HANSENYUNCKEN	PROJECT HSE RISK ASSESSMENT This Project HSE Risk Assessment is to beused as aguide when completing the monthly Project High Risk Identification assessment on HVWAY Site Management Dashboard in accordance with the Proje Risk Assessment procedure and should be conducted at the time of Construction programme statusing to assess the azards and risks for next month. Hazards with residual risk from the Design WHS Risk Assessment procedure and should be conducted at the time of Construction programme statusing to assess the azards and risks for next month. Hazards with residual risk from the Design WHS Risk Assessment procedure and should be conducted at the time of Construction programme statusing to assess the azards and risks for next month.										the Project HSE Risk Assessment
RELEVANT PROCEDURE:	Projec	t HSE I	Risk Assess	sment	DICK				Consequer	Ce	
	lindah	wne Ed	ucation Car		RISK	ASSESSMENT TABLE	1	2	3	4	5
	Jindab	Jyne Lu	deation car	ipuo		Likelihood	Significant	Major	Moderate	Minor	Insignificant
JOB NO:	SN10	5			A B	Very Likely Likely	High High	High High	High Medium	Medium Medium	Medium Medium
ASSESSED BY:	Daniel	Spirit J	lones, Mick	Parker, Matt O'Grady, Tim Redmond, Chris Histon	C D	Possible Remotely Possible	High Medium	Medium Medium	Medium Medium	Medium Low	Low
ASSESSMENT DATE:	13 - 10 WAY	0 - 2022	2 (FOR INF	ORMATION ONLY) - PLEASE REFER ALSO TO HY RISK IDENTIFIER ON HY-	E	Very Unlikely	Medium	Medium	Low	Low	Low
	RIS	K ASSE	SSMENT	CONTROLS (to be established in the following order of	f priorit	tv 1st=High Level Risks	: 2nd = Mediu	m Level Risks	s: 3rd = Low I	evel Risks)	NA
HAZARD (Include additional project energific bazards as required)		c	Class	Logislation Standards & Codes of Practice	İ		Enter Details	of Specific Co	ontrols Requi	, her	
	-	Ŭ	01033	Legislation, standards & obdes of Fractice			Linter Dotaile		shirolo rioqui		
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	Subc	ontractors are available to	repair service	s in the event t	hey are dama	jed	
Plant operators striking underground services whilst undertaking trencing/excavation works	с	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 les 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 wo						
Excavators digging trenches accidently striking recently installed and charged up hydrant lines throughout the site	Е	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						
Explosive Powered Tools				•							
Eye and hearing damage	Е	4	Low	Jindabyne Education Campus WHS Plan	Eye a	ind hearing protection mu	st be worn. W	orkers must be	closely super	vised by their s	upervisor
Excavations											
Excavation over 1.5m	с	3	Medium	NSW Code Of Practice: Excavation 2000	All trenches over 1.5m must be benched at 1:1 at a maximum of 1.5m or battered at 45 degrees unless stated otherwise by a geotechnical engineers report. A ramp or steps must be cut into the trench for ea pedestrian access.Shoring boxes to be used for trenches greater than 1.5 m deep if benching is not possible						
Large stockpiles of spoil creating blind spots for plant operators and truck drivers	Е	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 bends on haul roads.						
Trench collapse trapping workers	с	1	High	AS 2763 Vibration and shock - hand transmitted vibration - guidelines for measurement and assessment of human exposure	Plant operators are to avoid stockplung spoil next to bends on nau roads. Any trenching in unstable ground is to be bencked/ batterid. If the excavation reaches rock or shale an benching/ battering is not practical gedechnical engineers signoff is required. A ramp must also be cut the next of the for one constant approximation of the second state of the second state of the former second states and the former second states approximation of the second states and the former second states approximation of the second states and the former second states approximation of the second states approximation of the second states and the second states and the second states approximation of the second states approximation						ck or shale and ist also be cut into
Plant eg. mobile crane set up too close to a trench could result in trench collapse	с	2	Medium	lindabyne Education Campus WHS Management Plan	All pla	ant must be set up clear o	of the zone of ir	fluence			
and plant roll over Plant outriggers sinking into ground resulting in plant roll over.	с	1	High	AS 3798 Guidelines on earthworks for commercial & residential developments	Plant rigger	must only be set up on s s. Sole plates are to be u	olid ground and sed underneat	l sufficient pig n EWP stabiliz	sty packing/ s ers if the grou	ole plates place nd is soft. Grou	ed underneath out and conditions to
Open trenches restricting access for vehicles and pedestrians around site	с	4	Medium	NSW Dial Before U Dig Legislation	Pede	strian / vehicle/ plant acc	ess must be ke	pt clear at all ti	imes around si	te. Alternative	access routes are
Puilding materials/ stackpilon stored page tranch aguid regult in tranch collapse	6	2	Madium		to be	set up prior to trenching	across pathwa	s and roadway	ys.		
Different trades working in the same area at the same time could strike each other	C	3	Weatum		Daily	pre-starts and SWMS de	tail how to wor	k around movie	no plant on site	including plan	t used by other
with mobile plant	A	2	High		trades	s eg. spotters, barricade	he work area,	signage etc	ig plant on oil	including plan	a dood by outor
Damage to existing buildings from vibrations caused by machinery	NA	4	NA		Vibrat	tion from earthworks to b	e monitored by	HY and subco	ntractors		
Formwork											
Formwork collapse	в	1	High	Code of Practice: Formwork	Form loads Once Place struct	work must be certified by that may be applied by th engineer's inspection co plant and materials on fo ture or deck is sufficiently	a qualified eng ne concrete poi mplete ensure rmwork and fa constructed s	ineer that it is ur, workers, rei any additional l sework only w o it is able to b	structurally so inforcement & back propping here allowed for ear the load	und and able to crane lifted loa is installed if re or by the design	o safely support ds. equired. n and when the
Fall from heights	A	1	High		Spread first section of joist on beam from intermediate work platform and only access the deck to start laying ply once the joist are down and handrall is in place. Use scaffold to gain access to deck to start laying plywood When you sheet up to 1.8m from end of joist any 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 450 maximum to prevent any possibility of falls while construction of the deck. Establish working areas for steeffixers & other trades. A formwork only zone should be maintained behin the leading deg. This zone should be clearly demarcated by signage and a barrier. Protect open penetrations with edge protection (e.g. handrails) or cover securely. CastSin metal mesh wi a small aperture (e.g. 50 x 50 mm mesh size or smaller) for small penetrations. Paint ply covers with appropriate warnings (e.g. "PENO" or similar) and fasten securely.						e deck to start alls while maintained behind metal mesh with covers with
Cuts/ impalement on starter bars	В	3	Medium		Safet	y caps to be fitted to all s	arter bars whe	rever there is a	a risk that a pe	rson may fall o	n one.
Fall prevention/ arrest equipment											
Failure of fail arrest equipment	в	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 co and other forms of fail protection should be used such as perimeter scatfolding, 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 fail arrest must be developed prior to persons using safety harnesses					ast form of control Indrails etc ot up to date using safety	
<u>1</u>		•			•						

