

SOIL AND WATER MANAGEMENT NOTES

INTRODUCTORY NOTES

1. THIS IS A CONCEPTUAL SOIL AND WATER MANAGEMENT PLAN (SWMP). IT IS INTENDED TO INDICATE THAT THE CIVIL WORKS REQUIRED FOR THE DEVELOPMENT OF THE SITE CAN BE UNDERTAKEN WITHOUT POLLUTION TO RECEIVING WATERS DURING THE CONSTRUCTION PHASE. THE LOCATIONS, SIZES AND TYPES OF CONTROL MEASURES SHOWN ARE SUGGESTED OPTIONS ONLY.
2. ALL REFERENCES OF DETAILS, TESTING AND PROCEDURES ARE TO BE FOLLOWED AS SPECIFIED IN THE DEPARTMENT OF HOUSING "MANAGING URBAN STORMWATER SOILS CONSTRUCTION" MANUAL, MARCH 2004, HERE IN REFERRED TO AS THE "BLUE BOOK".
3. THESE CONCEPT PLANS ARE TO BE READ IN CONJUNCTION WITH THE ENGINEERING PLANS AND OTHER PLANS OR WRITTEN INSTRUCTIONS THAT MAY BE ISSUED AND RELATING TO THE DEVELOPMENT OF THE SITE.
4. ALL CONTRACTORS SHALL FULLY RESEARCH AND UNDERSTAND THEIR RESPONSIBILITIES IN MINIMISING THE POTENTIAL FOR SOIL EROSION AND POLLUTION TO DOWNSTREAM LANDS AND WATERWAYS. PROVIDE A DETAILED SWMP IN ACCORDANCE WITH "BLUE BOOK" INCLUDING STAGING OF WORKS.

EROSION CONTROL

1. CLEARLY VISIBLE BARRIER FENCING SHALL BE INSTALLED AT THE DISCRETION OF THE SUPERINTENDENT TO ENSURE TRAFFIC CONTROL AND PROHIBIT UNNECESSARY SITE DISTURBANCE. VEHICULAR ACCESS TO THE SITE SHALL BE LIMITED TO ONLY THOSE ESSENTIAL FOR CONSTRUCTION WORK AND THEY SHALL ENTER SITE ONLY THROUGH THE STABILISED ACCESS POINTS.
2. WHERE PRACTICAL, FOOT AND VEHICULAR TRAFFIC WILL BE KEPT AWAY FROM ALL RECENTLY STABILISED AREAS.
3. AT ALL TIMES, AND IN PARTICULAR DURING WINDY AND DRY WEATHER, LARGE, UNPROTECTED AREAS WILL BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL.

SEDIMENT CONTROL

1. WATER WILL BE PREVENTED FROM ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS RELATIVELY SEDIMENT FREE (I.E. THE CATCHMENT AREA HAS BEEN PERMANENTLY LANDSCAPED/STABILISED AND/OR ANY LIKELY SEDIMENT HAS BEEN FILTERED THROUGH AN APPROVED STRUCTURE). PROVIDE FLOCULANT TO EARTH BASIN AS REQ'D.
2. TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES WILL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE STABILISED/REHABILITATED.
3. THE USE OF FOCULANTS SHALL BE MINIMISED. SHOULD FOCULANTS BE USED INFORMATION ON THE PRODUCT AND DETAILS ON THE PROPOSED CHEMICAL TO BE USED AND POTENTIAL IMPACTS TO BE PROVIDED TO THE EPA FOR CONSIDERATION AND ASSESSMENT.

OTHER MATTERS

1. ANY EXISTING TREES WHICH FORM PART OF THE FINAL LANDSCAPING PLAN WILL BE PROTECTED FROM CONSTRUCTION ACTIVITIES BY:
 - (A) PROTECTING THEM WITH BARRIER FENCING OR SIMILAR MATERIALS INSTALLED OUTSIDE THE DRIP LINE.
 - (B) ENSURING THAT NOTHING IS NAILED TO THEM.
 - (C) PROHIBITING PAVING, GRADING, SEDIMENT WASH OR PLACING OF STOCKPILES WITHIN THE DRIP LINE.
2. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED TO ENSURE THAT THEY OPERATE EFFECTIVELY. REPAIRS AND OR MAINTENANCE SHALL BE UNDERTAKEN REGULARLY AND AS REQUIRED, PARTICULARLY FOLLOWING STORM EVENTS.
3. THE CONTRACTOR SHALL PROVIDE ALL MONITORING CONTROLS & TESTING.
4. SITE REVEGETATION AND REHABILITATION SHALL BE UNDERTAKEN AS SOON AS PRACTICABLE THROUGHOUT CONSTRUCTION OPERATIONS.
5. CONSTRUCTION SHALL BE PROGRAMMED SO THAT THE TIME OF EXPOSURE OF WORKING SURFACES IS MINIMISED.
6. ALL SPOIL DEPOSITED DURING CARTAGE OF MATERIALS FROM OR TO THE SITE SHALL BE REMOVED IMMEDIATELY TO THE SATISFACTION OF COUNCIL (PUBLIC ROADS) AND THE OWNER (PRIVATE ROADS).
7. WHERE REQUIRED GUTTERS AND ROADWORKS SHALL BE SWEEP REGULARLY TO MAINTAIN THEM FREE FROM SEDIMENT.

SOIL AND WATER MANAGEMENT LEGEND

- SITE BOUNDARY
- SEDIMENT FENCE
- CD --- CATCH DRAIN
- OVERLAND FLOW
- TEMPORARY SHAKER RAMP FOR ENTRY/EXIT
- SEDIMENT BASIN (LOCATION TBC ON-SITE)
- TEMPORARY STOCKPILE (LOCATION TBC ON-SITE)
- GEOTEXTILE PIT FILTER / FILTER SURROUND INSTALLED ON EXISTING PIT
- SANDBAGS INSTALLED ON EXISTING PIT
- GEOTEXTILE PIT FILTER / FILTER SURROUND INSTALLED ON NEW PIT
- SANDBAGS INSTALLED ON NEW PIT

SURVEY LEGEND

- SITE BOUNDARY
- EX SURFACE LEVEL
- EX SURFACE CONTOUR
- EXISTING STORMWATER DRAINAGE LINE
- EXISTING SEWER LINE

NOTE:

REFER DRAWING JHS-CE-2006 FOR SEDIMENT CONTROL DETAILS.

CONCEPTUAL SEDIMENT AND EROSION CONTROL PLAN

SCALE 1:500

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

FOR CONSTRUCTION

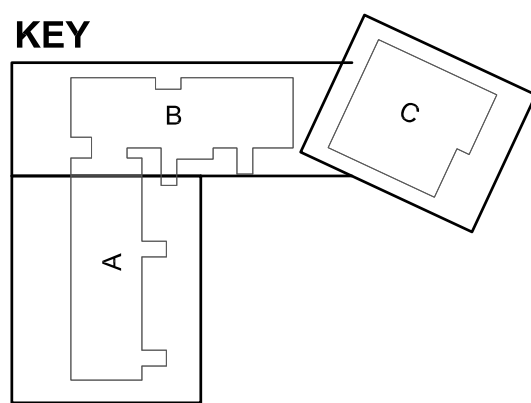
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KEY



Rev	Date	Description	Chkd	Auth.
A	24.03.21	DRAFT SCHEMATIC DESIGN ISSUE		
B	18.04.21	SCHEMATIC DESIGN ISSUE		
C	07.05.21	SCHEMATIC DESIGN ISSUE		
D	12.05.21	SCHEMATIC DESIGN ISSUE		
E	15.10.21	PRELIMINARY FOR DO		
F	12.11.21	ISSUED FOR DO		
G	24.03.22	ISSUED FOR RESPONSE TO SUBMISSIONS		
H	01.07.22	ISSUED FOR CROWN CERTIFICATION		
I	22.07.22	RE-ISSUED FOR CROWN CERTIFICATION		
J	17.08.22	SEDIMENT FENCE AMENDED TO ENVIRONA DRIVE		

Project
High School in Jerrabomberra
ENVIRONA DRIVE,
JERRABOMBERRA NSW 2619
Drawing Title **CONCEPTUAL SEDIMENT &
EROSION CONTROL PLAN**

Designed	Reviewed	Drawn	Sheet
MW	SCM	MW	B1
Job No.	Status	Date	Scale
5555	DD	OCT '21	1:500
Drawing No.			Revision
JHS-CE-2005			J

