AM

Hi Anton






Troy was acting in the RSO role, but has returned to his substantive position.  
When a new RSO is appointed we will include them in the corro.

Regards Duncan

## arc traffic + transport and Snowy Monaro Council, 8 November 2022

Jindabyne Education Precinct CTMP

 Anton Reisch <antonreisch@optusnet.com.au>  
To: 'Zachary.crombie-brown'  
 P0338r1v3 Jindabyne Education Campus CTPMSP.pdf  
3 MB

  Reply  Reply All  Forward  Tue 8/11/2022 3:27 PM

Hi Zach, great to chat!

As discussed, attached the CTMP in its current form which has been submitted to Department of Planning. TNSW was happy with it but if you have any comments in regard to local issues for example please let me know, and of course get in touch if you would like to discuss anything further.

Kind regards, and many thanks once again!

anton




**anton reisch.** director  
**m.** +61 427 995 160  
**a.** 19 canoon road, south turramurra, NSW 2074  
**e.** [antonreisch@optusnet.com.au](mailto:antonreisch@optusnet.com.au)  
**w.** [www.arctt.com.au](http://www.arctt.com.au)






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Thank you.

## arc traffic + transport and Snowy Monaro Council, 11 November 2022

### Jindabyne Education Campus CTMP

 Anton Reisch <antonreisch@optusnet.com.au>  
To: 'Zachary.Crombie-Brown'

 You replied to this message on 8/02/2023 4:24 PM.

  Reply  Reply All  Forward 

Fri 11/11/2022 11:56 AM

Morning Zach, trust you are well!

Just wondering if you had a chance to review the CTMP? Let me know when you have a chance, many thanks!

Kind regards,

anton








anton reisch. director  
m. +61 427 995 160  
a. 19 canoon road, south turramurra, NSW 2074  
e. [antonreisch@optusnet.com.au](mailto:antonreisch@optusnet.com.au)  
w. [www.arctt.com.au](http://www.arctt.com.au)

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## arc traffic + transport and Snowy Monaro Council, 8 February 2023

### Jindabyne Education Campus Construction Traffic Managment Plan Comments

 Anton Reisch <antonreisch@optusnet.com.au>  
To: 'Zachary.Crombie-Brown@snowymonaro.nsw.gov.au'

  Reply  Reply All  Forward 

Wed 8/02/2023 4:25 PM

Hi Zach, happy new year, hope all is very well!

Just wondering if you are able to provide any comments please on the Construction Traffic Management Plan I sent you in November 2022; Department of Planning is wanting to know if you had any comments, so anything you can provide – even just to say you generally agree with it (hopefully!!) – would be appreciated. As always, don't hesitate to get in touch if you need more information.

Kind regards,

anton









anton reisch. director  
m. +61 427 995 160  
a. 19 canoon road, south turramurra, NSW 2074  
e. [antonreisch@optusnet.com.au](mailto:antonreisch@optusnet.com.au)  
w. [www.arctt.com.au](http://www.arctt.com.au)

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## arc traffic + transport and Snowy Monaro Council, 13 February 2023

### Jindabyne EP CTMP

 Anton Reisch <antonreisch@optusnet.com.au>  
To: 'Zachary.Crombie-Brown@snowymonaro.nsw.gov.au'

  Reply  Reply All  Forward 

Mon 13/02/2023 10:24 AM

Hi Zachary,

Just following up from Friday, could you please let me know whether you had a chance to look at the CTMP and when you might be able to provide some comments when you have a chance.

Kind regards,

anton



anton reisch. director  
m. +61 427 995 160  
a. 19 canoon road, south turramurra, NSW 2074  
e. [antonreisch@optusnet.com.au](mailto:antonreisch@optusnet.com.au)  
w. [www.arctt.com.au](http://www.arctt.com.au)





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## arc traffic + transport and Snowy Monaro Council, 14 February 2023

RE: Jindabyne EP CTMP



Anton Reisch <antonreisch@optusnet.com.au>  
To: 'Zachary Crombie-Brown'

 Reply
  Reply All
  Forward
 

Tue 14/02/2023 8:48 AM

**From:** Zachary Crombie-Brown <Zachary.Crombie-Brown@snowymonaro.nsw.gov.au>  
**Sent:** Monday, February 13, 2023 8:23 PM  
**To:** 'Anton Reisch' <antonreisch@optusnet.com.au>  
**Subject:** RE: Jindabyne EP CTMP

Hi Anton,

Apologies for the delay.