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RELEVANT PROCEDURE:	Projec	t HSE F	Risk Assess	ment					Consequer	ICO		
					RISK	ASSESSMENT TABLE	1	2	3	4	5	
PROJECT:	Jindab	yne Ed	ucation Can	ipus		Likelihood	Significant	Major	Moderate	Minor	Insignificant	
JOB NO:	SN105	5			A	Very Likely	High	High	High	Medium	Medium	
					c	Possible	High	Medium	Medium	Medium	Low	
ASSESSED BY:	Daniel	Spirit J	ones, Mick	Parker, Matt O'Grady, Tim Redmond, Chris Histon	D	Remotely Possible	Medium	Medium	Medium	Low	Low	
ASSESSMENT DATE:	13 - 10 WAY	) - 2022	(FOR INFO	ORMATION ONLY) - PLEASE REFER ALSO TO HY RISK IDENTIFIER ON HY-	E NA	Very Unlikely Not applicable	Medium NA	Medium NA	Low NA	Low NA	Low	
	RISI	K ASSE	SSMENT	CONTROLS (to be established in the following order of	priorit	y 1st=High Level Risks	; 2nd = Mediu	m Level Risk	s; 3rd = Low I	evel Risks)		
HAZARD (Include additional project specific hazards as required)	L	с	Class	Legislation, Standards & Codes of Practice			Enter Details	of Specific C	ontrols Requi	red		
Fall from heights												
Workers falling into open trenches	с	3	Medium	AS 1418.1: Cranes, hoists and winches – General Requirements	All open trenches must be bunted off at least 1m from the edge of the trench. Where there are high movements of pedestrians an plant then a solid barrier such as a temporary mesh, water-filled barriers o equivalent							
Workers falling into open penetrations (eg in-ground pits)	С	3	Medium	WHS Regulation 2011 Part 4.4 Falls	All per	netrations to be covered	with and secur	ed and the wor	ding "peno" or	"do not remov	e" sprayed onto the	
Workers failing from ladders	с	3	Medium	NSW Code Of Practice: Managing the risk of falls at workplaces	Ladde and of Stand small	od ers are to used in accordance with the HY ladder policy. Ladders are the last resort for height acces ther means of height access should be used eg EWPs, mobile scaffidding, platform ladders etc. lard A frame ladders can be used but only for should rularito works or tight restricted spaces such a rooms where a scissor lift will not fit. Ladders with 4 steps or less are not permitted on site						
Bricklayers falling from trestle scaffold	С	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	Modul Handr with tr a hand under	odular stairs to be installed at the same time as decks are installed for safe access to each deck. andrails must be installed from deck below prior to accessing the deck above. Ends must be closed off th trannys. Scaffolder will erect 'danger scaffold incomplete' signage until the scaffold is ready for use a handver certificate has been issued to HY. All trades have been made aware not to alter the scaffold ider any circumstance.						
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 bunted 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	в	3	Medium	Scaffold erection guide (comes with scaffold)	A All mobile scaffolding must be built as per the manufacturers instructions. Handrails and midrails must b place. Any scaffold where a person can fall more than 4m must be erected by a licenced scaffolder.							
Workers falling from heights	с	2	Medium	Jindabyne Education Campus WHS Plan	Roof a handr Practi	access permit must be ol ail must be in place for fa ce: Safe Work On Roofs	otained by the Ill protection. S : Part 1	roofer prior to a afety mesh mu	accessing the ist be installed	oof. Perimeter correctly as pe	scaffold or er Code Of	
Falls into bored piers	в	2	High	AS/NZS 1892 Portable Ladders	Bored hole. I with c	piers must be fully cove Deep excavation signs ar oncrete as soon as poss	red with mesh e to be erected ible. Further co	(SI101 minimu I and the are fu Introls to be de	m) to eliminate Illy bunted off. tailed in subco	risk of worker Best practice i ntractor SWM	s falling into the s to fill the hole S	
Falling objects												
Pallets of blocks stacked too high could tip over and injure a person	А	4	Medium	Workcover Bricklayers guide	Pallets	s of blocks must be stac	ked on level gro	ound no more t	han 2 pallets h	igh		
Scaffold parts could fall/ be knocked off the deck and injure workers below	NA	2	NA	AS 1576: Scaffold general requirements	All exc scaffo	cess scaffold material mu Id decks	ist remain on t	ne ground. No	excess scaffol	d material is to	be left lying on	
Formwork and reo materials falling from deck onto persons below	в	2	High		All FR must l	P materials must be stat be put in place	ked neatly cle	ar from edge o	f deck. If this is	not possible t	hen kick boards	
Building material and tools falling from scaffold decks	NA	2	NA	Jindabyne Education Campus WHS Plan	Edge remov	boards to be fitted to all s ved from decks daily. If p	scaffold decks. ossible do not :	Materials stor store materials	ed on scaffoldi on scaffold at	ng is to be kep all.	t to a minimum and	
Falling materials from EWP's	А	1	High	AS/NZS 2210 Occupational protective footwear	No wo be full	orker is to walk undernea by barricaded off with red	th an elevated white tape, bu	EWP. All EWP	operation mu g or signage i	st have a spott 1 place	er or the area must	
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 ac requir	cess to any open trench ed for trenching over 1.5	es for workers m	unless the wal	s of the trench	are stable. Ge	otech sign off	
Materials left behind after works finish eg. loose bolts, off cuts etc	В	1	High	AS/NZS 1801 Occupational protective helmets	Work	areas at heights must be	e checked daily	and loose iten	ns brought dov	n to ground le	vel.	
Fauna (protected or endangered species)												
Snakes and insects in long grass	в	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 wipper snipper							
Fire												
Chemical and fuel spills may cause a fire	Е	1	Medium	Jindabyne Education Campus Emergency Response Plan	A;BE 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	в	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	Е	1	Medium	AS 2444 Portable fire extinguishers and blankets - Selection & location	on & location All workers are told at site induction not to place themselves at risk and not to try and fight the fire							
I ime taken to obtain fire extinguisher in the event of an emergency	D -	1	Medium	AS/NZS 1841 Portable fire extinguishers AS 2375 Guide to the selection, care & use of clothing for protection against heat	KS 1841 Portable fire extinguishers     Fire extinguishers are places strategically around site for easy/ fast access. Locations of fire extinguishers     S Guide to the selection, care & use of clothing for protection against heat							
Poor maintenance of fire extinguishers	E	1	Medium	& fire	rre e	xunguisners are to be tag	igea every 6 m	onths by a cor	upetent persor			