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Curriculum Vitae of Simon Matthews

Year of Birth	1958
Education	Bachelor of Engineering (Civil) Canterbury University (NZ) 1980 Master of Engineering Science (Structural) University of NSW 1989
Technical Societies	Member, Institution of Engineers, Australia Member of Structural College, Institution of Engineers, Australia Member, Institution of Professional Engineers, New Zealand Member, New Zealand National Society of Earthquake Engineering Committee Member, Earthquake Loading Code, Standards Australia
Registration	CPEng (Chartered Professional Engineer) No. 2518846 NER (National Engineers Register) RPEQ (Registered Professional Engineer of Queensland)
Experience	<div> <div>Aug 2000 – present</div> <div> Director M & G Consulting Engineers Pty Ltd </div> </div> <div> <div>1993 – Dec 2000</div> <div> Director Tierney & Partners Pty Ltd </div> </div> <div> <div>1991 - 1993</div> <div> Principal Tierney & Partners Pty Ltd </div> </div> <div> <div>1988 - 1991</div> <div> Associate Tierney & Partners Pty Ltd </div> </div>
Fields of Competence	<ol style="list-style-type: none"> 1 Building Design (Residential, Commercial, Student Accommodation, Education Facilities, Hospital, Aged Care Facilities) 2 Infrastructure (Railway Stations, Airport Control Towers) 3 Civil Engineering (Drainage, Road & Rail Bridges, Subdivisions) 4 Seismic Design (New Structures, Strengthening for Earthquakes) 5 Retaining Wall Design (Deep Excavations, Retaining Walls, Underpinning) 6 Industrial Design (Factories, Warehouses) <p>Simon has over 30 years of professional experience as a structural & civil engineer. He has worked on a range of projects encompassing the delivery of innovative structural solutions for clients in the traditional client – consultant relationship, to acting for builders and developers as a peer review consultant to value engineer designs and proposals to achieve time and cost savings and to integrate structures and structural detailing into builder's construction methods and programmes.</p>

APPENDIX C – ROLES AND RESPONSIBILITIES MATRIX

Attached document - Appendix C - C-PRE-F026 Roles and Responsibility Matrix Jerrabomberra Rev A_FINAL_190522

Project Roles and Responsibility Matrix

L = Leadership (Accountable)
P = Participate in / Complete Task (Responsible)
C = Communicated to
M = Mandatory

Project Name : Jerrabomberra High School

Project Revision Number : A - FINAL

Date 19-May-22

IMPORTANT NOTE - BOTH the Project Manager and the relevant employee MUST be satisfied with allocated roles / responsibilities, this includes ensuring the employee has satisfactory competency to support agreed responsibilities.

Where a competency / skill gap has been identified please refer to the Learning and Development Procedure - for further action requirements

Task	Company Positions			Standard Project Positions \ Roles					
	- State Manager	- Construction Manager	- State SQE Manager	- Project Manager (PM)	- Site Manager (SM)	- Contract Administrator (CA)	- Project Coordinator / Site Supervisor	- Construction Worker 1	- Construction Worker 2
	Reports to GMC	Reports to MCO	Reports to MCO	Reports to MCO & PD	Reports to PM	Reports to PM	Reports to PM	Reports to SM	Reports to SM
Initials of Person Holding Position									
Project General									
Point of Contact for Client Representative	P	P		L		P			
Point of Contact for Consultants		P		L	P	P	P		
Point of Contact for Industrial Relations	P	P	P	L	P				
Manage and Track Right of Entry Notices				P	L		P		
Manage and Track Code of Practice, Legislative Requirements			P	L	P	P			
Planning									
Appoint Project Team & maintain resourcing	P	L		P					
Lead and mentor the team	P	P		L	P				
Manage / Roster Staff				L	P	P			
Establish / Maintain Roles and Responsibilities Matrix and Induct team to it's use				L			P		
Employee performance appraisals as per Company Schedule		P		L					
Identify, Coordinate & Implement Training Requirements			P	P	L		P		
Review Head Contract	P	P		P		L			
Understand and keep abreast of Terms & Conditions	P	P		L		P			
Define the Contractual Project Scope	P	P		L		P	P		
Identify Contractual Risks	P	P		L		P			
Develop and update Contract Procedures / Processes				L		P			
Store Contract document - client						L			
Building Works Approvals				L		P			
Establish project budget	P	P		L		P			
Establish Cheops code allocation				P		L			
Payment of Subcontractors and Suppliers				P		L			
Identify / Design or Service Scope				L		P			
Consultant - contractor Selection / Shortlist				L		P			
Develop Brief, Scope and Profile				L		P			
Consultant Agreement Schedules				L		P			
Consultant Agreement Recommendation				L		P			
Execute Consultant Agreement				L		P			
Monitoring of consultant performance				L		P	P		
Manage and undertake Dilapidation report				L	P				
Arrange and Maintain Facilities / toilets/tables/chairs					L				
Arrange and Maintain Equipment /locks/security/					L				
Arrange and Maintain Services / electrical/plumbing					L				
Arrange and Maintain IT requirements				L		P			
Prepare, monitor and update - files, drawings, ACONEX				P		L	P		
Establish & Maintain Amenity Cleaning & Supply					L			P	P
Identify, provide and maintain special storage requirements (inc Haz Substance)					L				
Establish & Maintain Perimeter Fencing					L			P	P
Establish & Maintain Entry					L				
Establish & Maintain Environmental conditions					L			P	P
Establish & Maintain Safety Information /posters/hazard reporting/signage					L				
Establish & Maintain Company Branding				L	P	P			
Arrange and Maintain Stationary & Miscellaneous Supplies						L			
Prepare, monitor and update Project Management Plan				L	P		P		
Prepare, monitor and update Project Commencement Checklist				L	P		P		
Prepare, monitor and update Performance Targets				L	P	P	P		
Prepare, monitor and update Stakeholder Risk Profile				L	P	P	P		
Prepare, monitor and update Project Risk Assessment				L	P	P	P		
Design									
Prepare, monitor and update Safety in Design Risk Profiles			P	L			P		
Participate in design and pre-construction planning		P		L	P		P		
Conducting workshops with customers/clients at the conceptual design stage				L		P			

Task	- State Manager	- Construction Manager	- State SQE Manager	- Project Manager (PM)	- Site Manager (SM)	- Contract Administrator (CA)	- Project Coordinator / Site Supervisor	- Construction Worker 1	- Construction Worker 2
Liaise with Architects, Engineers etc regarding specifications technical matters.				L	P		P		
Vet contract documentation in relation to design services and construction aspects.				L	P		P		
Identify interface, coordination and procurement issues relating to design				L	P	P			
Prepare schedules to ensure the timely completion of design services for projects.				L	P	P	P		
Liaise with design team, client, sub-contractors and suppliers				L	P	P	P		
Field testing or trialling proto-types with a representative group of users				L	P	P	P		
Design for safe maintenance			P	L	P				
Design for safe alteration			P	L	P	P			
Test, trial or evaluate the design solution with various users (WHERE PERMITTED).				L		P			
Prepare, monitor and update ITPs, product inspections, sampling register				P	P	P	L		
Implement design procedure \ management plan				L	P	P	P		
Undertake and design safety reviews for constructability, operability and maintenance				L	P	P	P		
ESD Reviews				L	P	P	P		
Procurement									
Prepare Procurement Schedule				P	P	P	L		
Monitor and Update procurement schedule				P		P	L		
Identify on procurement schedule long lead time plant/materials				L	P	P			
Prepare scope of work & documentation list		P		P	P	L	P		
Internal Fitout						L			
Services/Structure							L		
External/Facades									
Identify any discrepancies, anomalies associated with documents		P		L	P		P		
Develop detailed scope of works (in conjunction with proforma)				P		L	P		
Undertake formal OHS & E review of tenders				P	L				
Services Manager to be involved in Final review of services let, Pre-award				L		P	P		
Review tenders and quotation to determine conformity with the tender				P		L	P		
Internal Fitout						L			
Services/Structure							L		
External/Facades									
Draft a recommendation to engage the contractor	P	P		P		L	P		
Issue Recommendation per Internal Approval	P	P		L		P	P		
Internal Fitout						L			
Services/Structure							L		
External/Facades									
Issue Subcontract Agreement (No letters of Intent)				P		L	P		
Delivery									
Site Supervision & Coordination									
Structural trades				P	L				
Services				P	P	P	L		
Finishes trades				P	P				
External Works: Hebel/Windows/External Balustrade/Waterproofing/Public Realm				P	P				
Coordinators									
Structural trades				P	P		L		
Services Trades				P	P		L		
Finishes trades				P	P				
External Works: Hebel/Windows/External Balustrade/Waterproofing/Public Realm				P	P				
Site Progressive Clean up and Waste Removal / Control					L			P	P
Materials Handling & Delivery coordination					L			P	P
Record of plant hire and note of off-hire number					L			P	P
Coordinate Subcontractor Resources				P	L		P		
Take Weekly Photos, date and electronically file					P		P		
Prepare, monitor and update sub-contract register				P		L	P		
Draft Subcontracts for approval and sign off				P		L			
Approve and sign off Subcontracts	P	P		P		L			
Approval of Subcontractor / Supplier claims				P		L			
Payment of Subcontractors and Suppliers				P		L			
Ensure adequate retention held prior to final claims (incl defects / NCR's)				P		L			
Preparation of Client Progress Claim and follow up payment of				P		L			
Ensure subcontractor submit of statutory doc's (insurance, workcover, licences etc)				P		L			
Manage BG's / retentions at project completion				P		L			
Log purchase orders				P	P	L			
Establish a register and monitor site IT Recoverables				P		L			
Establish a register and monitor project reimbursables				P		L			
Collate monthly timesheets for PM signature				P	P	L			
Collate Weekly timesheets for approval				P	L	P		P	P
Control of incoming & outgoing fax						P	L		
Prepare Letting Schedule; nominate responsible party for each trade				L		L	P		
Prepare & Update Variation Register				P		L			
Prepare / Issue Variation Quotations				P	P	L			
Issue Variation Notices to subcontractors				P	P	L	P		
Manage timely approval of variations				P		L			
Enter Variations into cheops. (confirm Process)						L			
Enter Budgets into cheops				P		L			