My few comments on the Traffic Plan:

- In my last consultation with TfNSW & DET it was recommended that the southern roundabout location would be considered for amendment. This was to incorporate Tinworth Drive into the intersection, removing the dogleg and safety concerns that arise from the existing driveway and intersection. However I understand the designs are still underway for the roundabouts.
- Council is about to undertake works to widen the Barry Way, including this section of the road. The current timelines indicate that Council's works along the Barry Way will be complete by April 2023. If works on the roundabouts are to begin within this timeframe, further consultation is required with Council to understand clashes with construction vehicle movements by both parties.
- Council will require a Section 138 submission prior to works beginning in Council's road reserve (as opposed to the ROL).

The first point is just for note – as the design and scope of the project are currently sitting with others.

Other than that, looks good.

Thanks,  
Zach

## arc traffic + transport and Snowy Monaro Council, 14 February 2023\

RE: Jindabyne EP CTMP



Anton Reisch <antonreisch@optusnet.com.au>  
To: 'Zachary Crombie-Brown'

 Reply
  Reply All
  Forward
 

Tue 14/02/2023 8:48 AM

Awesome, thanks so much Zach, really appreciate you coming back and your comments.

Just to note the following:

- Yes, aware that Council and TfNSW is asking for a redesign of the southern roundabout so that it aligns with Tinworth Drive; we will obviously continue to coordinate with Council and TfNSW going forward to ensure that the Precinct roads align properly with any new works.
- Re potential road construction and Precinct construction occurring at the same time, we will again continue to coordinate with Council and TfNSW; it may be that we need to look at revising the CTMP as we go (pretty standard practice as things change through a project) to ensure maximum efficiency and safety in this part of the road network.
- Yes, Section 138 to be prepared for any works in the Council road reserve, and likely preparation of Traffic Guidance Scheme as part of any CTMP revisions.

We will no doubt be in touch again as we move along to ensure that the process is by the book and that we keep getting and acting on any feedback from Council and TfNSW.

So...many thanks once again, and look forward to talking again down the road.

Kind regards,

anton



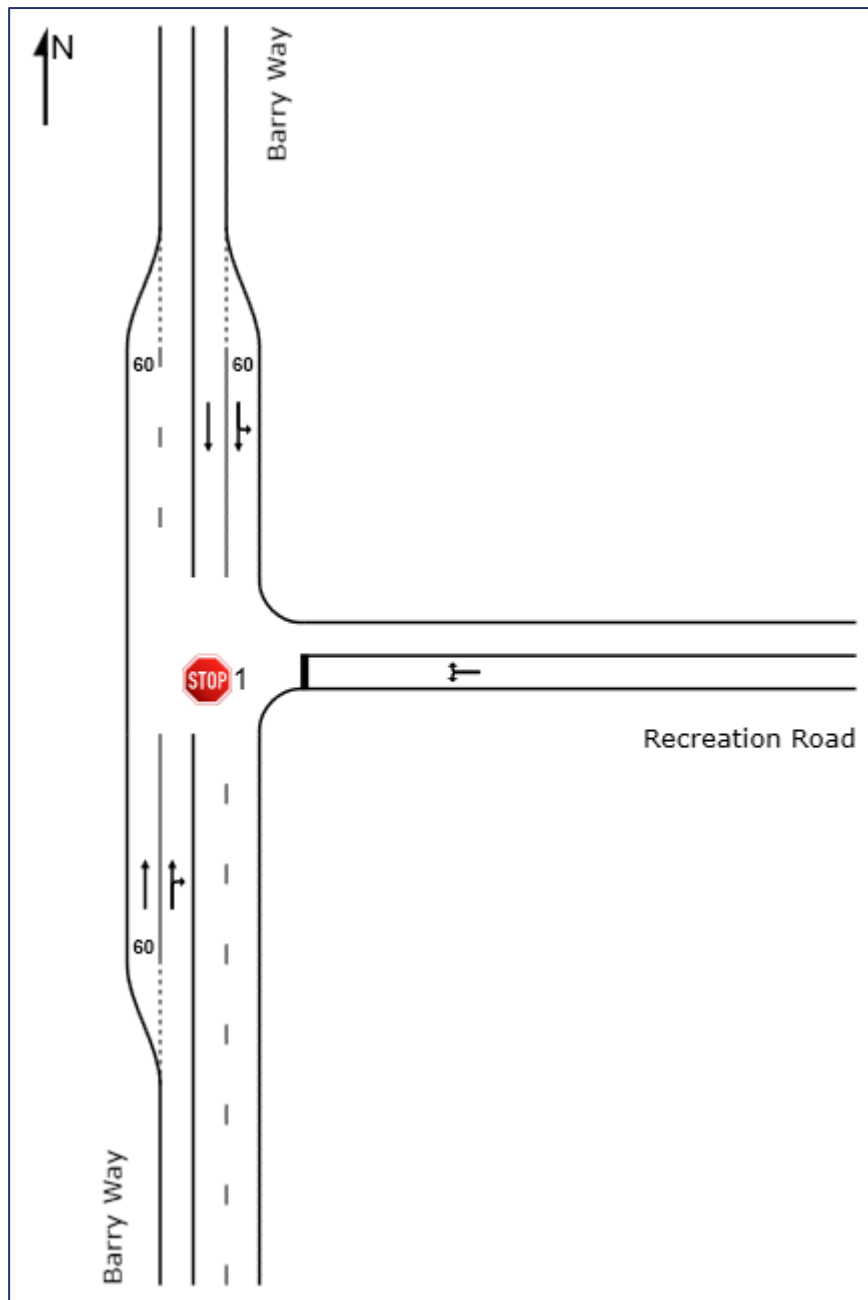
**anton reisch.** director  
**m.** +61 427 995 160  
**a.** 19 canoon road, south turrumurra, NSW 2074  
**e.** [antonreisch@optusnet.com.au](mailto:antonreisch@optusnet.com.au)  
**w** [www.arcit.com.au](http://www.arcit.com.au)