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RELEVANT PROCEDURE:	Projec	t HSE F	Risk Assess	sment	DIOK				Conseque	nce		
550 JEAT		-			RISK	ASSESSMENT TABLE	1	2	3	4	5	
PROJECT:	Jindab	iyne Edi	ication Carr	npus		Likelihood	Significant	Major	Moderate	Minor	Insignificant	
-					А	Very Likely	High	High	High	Medium	Medium	
JOB NO:	SN105	5			в	Likely	High	High	Medium	Medium	Medium	
			_		с	Possible	High	Medium	Medium	Medium	Low	
ASSESSED BY:	Daniel	Spirit J	ones, Mick	Parker, Matt O'Grady, Tim Redmond, Chris Histon	D	Remotely Possible	Medium	Medium	Medium	Low	Low	
					-	Ven/ Unlikely	Modium	Modium	Low	Low	Low	
ASSESSMENT DATE:	13 - 10 WAY	) - 2022	(FOR INFO	DRMATION ONLY) - PLEASE REFER ALSO TO HY RISK IDENTIFIER ON HY-		Net englischie	NIA	NIA	LUW	LUW	LOW	
					INA	Not applicable	INA	INA	INA	NA	NA	
	RISI	K ASSE	SSMENT	CONTROLS (to be established in the following order of	priorit	ty 1st=High Level Risks	; 2nd = Mediu	m Level Risk	s; 3rd = Low	Level Risks)		
HAZARD (Include additional project specific hazards as required)	L.	с	Class	Legislation, Standards & Codes of Practice			Enter Details	of Specific C	ontrols Requi	red		
First aid												
Persons unaware of what to do if an individual requires first aid	Е	5	Low	WHS Regulation 2011	Emergency response plan posted on site notice board. All workers explained of 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.							
It may not be possible to take the injured person to the first aid room because of the seriousness of their injuries	Е	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	Е	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 examination couch as per Code of Practice: First Aid .							
Inadequately trained first aiders/ insufficient number of first aiders	Е	3	Low	Jindabyne Education Campus Emergency Response Plan	HY Si First a	ite Foreman must have A aid certificate	pply First Aid t	ype certificatio	n. HY Safety (	Officer must ha	ve Occupational	
Persons working alone unable to raise the alarm	Е	3	Low	Jindabyne Education Campus Emergency Response Plan	No pe at site	erson is to work alone. Th e induction	ere must be ar	nother person i	in the area at a	Il times. This is	told to all workers	
Heart attack/ stroke	E	1	Medium	Jindabyne Education Campus Emergency Response Plan	Defibr	rillator to be kept in first a	id room					
Number of buildings Maximum Number of levels on each building	E	5	Low	Jindabyne Education Campus Emergency Response Plan	1.2.	<ul> <li>All bave internal stair ac</li> </ul>	cess	venicies				
Time taken to walk to furthest point on site	D	4	Low	Jindabyne Education Campus Emergency Response Plan	7.8 m	inutes from furtherst noir	nt on site					
Nearest Hospital	D	4	Low	Jindabyne Education Campus Emergency Response Plan	Coom	a Hospital (62kms away	- 50 minute dri	ive)				
Nearest Medical centre	D	4	Low	Jindabyne Education Campus Emergency Response Plan	Snow	v Mountains Medical Cer	ntre					
Maximum time to medical service	D	4	Low	Jindabyne Education Campus Emergency Response Plan	6 min	utes						
Maximum number of workers	D	4	Low	Jindabyne Education Campus Emergency Response Plan	200 -	250						
Number of other persons	E	4	Low	Jindabyne Education Campus Emergency Response Plan	10 - 1	5						
Site hours	Е	5	Low	Jindabyne Education Campus Emergency Response Plan	7:00a Holida	m - 6:00pm Monday - Fri ays. A first aid qualified p	iday 8:00ar erson from Har	m - 1:00pm Sa nsen Yuncken	turday. No Wo is on site at al	orks on Sunday I times	s or Public	
Average hours worked by a worker	E	5	Low	Jindabyne Education Campus Emergency Response Plan	Work	ers generally work 8-10 h	nours per day					
Remote or isolated works	Е	4	Low	Jindabyne Education Campus Emergency Response Plan	Work	ers are not permitted to v	vork alone. The	ere must be at	east 2 workers	s in the same a	rea at all times.	
Types of injuries over the last 12 months	Е	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	Е	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	Е	3	Low	Jindabyne Education Campus Emergency Response Plan	Occasionally workers have failen ill (not work related) however these people are sent to a Doctor for further treatment							
Cuts and abrasions	С	4	Medium	Jindabyne Education Campus Emergency Response Plan	Type.	A first aid kit has content	s for treating th	hese types of i	njuries			
Sprains and strains	D	4	Low	Jindabyne Education Campus Emergency Response Plan	Ice pa	acks and instant cold pac	ks to be availal	ble			-	
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	Jinuapyne Education Campus Emergency Response Plan	Sarety	y uata sneets available for	I all SUDStance	s usea. Uxy vi	va system to b	e kept in first a	iu ruom	
Heat stroke	D	4	Low	Jindabyne Education Campus Emergency Response Plan	Ice packs and cold water on standby. Subcontractors have been addressed at side induction to take breaks, work in shade wherever possible, job rotation etc.							

<b>HANSENYUNCKEN</b>	This Risk /	s Project Assessr	t HSE Risk nent proced	PROJECT HSE R Assessment is to beused as aguide when completing the monthly Project High R ure and should be conducted at the time of Construction programme statusing to (ff applicable) are a	ISK isk Iden assess ilso to b	ASSESSM tification assessment on hazards and risks for ne e considered.	ENT HYWAY Site ext month. Haza	Management I ards with resid	Dashboard in a ual risk from tl	ccordance with	the Project HSE Risk Assessment	
RELEVANT PROCEDURE:	Projec	t HSE F	Risk Assess	ment			Consequence					
					RISK	ASSESSMENT TABLE	1	2	3	4	5	
PROJECT:	Jindab	byne Edi	ucation Can	npus		Likelihood	Significant	Major	Moderate	Minor	Insignificant	
					А	Very Likely	High	High	Hiah	Medium	Medium	
JOB NO:	SN10	5			в	Likely	High	High	Medium	Medium	Medium	
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ASSESSED BY:	Daniel	I Spirit J	ones, Mick	Parker, Matt O'Grady, Tim Redmond, Chris Histon	D	Remotely Possible	Medium	Medium	Medium	Low	Low	
	13 - 1	0 - 2022			Е	Very Unlikely	Medium	Medium	Low	Low	Low	
ASSESSMENT DATE:	WAY	0 - 2022			NA	Not applicable	NA	NA	NA	NA	NA	
	RIS	K ASSE	SSMENT	CONTROLS (to be established in the following order of	priorit	y 1st=High Level Risks	s; 2nd = Mediu	ım Level Risk	s; 3rd = Low	Level Risks)		
HAZARD (Include additional project specific hazards as required)	L	с	Class	Legislation, Standards & Codes of Practice			Enter Details	of Specific C	ontrols Requ	ired		
Ground Collense/noor ground				-								
	-		1		1							
Plant roll over from sinking in unstable ground conditions	с	3	Medium Jindabyne Education Campus WHS Plan Subcontractors value a plant risk assessment prior to operating plant. Plant will be bladed back to ground o conditions. If the ground is too soft or uneven then the ground will be bladed back to ground prior to plant operating on it. All subcontractors must obtain a HY plant setup permit prior to operating plant with outriggers. Concrete boom pumps and mobile cranes must obtain a HY plant setup permit prior to operating plant the ground is table ground is table to be inspected by the Site Manager and HSR following heavy rain prior to work commencing th 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 prestart to be conducted after each inclement weather event							
Pedestrian slip and trip hazards from muddy/ uneven ground	Е	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 ruls and muddy ground to minimise slip and trip hazards for workers in the area area individuely and the product of the second se							
Trucks and vehicles tracking mud and dirt onto road from muddy tyres	Е	3	Low	Jindabyne Education Campus WHS Plan Jindabyne Education Campus Environmental Management Plan	Shake	r grid installed at site en	trance. High pr	essure water	blaster to be u	sed to wash tyr	es if required	
Pedestrians/ workers tripping over in deep wheel ruts left by plant movements	Е	3	Low	Jindabyne Education Campus WHS Plan	Whee	I ruts are to be bladed/ le	evelled out to m	iinimise trip ha	zards around :	site		
Hazardous Chemicals			I									
Spillage of fuels and chemicals	с	3	Medium	AS 1940: The storage and handling of flammable and combustible liquids Jindabyne Education Campus Environmental Management Plan	A spill set up 'Dange	kit is kept in the site offi a hazardous substance er Fuel Storage area' etc	ce. Any drums storage are ne	of fuel larger text to their site	han 20 litres n containers wit	nust be bunded h signage erec	. All trades are to ed 'no smoking',	
Unsafe storage of oxy acetylene equipment	с	3	Medium	AS 4332 The storage and handling of gases in cylinders Jindabyne Education Campus Environmental Management Plan	Oxyge and ap	n and acetylene bottles ppropriate warning signa	are to be store ge erected.	d in separate v	entilated cage	s 3m apart at tl	e end of each day	
Mix matched storage of hazardous substances could cause a chemical reaction	с	3	Medium	NWHSC 2017 - 2001 Storage & Handling of Dangerous Goods	Only s	ubstances of the same	class can be st	tored together	as per the Saf	ety Data sheet	for the products	
		1		AS 3780: The storage & handling of corrosive substances	1							
	_			NWHSC 2011: Preparation of Material Safety Data Sheets								
				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 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 ci to wea	ream is available in the s ir long sleeve pants and	ite office. Sing shirts.	lets are banne	d. Workers are	e encouraged a	the site induction	
Hot temperatures may cause persons to become dehydrated resulting in illness, headaches, fainting etc	Е	4	Low	NSW Hot & Cold Environments 2001	Air co	nditioned lunch sheds. S	ubcontractors	to work in sha	ded area wher	ever possible.		
				NSW Code Of Practice: Managing the work Environment and Facilities								
				Jindabyne Education Campus WHS Plan								
Heavy lifting (over normal crane operation)												