Task	- State Manager	- Construction Manager	- State SQE Manager	- Project Manager (PM)	- Site Manager (SM)	- Contract Administrator (CA)	- Project Coordinator / Site Supervisor	- Construction Worker 1	- Construction Worker 2
Prepare Back charge Register				P		L			
Issue Back charge notices to Subcontractors				P		L			
Respond to Subcontractor Claims - EOT				P		L			
Maintain an accurate site diary					L				
Prepare and Issue Monthly Client Reports				L		P			
Prepare and Issue Monthly SQE Reports				P	L				
Prepare, monitor, update and Financial Calendar				P		L			
Prepare, monitor, update and Security Bonds				P		L			
Prepare and Issue Monthly Cheops Reporting				P		L			
Prepare, monitor, update and Progress Claims				P		L			
Prepare, monitor, update and Issue Cash Flow				P		L	P		
Prepare, monitor and update Risk and Opportunity Register (Project \ Stakeholder)				L	P	P			
Prepare / Update Contingency report				P		L			
Prepare Monthly Cost Report as per established format (ongoing through month with regularly input)				L		P			
Prepare, monitor and update Weekly Programs				P	L		P		
Prepare, monitor and update 4 weekly programs				P	L		P		
Track activities on programme ; Master Programme to be visible on Wall				L	P		P		
Prepare, monitor, update and display Staging Plan (Site or Office wall).				P	L				
Subcontractor programmes to be developed				L	P		P		
Prepare, monitor and update Commissioning Programme				P	P		L		
Prepare, monitor and update Master Program (electronic)				L	P		P		
Collate and Issue Fortnightly Programs to subcontractors.				L	P				
Issue Updated Master program to Subcontractors / Client				L	P		P		
Track critical path activities				P	L		P		
Prepare, monitor and update EOT / Delay Register				P	P	P			
Substantiate EOT / Delay Claims				P	P	P			
Prepare schedules to ensure the timely completion of design services for projects.				L	P	P			
Meeting Schedule to be developed and issued to all parties				L					
Project Control Group Meeting	P	P		L					
Client / Consultant Meeting				L	P		P		
Subcontractor Meetings				P	L		P		
Design Meetings (Hindmarsh lead meetings or involvement)				L	P		P		
Internal Programming / Production Meeting - Construction program				L	P				
Site Safety Committee Meeting				P	L		P		
Staff/ Team Meeting		P		L	P	P	P	P	P
Site pre start meeting (Compulsory)				P	L		P		
Group/work team OH&S discussions				L	P	P	P	P	P
Liaise with Local Authorities / Emergency / Electrical / Water/				P	L		P		
Safety									
Safety Management Plan Requirements									
Prepare, monitor and update Safety Management Plan			P	L	P	P	P		
Prepare, monitor and update Project Risk Assessment			P	P	L	P	P		
Ensure each Management Plan reflects and supports the current Project and Teams Needs			P	L	P	P	P		
Completion of reports in support of Objectives and Targets (Onsite data entry)			P	P	L	P	P		
Ensure the Project team are aware and understand Company Objectives and Targets			P	L	P	P	P	P	P
Identification of any client / contractual Project Objectives and Targets			P	L	P				
Accountable for all Safety matters across the state	L		P	P					
Ensure the Project SMP is complied with (entire team)	P	P	P	L	P	P	P	P	P
Identify Legislative and Regulatory requirements relevant to Project operations.			P	P	L				
Review Legislative and Regulatory requirements relevant to Project operations.			P	P	L				
Ensure all relevant contractor documentation is forwarded for work permit approval per Project Risk Assessment				P	L		P		
Review and ensure all Safe Work Method Statements reflect Risks identified and appropriate controls, ensure relevant legislation / regulations are acknowledged			P	P	L				
Ensure any training completed at project level is documented and relevant forms completed and forwarded to HR				L	P	P	P	P	P
Identification of any skill gaps at project level, arrangement of training ID and ensuring training is completed				L	P	P	P	P	P
Conduct Site Specific Inductions					L				
Maintenance of all Induction (including Visitor) Records and Registers					L				
Ensure all workers performing work on site complete site induction				P	L				
Conduct Visitor Inductions					L				
Seek and review Plant Risk Assessments (Hindmarsh or subcontractor assessments)					L				
Complete Weekly SQE Report				P	L				
Ensure registers for plant, electrical, equipment, maintenance associated with Hindmarsh equipment are current.					L				
Maintain the Hindmarsh Plant Register and associated Plant Risk Assessments and Service / Check logs					L				
Perform periodic spot checks on contractors to ensure Plant and Equipment records, including risk assessments, are current and adequate					L				
Review Safety Management Plan and associated documents / sub plans / risk profiles			P	L	P				
Identification and management of any Health Surveillance Requirements			P	L	P				
Completion of Federal Safety Reports			P	L					
Completion of Monthly Internal Project Report			P	L	P	P	P	P	P
Reporting of Incidents (entire team)	P	P	P	L					
Completion of Incident Reports			P	L	P	P	P	P	P
Action Incident Investigation			P	L	P				
Ensure Regulatory Notification where required in the event of notifiable Incident			P	L	P				
Other Safety Requirements									
Prepare, monitor and update Emergency Management Plan			P	L	P				