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## Appendix C: SIDRA Movement Reports

## SIDRA Intersection Plan



## Intersection of Barry Way & Recreation Road Priority Control: AM 2023 Peak Construction Period

### MOVEMENT SUMMARY

**Site: 1 [Barry Way & Recreation Road Priority Control AM (Site Folder: General)]**

AM Peak 2023  
 30 Minute Arrival Peak  
 Peak Construction Trips  
 Site Category: Existing Design  
 Stop (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES [ Total HV ] veh/30min %		DEMAND FLOWS [ Total HV ] veh/h %		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [ Veh. Dist ] veh m		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Barry Way														
2	T1	234	10.0	493	10.0	0.208	0.3	LOS A	0.1	0.9	0.02	0.01	0.02	49.9
3	R2	5	10.0	11	10.0	0.208	6.0	LOS A	0.1	0.9	0.03	0.02	0.03	48.9
Approach		239	10.0	503	10.0	0.208	0.4	NA	0.1	0.9	0.02	0.01	0.02	49.8
East: Recreation Road														
4	L2	5	10.0	11	10.0	0.063	7.9	LOS A	0.2	1.9	0.18	0.96	0.18	40.8
6	R2	5	50.0	11	50.0	0.063	26.1	LOS B	0.2	1.9	0.18	0.96	0.18	40.1
Approach		10	30.0	21	30.0	0.063	17.0	LOS B	0.2	1.9	0.18	0.96	0.18	40.5
North: Barry Way														
7	L2	42	10.0	88	10.0	0.066	4.7	LOS A	0.0	0.0	0.00	0.41	0.00	47.1
8	T1	70	10.0	147	10.0	0.066	0.0	LOS A	0.0	0.0	0.00	0.07	0.00	49.5
Approach		112	10.0	236	10.0	0.066	1.8	NA	0.0	0.0	0.00	0.20	0.00	48.6
All Vehicles		361	10.6	760	10.6	0.208	1.3	NA	0.2	1.9	0.02	0.10	0.02	49.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