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RELEVANT PROCEDURE:	Projec	t HSE F	Risk Assess	sment	-				Conseque	nce			
		-			RISK	ASSESSMENT TABLE	1	2	3	4	5		
PROJECT:	Jindab	yne Edi	ucation Can	npus		Likelihood	Significant	Major	Moderate	Minor	Insignificant		
JOB NO:	SN105	5			A	Very Likely	High High	High High	High Medium	Medium Medium	Medium Medium		
					C	Possible	High	Medium	Medium	Medium	LOW		
ASSESSED BY:	Daniel	Spirit J	ones, Mick	Parker, Matt O'Grady, Tim Redmond, Chris Histon	D	Remotely Possible	Medium	Medium	Medium	Low	Low		
	12 1/	0 0000			F	Very Unlikely	Medium	Medium	Low	Low	Low		
ASSESSMENT DATE:	WAY	J = 2022											
	RISI	K ASSE	SSMENT	CONTROLS (to be established in the following order of	priorit	ty 1st=High Level Risks	s; 2nd = Mediu	m Level Risk	s; 3rd = Low	Level Risks)			
HAZARD (Include additional project specific hazards as required)	L	с	Class	Legislation, Standards & Codes of Practice			Enter Details	of Specific C	ontrols Requi	red			
Manual handling injuries	Е	4	Low WHS Regulation 2011 Part 4.2 Hazardous Manual Tasks Team lifts for heavy items. Subcontractors SWMS must list manual handling as a hazard and control in place. Mechanical lifts wherever possible										
Back injuries	Е	3	Low	Jindabyne Education Campus WHS Plan	Bend	knees, keep a straight b	ack, don't twist						
Block and tackle use	NA	4	4 NOCP for Manual Tasks 2007 National Standard for Manual Tasks - 2007 NCCP for the Prevention of Musculoskeletal Disorders Caused From Performing Manual Tasks										
				NSW Manual Handling Resource 2004									
	I	I		Code of Practice: Hazardous Manual Tasks	I								
Hot Works													
Sparks from welding, grinding or using oxy acetylene may cause a fire if flammable materials are in the area	с	4	Medium	AS 1674: Safety in welding and allied processes	A hot area p	works permit must be of prior to hot works occurri	otained by the s ng	subcontractor	All sources of	ignition to be r	emoved from the		
Fire and injury to others from persons using angle grinders	А	4	Medium	Jindabyne Education Campus hot works permit	Condi flying	uct all grinding away fron sparks	n flammable ma	aterials and oth	er workers I th	ne area. Be wa	e of direction of		
Welders flash to other trades	в	4	Medium	Jindabyne Education Campus WHS Plan	Weldi are wi	ing screens and warning ithin a 10m radius of the	signage must l work area	be erected to p	protect other tra	ades from weld	ers flash if others		
				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 clea kept c	aner has been engaged b clean and rubbish bins er	y Hansen Yun nptied daily	cken to clean a	amenities on a	weekly basis.	All amenities to be		
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 S who d	Shutdowns for clean up c do not keep the site neat	rews to be impl and tidy	lemented. Imp	rovement notic	es to be issue	to subcontractors		
Inadequate facilities for general site rubbish	D	4	Low	Jindabyne Education Campus WHS Plan	Skip b	bins to be placed on site	at various locat	ions and chan	ged over regul	arly			
Lifting Over Public/outside site													
Injury to pedestrians/ public	NA         4         NA         Jindabyne Education Campus WHS Plan         No lifting of building materials outside of the construction fence unless traffic control and diversity           NA         4         NA         Jindabyne Education Campus WHS Plan         place and the subcontractor has seeked approval from the HY Site Manager. Public access way           Jindabyne Education Campus Traffic Management Plan         clear of all construction debris. Fences to be kept in salisfactory manner.								diversions are in ess ways to be				
Manual Handling													
Back injuries/sprains and strains	С	3	Medium	HY Glove and clip policy	Team to be	lifts for heavy items. Me dropped off as close to the	chanical aids e he work area as	g. telehandler s possible to m	to be used whe	erever possible ng distance.	. Building material		
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												
	<u> </u>	<u> </u>		NSW Code Of Practice: Hazardous Manual Tasks	<u> </u>								
	ASNZS 2161 Occupational protective gloves Undatavne Erfutación Caranus WHS Plan												