Task	- State Manager	- Construction Manager	- State SQE Manager	- Project Manager (PM)	- Site Manager (SM)	- Contract Administrator (CA)	- Project Coordinator / Site Supervisor	- Construction Worker 1	- Construction Worker 2
Review and update Hazardous Substance Register & MSDS & Risks Assessments				P	L				
Manage and monitor to site and subcontractor OHSE Requirements				P	L				
Evaluate OH&S performance of subcontractors				P	L	P	P		
Attend Sub contractor tool box meetings randomly					L				
Initiate and coordinate OH&S awareness activities or presentations			P	L	P				
Consult on and resolve OH&S issues			P	L	P				
Administer first aid to injured persons					L				
Assist with return to work and rehabilitation processes			L	P	P				
Emergency Management									
Prepare, monitor and update Project Emergency Management Plan			P	L	P	P			
Nominate Chief Emergency Warden CEW (confirming competency)				L	P		P		
Nominate First Aiders (ensure adequate number of personnel per workers)				L	P				
Ensure Dangerous / Hazardous goods or substances are stored as per MSDS				P	L				
Ensure MSDS records are maintained and available				P	L				
Ensure Hazard / Substance Register is up to date				P	L				
Document any client / contractual emergency requirements within the EMMP				L	P				
Display Rehabilitation / Employee Assistance Flow Chart in Site Sheds				P	L				
Display Incident Reporting Flow Charts in Site Sheds				P	L				
Ensure statutory reporting requirements are understood and documented within the EMMP				L	P				
Record First Aid, Medical, Lost Time Injury Treatments - Via Monthly SQE Report				L	P				
Emergency Personnel will have training booked to meet requirements where required or where unforeseen training requirements				L	P	P			
Emergency and First Aid Equipment will be determined and placed as per CEW assessment				L	P				
Display EMMP Appendices within site sheds				L	P				
Track and records number of workers on site				L	P				
Induct all workers into the EMMP and its requirements				L	P				
Discuss / invite / forward emergency plans to local authorities for input / feedback / approval				L	P				
Coordinate Emergency Drills				P	L				
Document Emergency Drills and Findings associated with Emergency Equipment Tests, Exit signage, paths of travel and alarm				P	L				
Ensure all emergency documents / records are maintained as per the EMMP				P	L				
Traffic Management									
Prepare, monitor and update Project Traffic Management Plan				L	P				
Overall Accountability of TTMP including reporting to MCO & Client Representative				L	P				
Responsible for ensuring compliance with TTMP (all employees)	P	P	P	L	P	P	P	P	P
Inclusion of Traffic Management requirements in induction					L				
Ensure persons engaged in TTMP work are competent and adequately trained					L				
Identify and maintain TTMP Docs / Records as per project requirements					L				
Regularly monitors physical controls are maintained as per TTMP Drawing / Design					L				
Ensure performance of TTMP is reviewed, with suitable corrections where necessary					L				
Design of Temporary Road Layout / Signage and other requirements (maybe outsourced)					L				
Maintenance of TTMP Signs					L			P	P
Removal / Movement of TTMP Signage (maybe outsourced)					L				
Communication of changes in TTMP to relevant parties are effective and accurate					L				
Ensure all staff and subcontractors are aware of implementation & importance of TTMP					L				
Advise suppliers of TTMP requirements when supplier delivering to site					L				
Manage material handling & delivery requirements					L				
Quality Assurance									
Prepare, monitor and update Project Quality Plan				L	P	P	P		
Obtain, read and understand Quality Management Plan				L	P	P	P		
Document any QA related objectives and Targets				L	P	P	P		
Develop monitoring system for Project Quality Objectives and Targets				L	P	P	P		
Confirm QA Role and Resource allocation is adequate to support quality requirements				L	P	P			
Identify and Schedule any additional QA Training Requirements				L		P	P		
Identify and document any quality High Risks / Opportunities				L	P	P	P		
Confirm QA Document and Record Management Requirements				L	P	P	P		
Understand compliance requirements, auditing and inspections				L	P	P	L		
Determine Quality Reporting Requirements				L	P	P	L		
Provide a weekly summary status of RFIs / Shop drawings prior to project team meetings flagging critical items				L	P	P			
Develop and Document Communication Workflows				L		P			
Document Control									
Architectural							P		
Structural & Services							L		
Setup Aconex - user access, workflows, mail types, document management				P		P	L		
Establish Request for Information Workflow (aconex or flowchart)				P		P	P		
Issue Request For Information				P	P	P	P		
Establish Manage and Update Request for Information Register				P		P	P		
Consolidate RFI responses (& issue internally) including confirmation whether time or cost implication - Coordinated via Aconex				P	P	P	P		
Establish Engineer / Arch / Client Instruction workflow (aconex or flowchart)				P	P	P	P		
Establish Hindmarsh Site Instruction requirements / workflow (aconex or flowchart)				P	P	P	P		
Consolidate Instruction responses (& issue internally) including completion of Design Change Authority Form as appropriate .				L	P	P	P		
Issue Site Instructions (SI)				P	P	L	P		
Establish Manage and Update Site Instruction Register				P		P	P		
Coordinate project documentation via Aconex (Drawings / Specifications)				P		P	P		
Mark (cloud) hard copy 'For Construction Drawings' with Site / Client Instructions or RFI				P	P	P	P		
Monitor shop drawings and ensure timely submission and approval				P	P	P	P		
Establish Prototype and Sample Register - Manage Submissions & approvals				P	P	P	P		
Action and or Close out Client / Consultants requests				P	P	P	P		

Task	- State Manager	- Construction Manager	- State SQE Manager	- Project Manager (PM)	- Site Manager (SM)	- Contract Administrator (CA)	- Project Coordinator / Site Supervisor	- Construction Worker 1	- Construction Worker 2
Action and or Close out Client / Hindmarsh Site Instructions				P	P	P	P		
Develop and document Project QA Strategy				L	P	P	P		
Determine and document Definable Features of Work				L	P	P	P		
Review Project Documentation (Specifications, drawings) and complete QAC Part 1				P	P	L	P		
Review Subcontractor QA Documentation using related QAC Part 2				P	P	P	L		
Develop and implement Hindmarsh ITPs as appropriate				P	P	P	L		
Develop and document Inspection (internal and external) processes				L	P	P	L		
Complete Notifications to Validating Consultants / Authorities				L	P	P			
Close out raised Inspection Actions				P	P	P	L		
Identify and Register Hindmarsh owned measuring equipment				P	P	P	L		
Obtain measure equipment register and calibration records from subcontractors					P		L		
Issue ARNs for Non-conforming product and services as required				P	P	P	P		
Issue ARNs for Corrective and Preventive Action requirements as required				P	P	P	P		
Monitor and ensure timely close out of ARNs				L	P	P	P		
Complete Design Change Authority Form for all scope changes				L		P	P		
Register and track to closure each Design Change Authority (Aconex or Design Change Register)				P	P	L	P		
Ensure Trade Procurement addresses QA requirements				L	P	P	L		
Complete inspection of goods received				P	L		P		
Seek completion of Client Satisfaction Survey (6 monthly)				L		P			
Continually review and update construction program				L	P	P	P		
Other QA Items									
Prepare, monitor and update commissioning Register				P		P	L		
Manage the technical compliance of services and commissioning data					P	P	L		
Review service documentation for compliance and errors / anomalies				P	P	P	L		
SA - Certification of Completion for Installation of Essential Safety Provisions Form 2 Development Act.				L		P	P		
Environment and Sustainability									
Prepare, monitor and update Project Environmental Plan			P	L	P				
Establish and document environmental objectives and targets			P	L	P				
Develop monitoring system for Project Env Objectives and Targets			P	P	L				
Confirm ENV Role and Resource allocation is adequate to support env requirements			P	L	P				
Identify and Schedule any additional ENV Training Requirements			P	L		P			
Review Legislative and Regulatory Register ensuring env requirements are identified			P	L	P				
Ensure understanding regarding legislative / regulatory access and monitoring			P	L	P	P	P		
Prepare, monitor and update Environmental Risk Profile			P	L	P				
Review and make project specific required Environmental Impact Guides			P	L	P				
Update and monitor Environmental Controls as nominated with Risk Profile and Environmental Impact Guides			P	P	L				
Understand incident reporting requirements and expectations			P	L	P	P			
Ensure Env Hazard Reporting requirements are understood and satisfactory to workers			P	P	L			P	P
Determine and document community / stakeholder communication requirements			P	L		P	P		
Determine and document env communication strategy			P	L		P	P		
Understand compliance requirements and expectations			P	L	P	P	P		
Inspect and monitor project specific env controls and processes. Document via Environmental and Sustainability Check sheet			P	P	L	P	P	P	P
Issues ARNs where required to address Env requirements				P	L				
Determine and document env reporting requirements				P	P	P	L		
Confirm and Document env document and record Management Requirements				P	L		P		
Document available env reports				P	P		L		
Document Project information and particulars				P		L			
Determine and document subcontractor management processes				L	P	P			
Other Env Items									
Liase with community stakeholders as per environmental managment plan requiremnts			P	P	L				
Practical Completion									
Additional Client Requirements				L	P	P			
Prepare Powering up schedule					L	P	P		
Consolidate Defect Lists & Programme				P	P	P	P		
Action Defect Lists advise Subcontractors				P	P	P	P		
Generate & Close out internal defects lists				P	P	P	P		
Manage the submission of maintenance manuals				P		P	L		
Ensure works are completed in accordance with the documentation and AS Standards				L	P	P	P		
Formal handover to client				L	P	P			
Ensure adequate retention held prior to final claims (incl defects / NCR's)				P		L			
Client Satisfaction Survey				L	P	P			

LEGEND

L = Leadership / Complete Task (Accountable)

P = Participate in

M = Mandatory

Direct responsibility to complete the activity drawing on the advice & assistance provided by other
Provide technical and proactive assistance (physically help) to allow the person responsible to
Company Mandatory Roles & Responsibility Requirement and cannot be deleted and may need

Highlights the respective Task is not applicable to the Project

Highlights Position is yet to be resourced

Highlights task is not a Hindmarsh Responsibility / Task may be complete by client / other

Signed Agreement - as tracked via Aconex

- State Manager

- Construction Manager (CM)

.....DATED.....
.....DATED.....