## Intersection of Barry Way & Recreation Road Priority Control: PM 2023 Peak Construction Period

### MOVEMENT SUMMARY

**Site: 1 [Barry Way & Recreation Road Priority Control PM (Site Folder: General)]**

PM Peak 2023  
 30 Minute Arrival Peak  
 Peak Construction Trips  
 Site Category: Existing Design  
 Stop (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES [ Total HV ] veh/30min %		DEMAND FLOWS [ Total HV ] veh/h %		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [ Veh. Dist ] veh m		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Barry Way														
2	T1	121	10.0	255	10.0	0.114	0.4	LOS A	0.2	1.2	0.06	0.02	0.06	49.6
3	R2	5	10.0	11	10.0	0.114	7.9	LOS A	0.2	1.2	0.09	0.03	0.09	48.6
Approach		126	10.0	265	10.0	0.114	0.7	NA	0.2	1.2	0.06	0.02	0.06	49.6
East: Recreation Road														
4	L2	5	10.0	11	10.0	0.522	16.8	LOS B	2.4	23.7	0.85	1.15	1.28	33.9
6	R2	42	50.0	88	50.0	0.522	39.4	LOS C	2.4	23.7	0.85	1.15	1.28	33.5
Approach		47	45.7	99	45.7	0.522	37.0	LOS C	2.4	23.7	0.85	1.15	1.28	33.5
North: Barry Way														
7	L2	5	10.0	11	10.0	0.140	4.7	LOS A	0.0	0.0	0.00	0.02	0.00	49.2
8	T1	239	10.0	503	10.0	0.140	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	49.9
Approach		244	10.0	514	10.0	0.140	0.1	NA	0.0	0.0	0.00	0.01	0.00	49.9
All Vehicles		417	14.0	878	14.0	0.522	4.5	NA	2.4	23.7	0.11	0.14	0.16	47.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

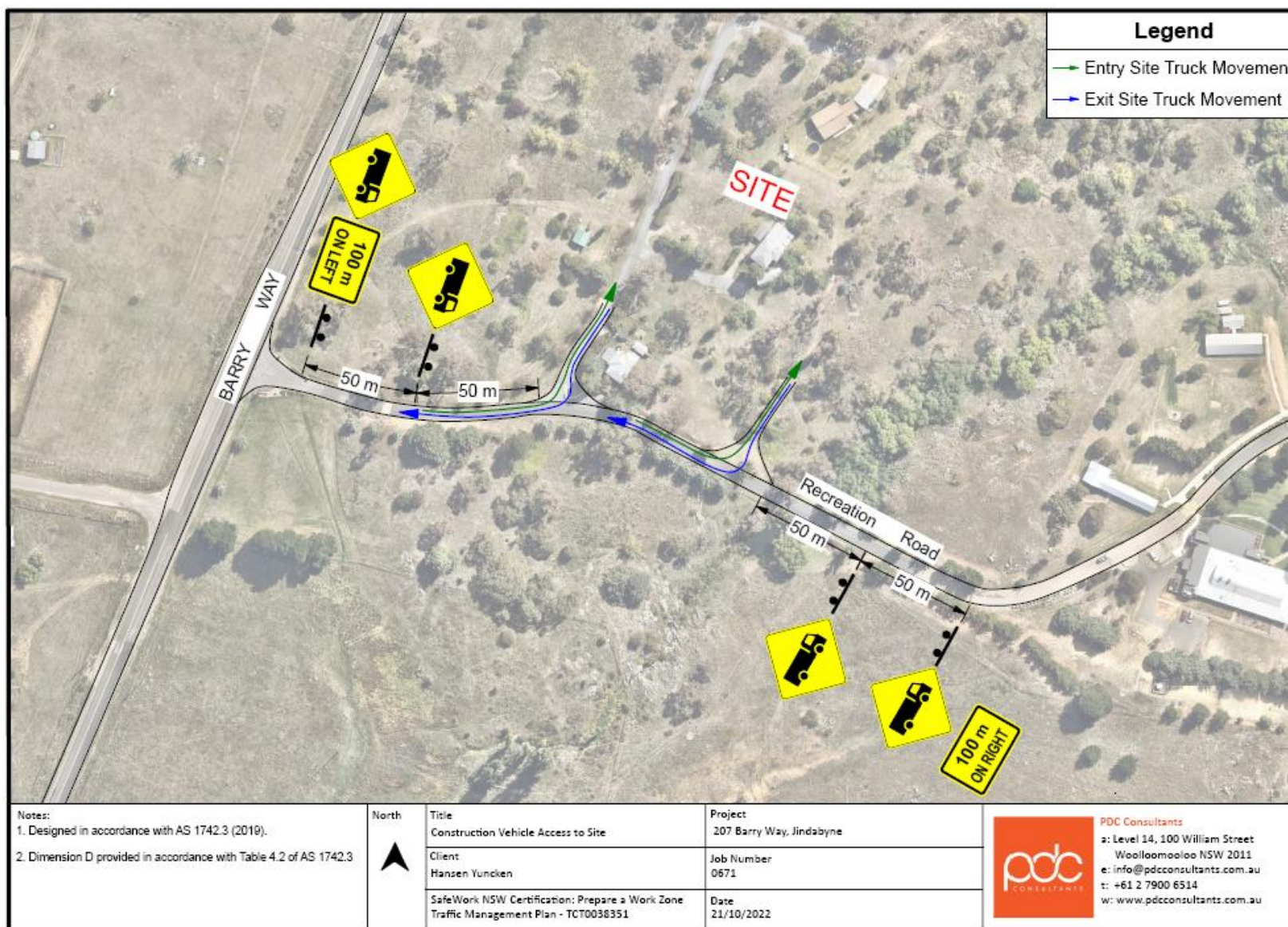
Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