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RELEVANT PROCEDURE:	Projec	t HSE	Risk Assess	ment					Consequer	100		
DPO IECT.	lindal	whe Ec	lucation Car		RISK	CASSESSMENT TABLE	1	2	3	4	5	
	Unida	5,110 20				Likelihood	Significant	Major	Moderate	Minor	Insignificant	
JOB NO:	SN10	5			B	Very Likely Likely	High High	High High	High Medium	Medium	Medium	
ASSESSED BY:	Danie	l Spirit .	Jones, Mick	Parker, Matt O'Grady, Tim Redmond, Chris Histon	C	Possible Remotely Possible	High Medium	Medium Medium	Medium Medium	Medium Low	Low	
ASSESSMENT DATE:	13 - 1 WAY	0 - 202	2 (FOR INF	DRMATION ONLY) - PLEASE REFER ALSO TO HY RISK IDENTIFIER ON HY-	E	Very Unlikely	Medium	Medium	Low	Low	Low	
	RIS	K ASSI	ESSMENT	CONTROLS (to be established in the following order of	priori	ity 1st=High Level Risks	s; 2nd = Media	um Level Risk	s; 3rd = Low I	Level Risks)	L	
HAZARD (Include additional project specific hazards as required)	L	С	Class	Legislation, Standards & Codes of Practice			Enter Details	of Specific C	ontrols Requi	red		
Mobile Plant	L	1		L								
Mobile plant could strike a pedestrian worker on site	с	1	High	NWHSC 1010: National Standard for Plant	All tra work any p withir	ades are warned of movir ers on site must keep we olant. Only workers involv n the work area of plant n	g plant at the s Il clear of plant ed with the tas nust be visible	site induction. I on site and ga k are to be witl to the operator	High vis vests a in the operator n in the work a at all times.	are to be worn s attention prio reas of plant. F	at all times. All r to approaching People working	
Mobile plant could crash into a structure or open trench	D	3	Medium	Jindabyne Education Campus WHS Plan	Train issue	ed, experienced, qualified ed to HY for any plant whi	l workers to op ch does not re	erate plant onl quire a legislate	/. Plant operate ed ticket.	or competency	statement to be	
Pedestrians/ workers being struck by mobile plant	с	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 area, erect signage, use a spotter etc. Bunted off pedestrian pathways have been erected on site to kn pedestrians clear of areas where there are high movements of vehicles/trucks and plant. All subcontra using moving plant must have a SWMS which details how to protect other workers in the area from be struck by the plant. All plant must have a fashing light, hom and reversing beepr(quacker. Vehicles/trucks must turn their flashing lights on. There is a 10km/t speed limit on site. All workers have been told at 1 site induction to be aware of moving plant on site and keep clear whenever possible. Only workers when workers through pre-start meetings on how to approach moving plant and equipment. Access routes 1 plant and vehicles are to be maintained. Pedestrians are to walk along the side of access routes when possible. Plant operators are to keep reversing to a minimum. Pedestrians that need to approach moving plant and equipment. Access routes sho conacit and eye contact with the operator. No person to sogmorach the machine until the operator. No plant are to do so from the front of the machine and are to gain the operators attention by making veth conacit and eye contact with the operator. No person is to approach the machine until the operator. No stopped moving the machine and signalled that it is afle to approach. Spotters working with machines 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 perm from Hansen Yuncken prior to setting up any plant with outriggers eg. concrete boom pumps, cranes, frannas 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 tim of a s	iber bump stop must be i slab	nstalled to the	edge of the sla	b whenever EV	VP's are used	close to the edge	
Crushing Injury from scissor or boom lift	NA	1	High	Model Code of Practice - Managing the Risks of Plant in the Workplace	Provi Pre s Only No P 2 per All Per EWP Prior All fa Perso	ide onsite training, Instru- tats and Toolbox taiks to person's with EWP ticke reson to work isolated or son team as a minimum ersonnet to be trained by "s are the same. to use, completion of a la uits are to be immediately onnel using EWP must b on operating scissor lift m	tion and super be done as ci to operate Sc alone on an El , whilst using a a qualified per gbook check i r reported to su e aware of the ust be able to	vision onsultation with issor Lift WP EWP, 1 perso son from the h s to be done upervisor and n emergency res communicate of	person's affect on to spot and a ire company or nachine is to b ponse protoco clearly to spotte	cted by the cor also assist with n the specific E e tagged out I of that specifi ar/work partner	trols outlined. 1 task WP, as not all c EWP (team)	
Needle stick Injury												
Injured person could contract a disease	Е	2	Medium	NSW Code Of Practice: HIV and other blood-born pathogens in the workplace	Work	kers injured by needle stic	k to be sent to	the nearest m	edical centre/h	ospital		
Workers unaware of what to if a needle is found	Е	4	Low	Jindabyne Education Campus WHS Plan	Work HY s	kers to be told at site indu taff immediately	ction that if the	ey find a needle	on site they a	re not to touch	it and report it to	
Inadequate disposal facilities for needles found on site	Е	4	Low	NSW: Code Of Practice: Work Place Amenities	Shar	ps clean up kit to be kept	in site office a	t all times				
Noise	1	1			Heari	ing protection to be worn	when using po	wer tools or lo	ud equipment	Signage to be	erected to warn	
Hearing damage from general construction noise eg. power tool usage, jack hammering etc.	в	3	Medium	AS/ANZ 1269: Occupational Noise Management	other trades of excessive noise. A noise monitor is available dispersion of the other states of excessive noise. A noise monitor is available for use on site safety walks Notice of disrution to be issued to client if required. Work to be conducted within anorower beyrs of SSN-							
Disruption to client and neighbours	D	5	Low	NWHSC 2009 - 2004 Noise Mgt & Protection of Hearing at Work	15788005 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	15							
				NSW Noise Management & Protection of Hearing at Work 1996								
	1			AS 2436: Guide to noise control on construction, maintenance & demolition sites								
			<u> </u>	Machinery & Agricultural Tractors								
				undabyne Education Campus WHS Plan AS/NZS 1270: Acoustics - hearing protectors	<u></u>							
Overhead Power lines												
Power lines over main entry to site	NA	4	NA	Jindabyne Education Campus WHS Plan	All pla	ant and workers must ke	ep clear of ove	rhead power lir	ies as per Cod	e Of Practice:	Work near	
	1	1	+	NSW Code of Practice: Work near overhead power lines 2006	overf	iona house iujes						

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RELEVANT PROCEDURE:	Projec	t HSE F	Risk Assess	ment	1				Consequer	1C0		
					RISK	ASSESSMENT TABLE	1	2	3	4	5	
PROJECT:	JINGAD	byne Edi	cation Can	ipus		Likelihood	Significant	Major	Moderate	Minor	Insignificant	
JOB NO:	SN105	5			A B	Very Likely Likely	High High	High High	High Medium	Medium Medium	Medium Medium	
ASSESSED BY:	Daniel	Spirit J	ones, Mick I	Parker, Matt O'Grady, Tim Redmond, Chris Histon	C D	Possible Remotely Possible	High Medium	Medium Medium	Medium Medium	Medium Low	Low Low	
ASSESSMENT DATE:	13 - 10 WAY	0 - 2022	(FOR INFO	ORMATION ONLY) - PLEASE REFER ALSO TO HY RISK IDENTIFIER ON HY-	E NA	Very Unlikely Not applicable	Medium NA	Medium NA	Low NA	Low NA	Low	
	RISI	K ASSE	SSMENT	CONTROLS (to be established in the following order of	priori	ty 1st=High Level Risks	; 2nd = Mediu	m Level Risk	s; 3rd = Low I	Level Risks)		
HAZARD (Include additional project specific hazards as required)	L	с	Class	Legislation, Standards & Codes of Practice			Enter Details	of Specific C	ontrols Requi	red		
Plant & Equipment	·											
Plant failure may cause serious injury to workers	D	3	Medium	NWHSC 1010: National Standard for Plant	HY p evide opera super	lant verification reports to nce machine is safe for o ators must conduct pre-st rvisors	be completed peration. Plant art safety inspe	for all plant. N risk assessm ections of thei	laintenance rec ents to be cono r machine daily	ords to be sub ducted for all hi and report faul	nitted to HY as gh risk work. Plant ts to their	
Poorly maintained ladders and scaffolding failing/ collapsing	D	3	Medium	AS/NZS 1892: Portable Ladders	No tir All we be tie adver	mber ladder on HY sites. orkers are aware of the H ed off at the top landing. S rse weather	Ladders must I Y ladder policy caffolding to b	be in good cor posted on the e visually cheo	ndition. Electrici wall in the lun ked daily and f	ans must use t ch shed. Exten ull inspection n	ibre glass ladders. sion ladders must ionthly or after	
Use of damaged ladders	D	3	Medium	AS 4576: Guidelines for scaffolding	Ladd	ers to be checked for dan	nage weekly or	the site safe	ty walk ecked daily pric	r to use for da	nage Damaged	
Lifting gear failure	D	1	Medium	AS/NZS 4994: Temporary edge protection	lifting	gear is to be withdrawn f	rom service.	be visually cri	ecked daily pric		nage. Dainaged	
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 w also be inspected on weekly safety walks. Mobile scaffolds to be built as per manufacturers instructions. Scaffold where a person can fail more than 4 must be erected by a licenced scaffolder. No person is to alter the scaffold what so ever. Any issues with scaffold is to be reported to the Site Manager immediately						caffold to be vided. Scaffold will rrs instructions. No person is to ager immediately.	
Multiple mobile plant interaction/ contact	D	1	Medium	Jindabyne Education Campus WHS Plan	Plant	operators must commun	icate by way of	2 way radios	, eye contact ar	nd spotters		
Vehicle and plant exhaust fumes	D	4	Low	HY ladder policy	Use ( ventil	of electric scissor lifts insi ated areas	de buildings or	ly. All other d	iesel powered n	nachines are u	sed in open well	
Post Tensioning												
Accidental drilling or cutting into PT cable	NA	2	NA		All su applie	bcontractors to obtain pe cable. Drones to be used	rmit to cut con to photograph	crete/ core. TI PT decks just	his permit will d prior to concre	etail location of te pour.	PT cables if	
Plant & Equipment Washout												
Water from cleaning plant and equipment creating a muddy/ slippery surface	D	4	Low	Environmental Protection Act 1994	W asl water	hout area to be determine to flow over pedestrian fo	d on a daily ba oot paths	sis as the site	changes. The	wash out area	must not allow	
Muddy and contaminated water entering stormwater system	D	4	Low	HY environmental management plan	Sedir	nent control to be placed	around the was	shout area				
Pressurised Gas Mains												
Excavator buckets striking UNDERGROUND GAS LINES	D	1	Medium	NSW Code Of Practice: Excavation Work 2000	A per Pot h diggii subc	mit to dig system is in pla oling must occur when w ng in the vicinity of gas lin ontractor SWMS involving	ace on this site. orking around ( es. Striking ex g excavation w	. All known ex existing servic isting undergr orks	isting services es. Only toothle round services	to be marked u ess buckets are has been listed	p on the site plans. to be used when as a hazard on all	
				Jindabyne Education Campus WHS Plan								
				assets								
Scaffold												
Fall from heights over 2m	NA	1	NA	WHS Regulation 2011: Part 3.1 Managing risks to health and safety								
Insufficient safe means of access onto Ground Floor Slab from Basement Slab leve	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									
Scattold sinking into soft ground compromising structural integrity	NA	3	NA		I							
Mud. dirt and sertiment nolluting stormwater eveteme	6	A	Medium	Environmental Protection Act 1994	HY S	ediment Frosion Control	Plan					
Mud, dirt and sediment polluting stormwater systems	c	4	Medium	Jindabyne Education Campus Environmental Management Plan	Sit barriers to be installed around low areas of site to catch all rain fall. All stormwater pits to be covered sit control. All vehicles tyres must be washed clean of mud prior to leaving site. Sit 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						s to be covered in s to be placed in e Site HSE	