Task	- State Manager	- Construction Manager	- State SQE Manager	- Project Manager (PM)	- Site Manager (SM)	- Contract Administrator (CA)	- Project Coordinator / Site Supervisor	- Construction Worker 1	- Construction Worker 2
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- Project Manager (PM)
- Site Manager (SM)
- Site Supervisor/QA
- Contracts Administrator (CA)
- State SQE Manager (SSM)
- Project Safety Advisor (PSA)
- Construction Worker (CW)
- Construction Worker (CW)
-DATED.....
.....DATED.....
.....DATED.....

APPENDIX D – PROJECT & ENVIRONMENTAL RISK ASSESSMENT

Attached document - Appendix D - Environmental Risk Assessment Rev 2 - NV 14.7.22

Project Risk Assessment - Instructions

The Project Risk Assessment shall be used in accordance with the requirements outlined in the Risk Management procedure on Compass.

TAB 2 - Hazard Identification

Purpose: To list Subcontractors and Activities relevant to the project in order to determine potential hazards.

- Step 1:
- List the known trades in the "Works by HCA or Sub" column
- Step 2:
- For each Subcontractor/Activity, select the Potential Hazards that may apply and place a tick ✓ in the appropriate column.
- Step 3:
- Where Potential Hazards for a specific Subcontractor/Activity are not listed, these shall be added as a new Activity on Tab 3- Risk Assessment and Control

READ THIS TAB FIRST

TAB 3 - Risk Assessment and Control

Purpose: To allocate appropriate risk control measures to lower the risk of harm as low as reasonably practicable.

- Step 1:
- For each Activity with a **Potential Hazard** identified in Tab 2, determine if Potential Hazards apply and select **Yes** or **No**. Further action required when Yes selected only.
- Step 2:
- Where a Potential Hazard is present, determine the **Consequence** and **Likelihood**. These selections determine the **Risk Score**.
- Step 3:
- The **Risk Score** determines the **HCA Signoff** and **Monitoring** requirements.
- The Actions to Control Potential Hazards have been determined based on risk assessment in accordance with High Risk Construction Work Procedures on Compass.

Consequence and Likelihood Tables

Consequence			Likelihood		
1	Severe	Multiple fatalities	A	Almost Certain	Is expected in most circumstances
2	Major	Fatality, permanent disability	B	Very Likely	Will probably occur in most circumstances
3	Moderate	Injury or illness resulting in lost time or medical treatment	C	Possible	Could happen occasionally
4	Minor	Injury or illness without lost time or medical treatment	D	Unlikely	May occur sometime
5	Lower Significance	First aid	E	Rare	May only occur in exceptional circumstances

Risk Score Calculator

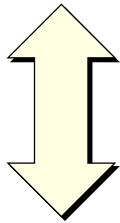
	A	B	C	D	E
1	VH-1	H-2	H-3	HM-4	HM-5
2	H-6	H-7	HM-8	HM-9	HM-10
3	H-11	M-12	M-13	L-14	L-15
4	M-16	M-17	L-18	L-19	L-20
5	MI-21	L-22	L-23	L-24	L-25

Project Risk Assessment - Instructions

Risk Appetite

Description	Risk Score	Controls
SEVERE	VH-1	Construction Manager and SQE Manager to decide if task can proceed. If task proceeds, Construction Manager and SQE Manager to co-approve SWMS with Project Manager; SQE Manager Conduct SWMS/JSEA Field Assessment
	H-2	
HIGH	H-3	
	H-6	SQE Manager and Project Manager to co-approve SWMS; Project Manager to conduct SWMS/JSEA Field Assessment
	H-7	
	H-11	
HIGH MODERATE	HM-4	
	HM-5	
	HM-8	Detailed review of control measures by Site Supervisor prior to SWMS approval to ensure potential hazard reduced as far as reasonably practicable.
	HM-9	
	HM-10	
MODERATE	M-12	
	M-13	
	M-16	Identified control measures must be capable of controlling hazards that cannot be reduced further in accordance with Hierarchy of Control.
	M-17	
	M-21	
LOW	L-14	
	L-15	
	L-18	
	L-19	
	L-20	No further controls required. Monitor to ensure risk does not escalate.
	L-22	
	L23	
	L-24	
	L-25	

Project Risk Assessment - Instructions

Hierarchy of Controls		
Elimination	Remove the hazard out of the workplace. i.e. designing the problem out. This is the best option, if it can be done.	<div>Most Effective Controls</div> <div></div> <div>Least Effective Controls</div>
Substitution	Use something less hazardous. For example water based chemicals rather than solvent based ones.	
Isolation	Use barriers to shield or isolate the hazard. For example guards on machines, enclosures for noisy machinery.	
Engineering Controls	Design and install equipment to counteract the hazard. For example installing an exhaust ventilation system to extract dangerous fumes or dust.	
Administrative Controls	Arrange work to reduce the time people are around the hazard. Reduce risk by providing procedures, SWMS, training, or other administrative actions.	
Personal Protective Equipment	Have people wear protective equipment and clothing while near the hazard. For example, ear plugs or earmuffs.	

TAB 4 - Client or other entity

Purpose: To identify, control and consult potential hazards that may impact clients, the public or other entities. Where potential hazards exist, liaison with these entities shall be managed and records of activities maintained.

Consequence and Likelihood Tables, Risk Score and Risk Appetite above applies.

INSTRUCTIONS:

Where HCA is required to provide its services within or near a client’s or other entity’s workplace, HCA shall complete the following:

- Discuss with the client / other entity specifics relating to their operations, this may include but is not limited to:
 - o operational / workplace rules, requirements, sensitivities or expectations
 - o potential hazards created by HCA presence
 - o safety of persons (HCA, client, other entity, public),
 - o procedures, processes which may be impacted by HCA presence
 - o proposed hazard identification, risk assessment and control processes before, during and after the construction process
 - o traffic (vehicle and pedestrian) management
 - o emergency preparedness and response processes / procedures
 - o security
 - o other items as HCA, client / other entities feel appropriate
- Discuss and agree on hazards, risk assessment and proposed control measures
- Document discussions and outcomes via a HCA Project Risk Assessment document , worksheet "Client / Other Entity)
- Include Safety Management as an agenda item for appropriate meetings.
- Regarding ‘other entities’ agree how risk / safety related matters will be discussed. Record these meeting arrangements within the Project Management Plan, Communication / Meeting section.
- Maintain the Risk Assessment document as per agreements or as per scheduled client / other entities meeting schedule. A ‘triggered’ review may take place sooner where a relevant event / issue occurs.

TAB 5 - Environmental Risk

Purpose: To allocate appropriate environmental impact guides and other risk control measures to lower the environmental risk as low as reasonably practicable.

Step 1: For each **Aspect** with a potential **Impact** identified, determine if potential **Impact** applies and select **Yes** or **No**. Further action required when Yes selected only.

Project Risk Assessment - Instructions

Step 2: Where a potential **Impact** is present, determine the **Consequence** and **Likelihood** as per Tab 3. These selections determine the **Risk Score**.

Step 3: The **Risk Score** determines the **HCA Signoff** and **Monitoring** requirements.