## Appendix D: Traffic Guidance Scheme – Recreation Road Site Driveways



## Appendix E: Drivers Code of Conduct



# Drivers Code of Conduct

## 1 Drivers Code of Conduct Objectives

This Drivers Code of Conduct is to be provided to all truck and company vehicle drivers accessing the Site. The objectives of the Drivers Code of Conduct include:

- Minimising the impact of truck and company vehicle movements on the on-site work environment and local road network;
- Minimising conflict with other on and off-site road users;
- Minimising truck traffic noise; and
- Ensuring truck drivers use the designated truck routes.

The Drivers Code of Conduct also requires that, while driving any truck or company vehicle for construction related purposes, drivers must:

- Demonstrate safe driving and road safety activities;
- Abide by traffic and road legislation;
- Abide by on and off-site speed limits at all times; and
- Follow Site signage and instructions at all times.

## 2 Key Driver Controls

### Truck Operating Periods

Construction hours – **including the delivery of materials to/from the Site** - will be as follows:

- 7:00am to 6:00pm Monday to Friday; and
- 8:00am to 1:00pm on Saturdays;

No construction of truck movements are permitted on Sundays or public holidays.

Where it is necessary for any truck movements to occur outside of the conditioned truck movement hours, an approved **OHV Permit** will be required prior to any such truck movements. The Principal Contractor must be notified of any intention for truck movements outside of the approved construction hours, and provide approval for the OHV Permit application prior to its submission to the relevant authorities.

### Speed Limits

All truck, company vehicle and general construction staff drivers are to travel within the posted speed limits in the public road network at all times.

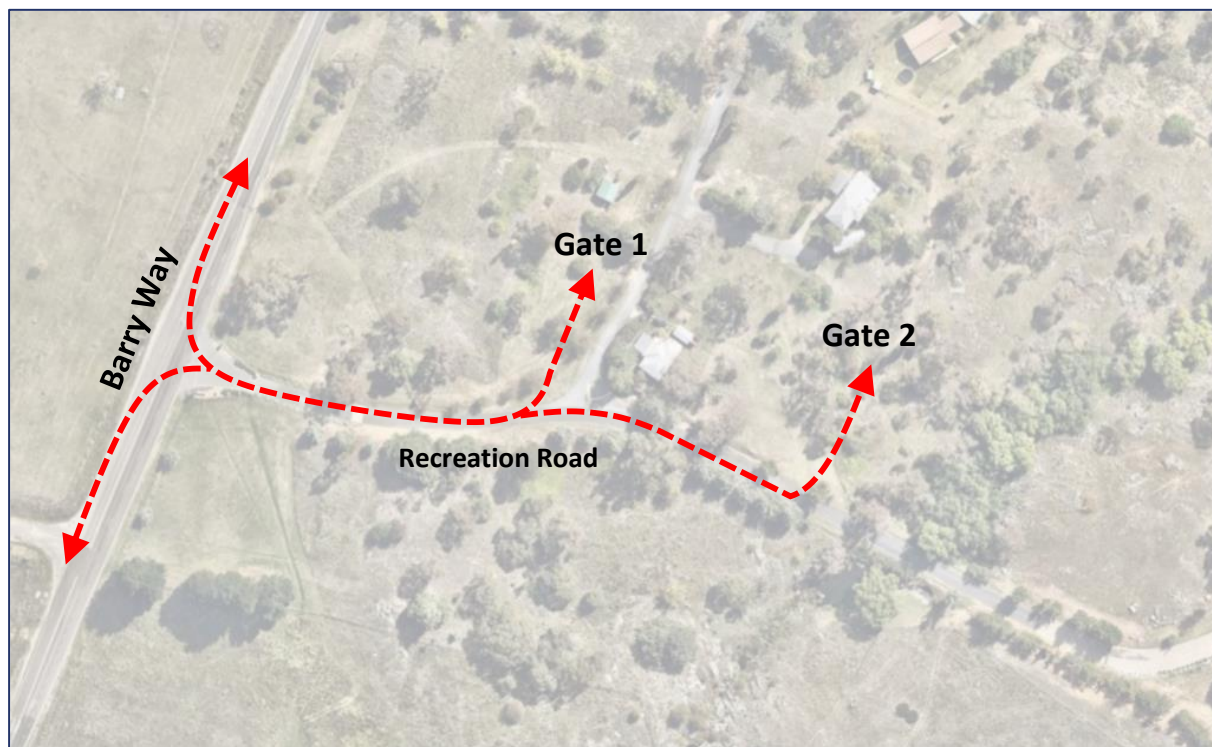
All truck, company vehicle and general construction staff drivers are to travel at a speed on no greater than 20km/h within the Site at all times.