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INNOLN IONONLIN	PKISK P	Assessi	nent proced	(if applicable) are all	ilso to b	e considered.	xi monin. Hazi	ards with resid	uai risk from u	ie Design wina	5 RISK ASSESSMENT	
RELEVANT PROCEDURE:	Projec	t HSE	Risk Assess	iment	DIOK				Conseque	nce		
					RISK	ASSESSMENT TABLE	1	2	3	4	5	
PROJECT:	Jindab	lyne Ed	Lication Can	ipus		Likelihood	Significant	Major	Moderate	Minor	Insignificant	
	SN110	_			Α	Very Likely	High	High	High	Medium	Medium	
	ONTO				в	Likely	High	High	Medium	Medium	Medium	
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	RIS	K ASSE	SSMENT	CONTROLS (to be established in the following order of	nriorit	Not applicable	NA	NA Im Level Risk	NA s: 3rd = Low I	NA evel Risks)	NA	
HATARD (Include additional project encode becardo os required)			Class		pinoria	y for high 2010 Hone	Enter Details	of Specific C	ontrole Pequi	red		
	L-	<u> </u>	CidSS	Legislation, Standards & Codes of Fractice			Litter Details	or opecific o	ontrois requi	160		
Site Lighting					1							
Sun glare restricting plant operators visibility	С	4	Medium	WHS Regulation 2011	Sungla	asses to be worn by plar of the day to stop the su	nt operators as n becoming an	required. Cert issue.	ain tasks may	also be conduc	cted at different	
Lighting (Poor)	NA	5	NA	NSW Code Of Practice: Managing the work Environment and Facilities	Ensur	e that task area has ade	quate natural li	ight and if natu	ral light is not a	adequate provi	de artificial lighting	
Slips/Trips	-	-										
Workers slipping or tripping on rough/ uneven/ muddy/ slippery ground	с	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 altimes. Gravel/ crusher dust to be placed on slipperyl muddy surfaces. Blading back of ruts and mudd ground conditions to be conducted as required. Bunted off pedestrian pathways are installed around ma access routes throughout site for safe pedestrian access, this way people can use the pathway then brr out to their specific work area with minimal risk of slipping over in muddy conditions. During colder weat access routes are to be checked for potential som/frazen pathways. These are to be reviewed by SM ar 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	Masor	nry walls must be adequa	ately braced wi	ith timbers eve	ry 2m until cor	e filled		
Formwork collapse	NA	1	NA	AS 3850: Tilt Up Concrete Construction	Engine	eers sign off required to	pouring of any	concrete			a ala	
Structural steel collapse	NA	1	NA	AS 4991: Lifting devices	Struct Hanse	ural steel must be signer ural steel must be erecte en Yuncken. Hansen Yur	ed by qualified ncken to comp	dogmen and ri lete QC Comp	ggers. Subcon liance audit rep	tractor must su port: Structural	ubmit ITP's to Steel checklist	
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 Sa	afety Data She	et and SWMS				
Temperature Extremes												
Dehydration	E	3	Low		Worke	ers are encouraged to dr	ink plenty of w	ater. Water bu	bbler available	at site lunch sl	heds	
Sunburn	с	3	Medium		Worke	ers must wear are shirt o	on site. Singlets	s are not allowe	ed. Sun cream	is available to	everyone and is	
Heat stress	Е	3	Low		Worke	ers are encouraged to wo	ork in the shad	e wherever po	ssible and take	e regular breaks	s whenever	
Tilt –up or Precast Concrete Work				L								
Structural steel support collapse	А	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	в	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 bunting, flagging or rod/white target. Spotters must be used to							
Plant failure	в	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 maintained and kept up to date							
Failure of lifting points on precast panels	С	1	High	AS 2550: Cranes, hoists & winches - Safe Use	Subco lifting	ontractor ITP's must be s points used to install pre	submitted and r cast. Lifting ge	reviewed by H' ar register in p	r prior to erect	ion of precast p	oanels, engineered	
Concrete may not have cured to specified strength	С	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	В	1	High	AS 1418.1: Cranes, hoists and winches – General Requirements	Plant setup permit must be obtained by subcontractor prior to standing crane							
Lifting gear failure	A	3	High	National Code of Practice for Precast, Tilt Up and Concrete Elements in Building Construction 2008	Rigger	rs must inspect all lifting ars and certificates must	gear prior to u be issued to F	se. Damaged I	ifting equipme	nt must not be	used. Lifting gear	
Poor communication between crane operator and dogmen	с	3	Medium		Dogman and crane operator to constantly communicate with each other. Crane operator to take directions from dogman only.							