The **Actions to Control Potential Impacts** have been determined based on Hindmarsh Environmental Impact Guides on Compass

Step 4: If the site is a **Sensitive Site** (eg; there is a known endangered species that may be impacted by the site, it is neighbouring a national park etc), identify the **Aspect** (as per previous examples) and determine potential **Impacts**

The **Actions to Control Potential Impacts** shall be determined based on Consultant / Regulatory advice

		POTENTIAL HAZARD CATEGORIES																			
		Standard High Risk Work										Non-Standard High Risk Work									
		Safe systems of work (eg SWMS, procedures) to be developed in accordance with "Tab 3 - Risk Assessment and Control"										Safe systems of work (eg SWMS, procedures) to be developed in accordance with OFSC Audit Criteria Guidelines and "Tab 3 - Risk Assessment and Control" in consultation with SQE Manager									
Works by (HCA or SUBS)		Asbestos	Confined Space	Demolition	Electrical	Excavation	Formwork	Health Surveillance, Exposure Monitoring, Hazardous Substance	Mobile Plant	Scaffold	Tilt Up/Precast Concrete	Traffic	Working at Heights	Artificial Extremes of Temperatures	Chemical, Fuel or Refrigerant Lines	Construction Work In, Over or Adjacent to Water/Liquids where Risk of Drowning	Contaminated/Flammable Atmosphere	Diving	Pressurised Gas	Telecommunication Towers	Tunnels
Complete	Delta Demolition	✓		✓		✓			✓			✓	✓								
Scheduled	Excavation	✓				✓			✓			✓	✓								
Active	Traffic Management											✓	✓								
Scheduled	Formwork				✓		✓			✓			✓								
Complete	Scaffold									✓			✓								

Activity	Potential Hazard	Is this a Potential Hazard?	Risk Assessment			Action to Control Potential Hazard	Task Responsibility	HCA Sign Off	Monitoring
		Y/N	Consequence	Likelihood	Risk Score				
Asbestos									
Asbestos Procedure	Exposure to known Asbestos Containing Material (ASM)	Yes	Severe	Almost Certain	VH-1	Asbestos & Health Hazards Management Workshop, Asbestos Register where ACM has been identified or is likely to be present;	Hindmarsh	SQE Manager	SWMS Field Assessment
	Unknown presence / location of ACM	Yes	Severe	Almost Certain	VH-1	Asbestos Management Plan by Occupational Hygienist that identifies type, presence and location of ACM.	Subcontractor	SQE Manager	SWMS Field Assessment
	Uncontrolled removal of ACM	Yes	Severe	Almost Certain	VH-1	Asbestos Removal Control Plan; Regulatory Notifications; Clearance Certificates; SWMS by the licensed Asbestos Removalist per legislative requirements: Class A - licenses the contractor to carry out work with friable and non-friable asbestos; whereas Class B - licenses the contractor to carry out work with non-friable asbestos only. Records of worker qualifications/training/evidence of medicals through Site Inductions;SWMS.	Hindmarsh	SQE Manager	SWMS Field Assessment
	Exposure to disturbed ACM	Yes	Severe	Almost Certain	VH-1	Asbestos Management Plan; Clearance Certificates; SWMS for air monitoring activities by an Occupational Hygienist that is independent of the licensed asbestos contractor removing the ACM.	Subcontractor	SQE Manager	SWMS Field Assessment
	Worker exposure to ACM from removal activities	Yes	Severe	Almost Certain	VH-1	Asbestos Management Plan; Asbestos Removal Control Plan; SWMS; Health Surveillance, Exposure Monitoring and Hazardous Substances Procedure for health surveillance and exposure monitoring activities for workers and work areas potentially affected by ACM.	Hindmarsh	SQE Manager	SWMS Field Assessment
	Unexpected finds of ACM	Yes	Severe	Almost Certain	VH-1	EEMP Standing Orders (see Unexpected Finds of Asbestos or known Health Hazards); Asbestos Management Plan; Asbestos Removal Control Plan; Clearance Certificates, SWMS.	Hindmarsh	SQE Manager	SWMS Field Assessment
Confined Space									
Confined Space Procedure	Uncontrolled Entry into Confined Space	Yes	Severe	Almost Certain	VH-1	Confined Space Permit; SWMS		SQE Manager	SWMS Field Assessment
	Unauthorised Entry into Confined Space	Yes	Severe	Almost Certain	VH-1	Confined Space Permit - Persons entering the confined space and standby persons, shall hold Nationally Recognised Training in Confined Space; Site Induction; SWMS		SQE Manager	SWMS Field Assessment
	Entry into a contaminated or air quality compromised confined space	Yes	Severe	Almost Certain	VH-1	Confined Space Permit; Equipment Calibration Register; SWMS.		SQE Manager	SWMS Field Assessment
	Incident within a confined space	Yes	Severe	Almost Certain	VH-1	EMMP Standing Orders (see Confined Space Rescue); SWMS		SQE Manager	SWMS Field Assessment
Demolition									
Demolition Procedure	Unauthorised / unsafe demolition / removal of building structures and materials	Yes	Severe	Almost Certain	VH-1	Demolition Workshop with Subcontractor to develop the Demolition Work Plan to address the building structure, including adjacent structures, and identified materials; SWMS		SQE Manager	SWMS Field Assessment
	Impact to adjacent building structures and materials	Yes	Severe	Almost Certain	VH-1	Demolition Workshop with Subcontractor to develop the Demolition Work Plan to address adjacent structures and materials; SWMS		SQE Manager	SWMS Field Assessment
	Exposure to hazardous chemicals and materials	Yes	Severe	Almost Certain	VH-1	Demolition Workshop, Asbestos & Health Hazards Management Workshop - Hazmat survey (including hazardous chemicals and materials) been conducted documented by Occupational Hygienist on behalf of HCA and provided to the demolition contractor; SWMS		SQE Manager	SWMS Field Assessment
	Contact with live services	Yes	Severe	Almost Certain	VH-1	Demolition Workshop; Dial Before You Dig; Services Isolation Permit; SWMS (confirm HCA, Client or contractor permits)		SQE Manager	SWMS Field Assessment
	Falls from height	Yes	Severe	Almost Certain	VH-1	Demolition Workshop - (Working at Heights fixed covers and guards on openings and penetrations, and safe access and egress is maintained etc); SWMS		SQE Manager	SWMS Field Assessment
	Falling Objects	Yes	Severe	Almost Certain	VH-1	Demolition Workshop - (Working at Heights exclusion zones, scaffolding requirements; protective structures etc); SWMS		SQE Manager	SWMS Field Assessment
	Incident during demolition	Yes	Severe	Almost Certain	VH-1	Emergency Management Plan EMMP Standing Orders (See Crush Injuries from Plant or Materials, Structure Collapse, Excavation Rescue, Plant Collision/Rollover, Electrical or Services Damage), SWMS		SQE Manager	SWMS Field Assessment
Electrical									
Electrical Procedure	Contact with energised electrical services	Yes	Severe	Almost Certain	VH-1	Electrical Workshop, Services Isolation Permit issued to Licensed Electrical Contractor when safe systems of work have been developed; Core Cut Chase Permit issued prior to any core holing, concrete cutting or chasing works; SWMS		SQE Manager	SWMS Field Assessment
	Unprotected electrical systems including generators and construction wiring	Yes	Severe	Almost Certain	VH-1	Electrical Workshop, RCD protection for portable generators, construction wiring and electrical systems tested by a Licensed Electrical Contractor at maximum 3 monthly intervals and results recorded; Electrical Register; SWMS Construction wiring shall be adequately secured, protected and clearly marked accordingly with "Construction Wiring" sticker and not be tied, bundled or grouped with permanent wiring; SWMS; Weekly SQE Inspection		SQE Manager	SWMS Field Assessment
	Contact with faulty electrical equipment / RCD's	Yes	Severe	Almost Certain	VH-1	Records of testing and tagging of electrical equipment at maximum 3 month intervals by a Licensed Electrical Contractor for Subcontractors and Hindmarsh electrical equipment; Electrical Register (Subcontractors or Hindmarsh); Regulatory Compliance Certificates; SWMS.		SQE Manager	SWMS Field Assessment
	Non Compliant temporary power	Yes	Severe	Almost Certain	VH-1	Electrical Workshop, Regulatory Compliance Certificates for installation of temporary works; SWMS		SQE Manager	SWMS Field Assessment
	Unauthorised installation of electrical services	Yes	Severe	Almost Certain	VH-1	Licensed, Qualified and trained in safe systems of work involving the installation, modification, testing and certification of electrical installations; Site Induction; SWMS		SQE Manager	SWMS Field Assessment

Activity	Potential Hazard	Is this a Potential Hazard?	Risk Assessment			Action to Control Potential Hazard	Task Responsibility	HCA Sign Off	Monitoring
		Y/N	Consequence	Likelihood	Risk Score				
	Incident involving energised electrical services / equipment	Yes	Severe	Almost Certain	VH-1	EMMP Standing Orders (see Electric Shock, Electrical or Services Damage), SWMS		SQE Manager	SWMS Field Assessment