## Site Access: Recreation Road

Primary access to the Site will be via Barry Way and Recreation Road which runs along the southern boundary of the Site. Gate 1 is located immediately west of the existing residential driveway running north from Recreation Road into the Site, while Gate 2 is located the east of the residential driveway.

These access driveways are shown below, noting that all vehicles are strictly required to enter and depart the Site in a forward direction.

### Recreation Road Site Access



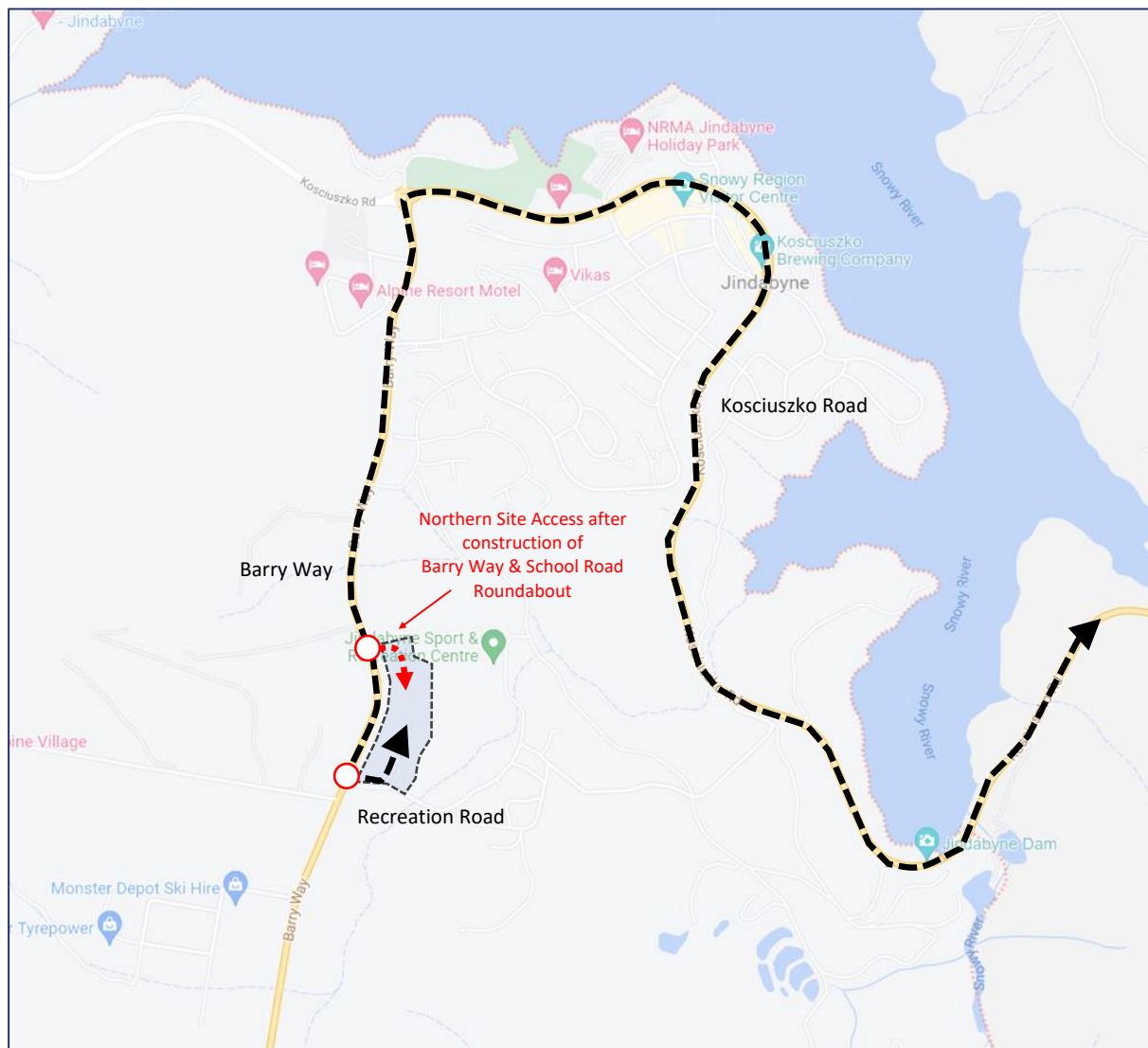
Source: Nearmap

During (and after) the construction of the northern roundabout in Barry Way (at School Road), a third access driveway (Gate 3) to the Site will also be available; the Principal Contractor will inform all construction staff of the use of Gate 3 for access once it becomes available.

## Designated Truck Route

A designated truck route must be used by all truck drivers at all times, other than contractors located in the local area using (approved) roads for access. This designated truck route is shown below, noting again that the Principal Contractor will inform all construction staff of the use of Gate 3 when it becomes available.

## Designated Truck Route



Source: Google

## 3 Breach of Drivers Code of Conduct

The following activities by any truck or company vehicle driver would be considered as a breach of the Drivers Code of Conduct:

- Reckless or dangerous driving causing injury or death;
- Driving whilst disqualified or not correctly licensed;
- Drinking or being under the influence of drugs while driving;
- Failing to stop after an incident;
- Loss of demerit points leading to suspension of licence;
- Any actions that warrant the suspension of a licence; and/or
- Exceeding the speed limits in place in public roads and on-site.

Any drivers found to be in breach of the Drivers Code of Conduct will be notified of the breach, as would their immediate managers, who would in turn be required to provide additional training/guidance to the driver. **Any repeat offenders would be prevented from returning to Site.**