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ASSESSMENT DATE:	13 - 10 WAY	0 - 2022	(FOR INF	RMATION ONLY) - PLEASE REFER ALSO TO HY RISK IDENTIFIER ON HY-	N HY-         E         Very Unlikely         Medium         Medium         Low         Low         Low           NA         Not applicable         NA         NA         NA         NA						
	RISI	K ASSE	SSMENT	CONTROLS (to be established in the following order of	priorit	y 1st=High Level Risks	; 2nd = Mediu	ım Level Risk	s; 3rd = Low I	Level Risks)	
HAZARD (Include additional project specific hazards as required)	L.	С	Class	Legislation, Standards & Codes of Practice			Enter Details	of Specific C	ontrols Requi	red	
Traffic Management											
Vehicles/ trucks speeding on site	в	3	Medium	AS 1742.3-2009: Manual of uniform traffic control devices - Traffic control for works on roads	10km/ induct	/h speed limits signs are tions for all drivers entering	erected aroun ng site. Hazaro	d site. Drivers I or flashing lig	must give way hts must be tu	to pedestrians rned on	. Delivery driver
Vehicles parking and blocking access roads	в	4	Medium		Vehicl purpos	les to be used for loading ses. All these controls ne	/unloading pur ed to be ident	poses only and ified on site lay	d are to be parl out plan and c	ked off site if no ommunicated t	ot required for work o all workers at site
Rind spots creating collisions between vehicles	E	3	Low		Warni	ing signs to be erected at	blind spots. A	All these contro	Is need to be id	dentified on site	ayout plan and
		-	LOW		comm A fenc	ed off pathway with sign	t site induction age has been	i. installed along	the driveway f	rom the street	to the site office to
Pedestrians entering site being struck by trucks and vehicles	A	2	High		keep a theoug	all pedestrians off the roa gh entry/ exit by way of c	d used by plar oncrete jersy l	nt and trucks. H kerbs	Pedestrians an	d vehicles have	e been seperated
Tree lopping									101 1 15		
Tree lopping	NA	4	Medium		Area to be delimeated and HRCW for falling from neights and Plant and Equipment						
	-		Mantinum	NCIW Code of Developer Combel Of Washington Librardova Substances	Plant to be operated in open areas with good ventilation only. Electric scissor lifts to be used inside building						
Workers overcome by exhaust turnes from plant	E	1	Medium	NSW Code of Practice: Control Of Workplace Hazardous Substances	only. No petrol/ diesel powered equipment used inside buildings						
Ventilation (poor)			1								
Workers overcome by furnes when using chemicals	Е	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 t	olerance for fighting on s	ite - instant dis	smissal			
Waste Management/ Littering											
Inadequate bins on site to dispose of rubbish	Е	3	Low	WHS Act/ Regulation 2011	Skip b be pla	oins to be placed at variou ced at the front of all lung	us locations ar	ound site whicl	h are easy to a	ccess. Bins for	food scraps are to
Bins attracting rodents	D	4	Low		Food s	scrap bins to be bagged	and changed r	egularly			
Having to walk long distances to dispose or rubbish Workers littering the site with rubbish and off cuts instead of disposing of rubbish in	D	4	Low		Nume	rous skip bins to be on s	te close to all	work areas	actors who leav	e the site untir	h
bins provided Water Contaminants	-										.,
Clean water around site becoming contaminated with mud	E	4	Low		Clean	rain water is diverted arc	ound site by wa	ay of swales ar	nd sediment co	ntrol	
Working at Height above 2m	r	1			"Dana	er workers shove" signs	ne to be erecte	ad If there are	other trades in	the immediate	area then
Workers dropping tools and material onto persons below	С	1	High	NSW Code of practice: Safe work on roofs part 1	red/wh	hite tape will be erected to	o create an ex	clusion zone.			
Scaffolders falling from heights during erection process	В	1	High	WHS Regulation 2011 Part 4.4 Falls	Install the ap	handrail, mid-rails and to proved control methods	e-boards whe such as the 1r	re scattolders an rule or Advar	are working fro nced guardrail	m deck below systems	while building using
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 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 license scaffolds from which a person can fall more than 4 metres must be constructed and certified by a license scaffold incomplete a theight & isolate area below where there is risk of falling objects causing injury to persons below. No scaffold attrations are to be undertaken except by licensed scaffolder. Cice off access to incomplete scaffolds, for example, install tube barricades and warning signs "Scaffold incompilete" Ensure all scaffold is checked and secure before issuing handover docket and attaching Scafftag.						act areas iced or stabilised to ger or transom iffied by a licensed ing injury to g signs "Scaffold 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	Perimeter scaffolds to be inspected weekly using the site HSE inspection report. All workers are advised at advised using this to all the any scaffolding.						
Fall from ladder	C	3	Medium	AS/NZS 4488 Industrial rope access systems - Selection, use & maintenance	site induction strictly not to alter any scaffolding Ladders must be used in accordance with HY ladder policy. An Aconex has been issued on ladder use to al subcontractors. EWP's, mobile scaffold and platform ladders take first preference over standard A frame						
	_			AS/NZS 1891 Industrial fall arrest systems & devices	ladders. WP lickst required to operate boom lift >11m. EWPAA yellow car required for EWP <11m. Ground continuous to be checked prior to operation. Harpence and immunit equired for EWP <11m. Ground						
I+all from EWP/ boom lift	В	1	High	AS/NZS 4994 Temporary edge protection	conditions to be checked prior to operation. Harnesses and lanyards must be maintained and kept in good condition Timber or angle to be installed to the edge of concrete slabs to stop scissor lifts accidently being driven off						
Fall from scissor lift	в	1	High	NWHSC - Prevention of Falls in General Construction 2008	edge of slab. Scissor lift operators must have a EWPAA yellow card or WP type ticket. Statilizers and old plates must be used for rough terrain scissors used on soft ground installence and the advance of the statilizers and soft ground						
Inadequately installed roof perimeter handrail	в	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 manufacturers specifications.						

<b>HANSENYUNCKEN</b>	This Risk A	Project	HSE Risk nent proced	PROJECT HSE RI Assessment is to beused as aguide when completing the monthly Project High Ri ure and should be conducted at the time of Construction programme statusing to c (if applicable) are al	SK sk Iden issess so to b	ASSESSMI tification assessment on hazards and risks for nea e considered.	ENT HYWAY Site I xt month. Haza	Management E Irds with reside	)ashboard in a ual risk from th	ccordance with le Design WHS	the Project HSE Risk Assessment	
RELEVANT PROCEDURE:	Project	HSE F	lisk Assess	ment					Consequer	100		
PROJECT:	Jindab	yne Edi	ication Can	npus	RISK	ASSESSMENT TABLE	1 Significant	2 Major	3 Moderate	4 Minor	5 Insignificant	
JOB NO:	SN105				A B	Very Likely Likely	High High	High High	High Medium	Medium Medium	Medium Medium	
ASSESSED BY:	Daniel	Spirit J	C     Possible     High     Medium     Medium     Medium     Medium       D     Remotely Possible     Medium     Medium     Medium     Low									
ASSESSMENT DATE:	13 - 10 WAY	) - 2022	(FOR INF	DRMATION ONLY) - PLEASE REFER ALSO TO HY RISK IDENTIFIER ON HY-	E NA	Very Unlikely Not applicable	Medium NA	Medium NA	Low NA	Low NA	Low NA	
	RISP	ASSE	SSMENT	CONTROLS (to be established in the following order of	ROLS (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	с	Class	Legislation, Standards & Codes of Practice	Enter Details of Specific Controls Required							
Potential Emergencies - preparation for and response to potential emergency	events	asses	sed high o	medium risk to be defined in the Emergency Response Plan	Emergency Response Plan							
Arrested fall in a harness	в	2	High	HY Procedure for Emergency Response	All subcontractors using harnesses in boom lifts must have a rescue procedure as part of their SWMS. 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 suscended casualty.							
Bomb threat	E	4	Low	HY Procedure for Emergency Response	Proce	dure for bomb threats is	part of the HY	Emergency Re	esponse Plan			
Confined Space Rescue	E	3	Low	HY Procedure for Emergency Response	Proce	dure for confined space r	rescue is part o	of the HY Eme	rgency Respor	nse Plan		
Cyclone	NA			HY Procedure for Emergency Response	N/A or	n the Jindabyne Educatio	on Campus Pro	ject				
Drowning	E	5	Low	HY Procedure for Emergency Response	Trenc	hes are to be de-watered	prior to any pe	erson working	in around the a	area.		
Electric shock	D	1	Medium	HY Procedure for Defibrillators	Electr	c shock procedure detail	led in the HY E	mergency res	ponse 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 ASIN2S 1221 Fire hose reels ASIN2S 1321 Portable fire extinguishers ASIN2S 1350 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	<sup>2</sup> Fire procedure detailed in the HY emergency response plan t							
First Aid (inadequate resources)	Е	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	Jemena contact details are part of the HY Emergency response plan							
Major rock fall/landslip	E	4	Low	HY Procedure for Emergency Response	Rockfall procedure detailed in the HY Emergency response plan							
Major Fuel/Chemical Spill	E	3	Low	HY Procedure for Emergency Response	Fuel/ Chemical spill is part of the HY emergency response plan							
Medical Emergency	D	3	Medium	HY Procedure for Emergency Response	Medic	al emergency is part of th	ne HY emerger	ncy response p	bian			
Overnead 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							
n revasi narre vurapse Structural failure/collanse	NA NA	1	NA NA	HV Procedure for Emergency Response	Struct	si pariel collapse is part of the	A UNE FIT EMER	gency response	an hidi i			
Trench collanse	D	1	Medium	HY Procedure for Emergency Response	Trepo	h collapse is part of the F	Y emergency	response plan	CII I			
Other: Fatigue Management for both HY and Site based workers	В	1 modulum nr proceedure internet de trietgenzy response     1 modulum nr proceedure internet trietgenzy response particular internet triteret trietgenzy response particular internet trietgenzy response										