Project Name:

JHS

Developed & Assessed By:

Reviewed & Approved By:

Activity	Potential Hazard	Is this a Potential Hazard?	Risk Assessment			Action to Control Potential Hazard	Task Responsibility	HCA Sign Off	Monitoring
		Y/N	Consequence	Likelihood	Risk Score				
Excavation									
Excavation Procedure	Impact to adjacent building structures, materials and foundations	Yes	Severe	Almost Certain	VH-1	Excavation Permit; SWMS	SQE Manager		SWMS Field Assessment
	Contact with underground or above ground services	Yes	Severe	Almost Certain	VH-1	Excavation Permit; Services Isolation Permit; Services Interference Request; Dial Before You Dig; SWMS	SQE Manager		SWMS Field Assessment
	Ground collapse.	Yes	Severe	Almost Certain	VH-1	Excavation Permit; Inspections Type A or B; SWMS.	SQE Manager		SWMS Field Assessment
	Ground collapse where shoring systems or other documented methods are utilised,	Yes	Severe	Almost Certain	VH-1	Excavation Permit; Inspections Type A or B; SWMS.	SQE Manager		SWMS Field Assessment
	Uncontrolled excavations	Yes	Severe	Almost Certain	VH-1	Excavation Permit; Inspections Type A or B; SWMS.	SQE Manager		SWMS Field Assessment
	Potential falls into the excavation	Yes	Severe	Almost Certain	VH-1	Excavation Permit; Inspections Type A or B; SWMS.	SQE Manager		SWMS Field Assessment
	Mobile plant impacting on the excavation	Yes	Severe	Almost Certain	VH-1	Excavation Permit; Inspections Type A or B; SWMS.	SQE Manager		SWMS Field Assessment
	Incident in and around excavations	Yes	Severe	Almost Certain	VH-1	EMMP Standing Orders (See Excavation Rescue,Structure Collapse, Escavation Rescue, Plant Collision/Rollover, Electrical or Services Damage, Uncontrolled Escape of Gas), SWMS	SQE Manager		SWMS Field Assessment
Formwork									
Formwork Procedure	Uncontrolled erection of formwork	Yes	Severe	Almost Certain	VH-1	Formwork Workshop; SWMS	SQE Manager		SWMS Field Assessment
	Unauthorised design	Yes	Severe	Almost Certain	VH-1	Formwork Workshop; Formwork Designer signoff (designer etc)	SQE Manager		SWMS Field Assessment
	Collapse of Temporary structure	Yes	Severe	Almost Certain	VH-1	Formwork Workshop; SWMS	SQE Manager		SWMS Field Assessment
	Unauthorised erection of formwork	Yes	Severe	Almost Certain	VH-1	Formwork Workshop, Formwork Checklist inspection; SMWS	SQE Manager		SWMS Field Assessment
	Temporary structural support / back propping failure	Yes	Severe	Almost Certain	VH-1	Formwork Workshop; Engineers signoff for stripping / back propping	SQE Manager		SWMS Field Assessment
	Incident involving/ during formwork activities	Yes	Severe	Almost Certain	VH-1	EMMP Standing Orders (See Structure Collapse, Crush Injuries from Plant or Materials, Electric Shock), SWMS	SQE Manager		SWMS Field Assessment
Health Surveillance, Exposure Monitoring, Hazardous Substance									
Health Surveillance, Exposure Monitoring, Hazardous Substance Procedure	Exposure to known health hazards: Synthetic Mineral Fibres (SMF), Polychlorinated Biphenyls (PCB), Ozone Depleting Substances (ODS), Acrylonitrile, Arsenic (inorganic), Benzene, Cadmium, Chromium (inorganic), Creosote, Crystalline silica, Isocyanates, Mercury (inorganic), 4,4'-Methylene bis (2-chloroaniline) (MOCA), Organophosphate pesticides, Pentachlorophenol (PCP), Polycyclic aromatic hydrocarbons (PAH), Thallium, Vinyl chloride, Lead (inorganic)	Yes	Severe	Almost Certain	VH-1	Project Commencement Checklist to identify if known hazards exist on site. Engage an Occupational Hygienist to develop exposure monitoring standards and control plan; Asbestos & Health Hazards Management Workshop, SWMS for tasks where health hazards identified/likely to be present.	SQE Manager		SWMS Field Assessment
	Uncontrolled / absent health surveillance/exposure monitoring	Yes	Severe	Almost Certain	VH-1	Asbestos & Health Hazards Management Workshop, SWMS; Occupational Hygienist to develop exposure monitoring standards and controls; Health surveillance by Medical Practitioner.	SQE Manager		SWMS Field Assessment
	Exposure to health hazards due to failure of inspection, measuring and test equipment	Yes	Severe	Almost Certain	VH-1	SWMS / Plans to identify use of Equipment; Maintain Records of Calibration (Hindmarsh Equipment Calibration Register OR registers supplied by third parties)	SQE Manager		SWMS Field Assessment
	Exposure to hazardous chemicals	Yes	Severe	Almost Certain	VH-1	Hazardous Chemical / Substance Risk Assessment shall manage the use, handling, generating and storing of hazardous chemicals. SWMS, Chemical Substance Register, Safety Data Sheet (SDS). EMMP Standing Orders (See Unexpected Finds of Asbestos or known Health Hazards)	SQE Manager		SWMS Field Assessment
Mobile Plant									
Mobile Plant Procedure	Failure to identify hazards associated with plant	Yes	Severe	Almost Certain	VH-1	Plant Risk Assessment by either a Designer, Manufacturer, Supplier, Owner or Competent Person for all plant prior to use on site. Where a suitable plant risk assessment has not been supplied, the Principle Contractor Plant Risk Assessment shall be completed in consultation with the plant operator/supplier. SWMS	SQE Manager		SWMS Field Assessment
	Contact with underground or above ground service	Yes	Severe	Almost Certain	VH-1	Mobile Plant Pre-use Checklist; Mobile Crane/ Boom Pump Set Up; Excavation Permit; SWMS	SQE Manager		SWMS Field Assessment
	Unsafe operation of mobile crane	Yes	Severe	Almost Certain	VH-1	Mobile Plant Pre-use Checklist; Mobile Crane/ Boom Pump Set Up; SWMS	SQE Manager		SWMS Field Assessment
	Failure of lifting and rigging equipment	Yes	Severe	Almost Certain	VH-1	Mobile Plant Pre-use Checklist; SWMS	SQE Manager		SWMS Field Assessment
	Uncontrolled movement of Plant / Vehicles	Yes	Severe	Almost Certain	VH-1	SWMS - Identify spotter; Onsite Movement Plan - Exclusion zones, traffic routes, plant/vehicle/worker interactions. Toolbox and Pre Start Meetings shall be used to communicate activities. Weekly SQE Inspection	SQE Manager		SWMS Field Assessment