## 4 Driver Responsibilities

All truck and company vehicle drivers must:

- Be responsible and accountable for their actions when operating a truck or company vehicle;
- Ensure they have a current driver licence for the class of vehicle they are driving, and this licence is to be carried with them at all times;
- Immediately notify their manager if their drivers licence has been suspended, cancelled, or has had limitations applied;
- Comply with all traffic and road legislation when driving;
- Regularly check the operating condition of trucks or company vehicles;
- Ensure their vehicles have correctly been fitted with mufflers to minimise noise disturbance, and use only the approved construction vehicle routes during approved construction hours so as to minimise noise impacts in residential and urban areas;
- For truck drivers, not drive along routes other than the designated truck routes;
- Never drive under the influence of alcohol or drugs;
- Wear a safety seat belt at all times when in the vehicle;
- Report any near-misses, crashes or scrapes to their manager, including those that do not result in injury;
- Report infringements to a manager at the earliest opportunity;
- Report vehicle defects to a manager prior to the next use of the vehicle; and
- Keep loads covered at all times (where relevant).

## 5 Crash or incident Procedure

In the event of a crash or other traffic incident, the truck or company vehicle driver is required to:

- Stop the vehicle as close to it as possible to the scene, making sure this not hindering traffic;
- Ensure one's own safety first, then help any injured people and seek assistance immediately if required;
- Ensure that key information is exchanged with the other driver, including the registration, names and insurance details of other vehicles/drivers;
- Ensure that the police are contacted should there be a disagreement over the cause of the crash, if there are injuries or if property is damaged; and
- As soon as reasonably practical, report all details gathered to the Principal Contractor.