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
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# **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

This document has been prepared by arc traffic + traffic for the use of the stated Client only, and addresses the project specifically detailed in this document, and as such should not be considered in regard to any other project. This document has been prepared based on the Client's description of its requirements, information provided by the Client and other third parties. arc traffic + transport does not accept any responsibility for the use of or reference to this document other than intended by the stated Client.



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# 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**).

# 1.2 CTPMSP Author

This CTMPSP 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 foreach 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 CMPMSP, and the section of this CTPMSP where each is addressed.



Table 1: SSD	Approval	Conditions
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Condition	Condition Requirement	Document Reference
	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:	
	(a) be prepared by a suitably qualified and experienced person(s);	Appendix A
	(b) be prepared in consultation with Council and TfNSW;	Section 1.6 Appendix B
	I detail:	
<b>B16</b>	(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;	Section 4 Appendix E
вю	(ii) measures to ensure the safety of vehicles and pedestrians accessing adjoining properties where shared vehicle and pedestrian access occurs;	Section 4.3.2
	(iii) heavy vehicle routes, access and parking arrangements;	Section 3.2 Section 3.3 Section 3.6
	(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	Section 3.2
	(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).	Section 3.2
	A Driver Code of Conduct must be prepared and communicated by the Applicant to heavy vehicle drivers and must address the following:	Section 4.4.5 Appendix E
	(a) minimise the impacts of earthworks and construction on the local and regional road network;	Section 3.2 Section 3.3 Appendix E
B22	(b) minimise conflicts with other road users;	Appendix E
	(c) minimise road traffic noise; and	Section 3.2 Section 3.3.3 Appendix E
	(d) ensure truck drivers use specified routes	Section 3.2 Section 3.3.3 Appendix E
B23	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.	Section 3.6

# 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:

- Further to arc traffic + transport proving these officers with information about the project and the proposed scope of work in the CTPMSP, no additional comments (for addition tasks) were provided.
- Council does not currently have a traffic officer (or the like) able to provide commentary on the CTPMSP; based on the email received from Mr Duncan McRae, Community & Safety Partner at TfNSW (dated 14 October 2022) TfNSW will advise the incoming Council traffic officer in any future consultation/assessment through the construction period.

arc traffic + transport also had the opportunity to discuss this 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).

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.



# 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







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: djrd 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: Campus TA

## 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.

Intersection	Approach	Degree of Saturation		Average Delay (s)		Level of Service		Queue (m)	
		АМ	РМ	AM	РМ	АМ	РМ	АМ	РМ
	S	0.336	0.405	4.1	4.3	LOS A	LOS A	18.1	24.2
Northern	E	0.285	0.377	0.9	2.7	LOS A	LOS A	13.7	18.8
Roundabout	Ν	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
	s	0.513	0.564	14.1	13.3	LOS B	LOS B	34.8	41.4
Southern	E	0.377	0.515	2.4	5.6	LOS A	LOS A	21.2	34.3
Roundabout	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

#### Table 3: 2023 Intersection Operations

Source: Campus TA

#### Table 4: 2033 Intersection Operations

Intersection	Approach	Degree of Saturation		Average Delay (s)		Level of Service		Queue (m)	
		AM	РМ	AM	РМ	AM	РМ	АМ	PM
	S	0.353	0.431	4.2	4.4	LOS A	LOS A	19.4	26.7
Northern	E	0.290	0.390	1.0	3.0	LOS A	LOS A	14.0	19.5
Roundabout	Ν	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
	S	0.530	0.582	13.8	12.9	LOS B	LOS B	36.9	43.7
Southern	E	0.383	0.515	2.6	5.6	LOS A	LOS A	21.5	34.2
Roundabout	Ν	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.

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 - 5/4/22	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

## Table 5: Construction Schedule Characteristics

## 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 house 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.







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 & Recreational Road has inherently been approved to accommodate the swept path of trucks travelling to and from the TAFE site, which will essentially 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 (**MRV**s), Heavy Rigid Vehicles (**HRV**s) and Articulated Vehicles (**AV**s).



At this time, there is no anticipation that AVs accessing the Site would be anything other than General Access Vehicles (**GAV**s), which are able to use the entire public road network. Notwithstanding, if Restricted Access Vehicles (**RAV**s) 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.





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.







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.

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

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

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.

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

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

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.

## 4.2 Traffic and Pedestrian Managment

#### 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 heighted 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 9 below, and the detailed TGS for the Recreation Road access driveway is provided as Appendix D.







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; 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:	31st December 1970
Nationality:	Australian
Address:	19 Canoon Road, Turramurra NSW 2074 Australia
Mobile:	+61 2 427 995 160
Email:	antonreisch@optusnet.com.au

#### Education

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



YEARS OF EXPERIENCE 10 years

#### QUALIFICATIONS & AFFILIATIONS

Master of Engineering (MEng) Chartered Engineer (CPEng) 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

# **BEN MIDGLEY**

PRINCIPAL TRAFFIC ENGINEER



#### 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 (CPEng) 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



ed 12/10/2022 3-20 Ph

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

Jindabyne Education Campus Construction Traffic Management Plan



Anton Reisch <antonreisch@optusnet.com.au> lorner@rms.nsw.gov.au

#### 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

. The Scope of Work to be assessed as part of the CTPMSP in accordance with the SSD Consent and Transport for NSW (TTNSW), Austroads and Australian Standards quidelines;

- The proposed co ction schedule, including a breakdown of key stages of the cons ruction period and the associated transport demands of each of those stage
- · 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;
- Miligation 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 TRNSW 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.



anton reisch. director

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

#### RE: Jindabyne Education Campus CTMP



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:

- The Scope of Work to be assessed as part of the CTPMSP in accordance with the SSD Consent and Transport for NSW (TTNSW), 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 ne · 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 pro
- Mitigation me sures 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.

vn the line we will need to prepare Traffic Control Plans (or the now lovely sounding Traffic Guidance Schemesi) for the construction of 2 new roundabouts to Barry Way, but the exact details of their construction are not available at this time – essarily these details (and any TGS requirements) will be provided to TfNSW 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





#### 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 Reich CC Zachary.combile-brown: Sharon Homer (1) You replied to this message on 14/10/2022 10.59 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 Reich Cc Zachary.crombie-brown: Sharon Homer () You replet to this message on 14/10/2022 1:11 PM.



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



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



Appendix C: SIDRA Movement Reports



# **SIDRA** Intersection Plan





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

#### MOVEMENT SUMMARY

#### Bite: 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 VC [ Total veh/30min	DLUMES HV] %	DEMAND [ Total veh/h	FLOWS HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK [ Veh. veh	OF QUEUE Dist] 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 (Akcelik 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

#### Dite: 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 VC [ Total veh/30min	DLUMES HV] %	DEMAND [ Total veh/h	FLOWS HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK [ Veh. veh	OF QUEUE Dist] 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 OHW 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 OHW 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.