Activity	Potential Hazard	Is this a Potential Hazard?	Risk Assessment			Action to Control Potential Hazard	Task Responsibility	HCA Sign Off	Monitoring
		Y/N	Consequence	Likelihood	Risk Score				
	Unauthorised use of mobile plant	Yes	Severe	Almost Certain	VH-1	Mobile Plant Pre-use Checklist; Tower Crane Checklist (section 3) evidence of plant operator licencing, training or competence. Technical Guidance Note - Verification of Mobile Plant Operator Competency for competency requirements; SWMS Where plant is to be stored on site it must be stored in a manner that is safe and where improper / unauthorised use can not occur.	SQE Manager		SWMS Field Assessment
	Failure of unmaintained mobile plant	Yes	Severe	Almost Certain	VH-1	Mobile Plant Pre-use Checklist; Plant Register, Weekly SQE Inspection; SWMS The Mobile Plant Pre-Use Checklist and Tower Crane Checklist (section 3 - Commissioning) shall be used to manage a program of plant inspections and maintenance specific to the needs of each type of plant. Inspections shall be in accordance with regulatory inspections and registrations; manufacturers requirements, including pre-start inspections and commissioning prior to commencing on site.	SQE Manager		SWMS Field Assessment
	Incident involving mobile plant	Yes	Severe	Almost Certain	VH-1	Mobile Plant Pre-use Checklist To address safe systems of work. Includes Original Equipment Manufacturers (OEM) manuals, Plant Risk Assessments, site specific requirements and the need for ROP'S and FOPs. Plant Register, EMMP, (See Crush Injuries From Plant or Materials, Electrical or Services Damage, Plant Collision / Roll Over, Structural Collapse, Excavation Rescue), SWMS	SQE Manager		SWMS Field Assessment
Scaffold									
Scaffold Procedure	Uncontrolled erection of Scaffold	Yes	Severe	Almost Certain	VH-1	Scaffold > 4m Scaffold Workshop to develop safe systems of work for the erection, use and stripping of scaffolding >4m. SWMS Scaffold < 4m Scaffold Installation Logbook when assembling, dismantling and re-assembling fixed or mobile scaffolds where there is a risk of fall of < 4m the shall be completed. However if a Licensed Scaffoldier is conducting the works - inspection certificate and scaff tag is acceptable. SWMS	SQE Manager		SWMS Field Assessment
	Unauthorised design and erection of Scaffold	Yes	Severe	Almost Certain	VH-1	Scaffold > 4m Scaffold Workshop to address design requirements and develop safe systems of work for the erection, use and stripping of scaffolding >4m Scaffold drawing to be supplied and certified by a scaffold designer where a person or object can fall > 4m SWMS Scaffold < 4m Manufacturers design to be supplied for fixed or mobile scaffold where a person or object can fall <4m .SWMS	SQE Manager		SWMS Field Assessment
	Collapse / Failure of Scaffold	Yes	Severe	Almost Certain	VH-1	Scaffold > 4m Scaffold Workshop to develop safe systems of work for the erection and inspection of scaffolding > 4m, SMWS Scaffold < 4m Scaffold Installation Logbook when assembling, dismantling and re-assembling fixed or mobile scaffolds where there is a risk of fall of <4m. However if a Licensed Scaffoldier is conducting the works - inspection certificate and scaff tag is acceptable. SWMS	SQE Manager		SWMS Field Assessment
	Unauthorised / incorrect erection of Scaffold	Yes	Severe	Almost Certain	VH-1	Scaffold > 4m Scaffold Workshop to address inspector and installer requirements for the erection, use and stripping of scaffolding >4m Scaffold < 4m Scaffold Installation Logbook for fixed or mobile scaffold where a person or object can fall < 4m shall be completed. However if a Licensed Scaffoldier is conducting the works - the inspection certificate and scaff tag for the scaffold is acceptable. SWMS	SQE Manager		SWMS Field Assessment
	Incident involving scaffold work / scaffold failure	Yes	Severe	Almost Certain	VH-1	EMMP Standing Orders (See Crush Injuries from Plant or Materials, Severe Weather, Structure Collapse, Electric Shock), SWMS	SQE Manager		SWMS Field Assessment
Tilt-up/Precast Concrete									
Tilt-up/Precast Concrete Procedure	Unauthorised design and erection of Tilt up / pre cast concrete.	Yes	Severe	Almost Certain	VH-1	Tilt-up / Precast Workshop with the relevant Tilt-up/Precast contractor prior to activities commencing on site. SWMS	SQE Manager		SWMS Field Assessment
	Uncontrolled erection of Tilt up / pre cast concrete	Yes	Severe	Almost Certain	VH-1	Tilt-up / Precast Workshop with the relevant Tilt-up/Precast contractor prior to activities commencing on site. SWMS	SQE Manager		SWMS Field Assessment
	Panel and bracing failure due to impact	Yes	Severe	Almost Certain	VH-1	Risks associated with Tilt-up/ Precast Concrete activities are identified, assessed and controlled in accordance with the Compass Action Steps A Tilt-up / Precast Workshop shall be conducted with the relevant Tilt-up/Precast contractor prior to activities commencing on site. SWMS , onsite movement plans	SQE Manager		SWMS Field Assessment
	Panel and bracing failure	Yes	Severe	Almost Certain	VH-1	Tilt-up / Precast Workshop with the relevant Tilt-up/Precast contractor prior to activities commencing on site. SWMS Installation - The Contractor shall provide Hindmarsh with documented verification that Tilt-up/Precast panels have been installed in accordance with the requirements of the Design Plan. Ongoing Inspection - The Contractor shall provide Hindmarsh evidence of inspection of temporary bracings that have been conducted in accordance with the frequencies and requirements of the Design Plan. The Tilt-up/Precast Inspection Checklist may be used by the Contractor in the absence of any other safe system of work to verify the completion of the above inspections	SQE Manager		SWMS Field Assessment
	Incident involving Tiltup / precast	Yes	Severe	Almost Certain	VH-1	EMMP Standing Orders (See Structure Collapse, Crush Injuries from Plant or Materials, Electric Shock, Severe Weather), SWMS	SQE Manager		SWMS Field Assessment
Traffic									
Traffic Management Procedure	Unplanned / Unauthorised Traffic Control.	Yes	Severe	Almost Certain	VH-1	Traffic Management Plan (Hindmarsh Temporary Traffic Management Plan in the absence of Subcontractor Plan), Regulatory approvals.	SQE Manager		SWMS Field Assessment
	Uncontrolled Traffic Management	Yes	Severe	Almost Certain	VH-1	Traffic Management Plan, Traffic Management Inspections (Hindmarsh Traffic Management Inspection in the absence of Subcontractor inspections),	SQE Manager		SWMS Field Assessment
	Unauthorised Traffic Controllers	Yes	Severe	Almost Certain	VH-1	Site Induction, SWMS , Regulatory recognised training - e.g.Traffic Control Using Stop/Slow Bat; Introduction to Traffic Control of Roadwork's; Traffic Control Worksite Planning; Design and Audit Traffic Control Plans.	SQE Manager		SWMS Field Assessment
	Failure or absence of Traffic Management Controls	Yes	Severe	Almost Certain	VH-1	Traffic Management Plan, Traffic Management Inspections (Hindmarsh Traffic Management Inspection in the absence of Subcontractor inspections),	SQE Manager		SWMS Field Assessment
	Incident involving Traffic	Yes	Severe	Almost Certain	VH-1	Traffic Management Plan, SWMS, On-Site Movement Plan EMMP Standing Orders (See Plant Collision / Roll over).	SQE Manager		SWMS Field Assessment
Working at Heights									

Activity	Potential Hazard	Is this a Potential Hazard?	Risk Assessment			Action to Control Potential Hazard	Task Responsibility	HCA Sign Off	Monitoring
		Y/N	Consequence	Likelihood	Risk Score				
Working at Heights Procedure	People falling from heights	Yes	Severe	Almost Certain	VH-1	A Harness Permit and SWMS shall only be permitted for the use of Fall Restraint/Fall arrest equipment if the following controls are not reasonably practicable: 1 - the task can be performed on the ground such as pre fabrication or use of extension poles; 2 - the use of scaffold can be utilised to complete the designated task; 3 - An EWP can be used and safely positioned to complete the task; and 4 - Another work positioning system (E.g. Man box, Swinging Stage) can be used and safely positioned to complete the task. SWMS, Harness Permit	SQE Manager		SWMS Field Assessment
	Falling objects	Yes	Severe	Almost Certain	VH-1	Safe systems of work to be documented per the Hierarchy of Controls as follows to prevent falling objects: 1 - Temporary protective structure e.g. Hoarding Nets/Catch Deck 2 - Exclusion zones 3 - PPE e.g. Lanyards, tool buckets SWMS, Harness Permit	SQE Manager		SWMS Field Assessment
	Failure of fall prevention systems / structures	Yes	Severe	Almost Certain	VH-1	SWMS, Harness Permit, installation and inspection schedules and records.	SQE Manager		SWMS Field Assessment
	Incorrect use of fall restraint/arrest equipment	Yes	Severe	Almost Certain	VH-1	SWMS, Harness Permit, Training, installation, maintenance and inspection schedules and records.	SQE Manager		SWMS Field Assessment
	Working from A-Frame / rung Ladders	Yes	Severe	Almost Certain	VH-1	Where Scaffolds, EWPS, Platform Ladders or Trestles cannot be used, safe systems of work shall be provided to address the hazards and controls relating to working from a ladder (eg SWMS, Risk Assessment, standard operating procedure)	SQE Manager		SWMS Field Assessment
	Unsafe access and egress when working at heights	Yes	Severe	Almost Certain	VH-1	Where access and egress cannot be managed by Demolition, Excavation, Formwork or Scaffold procedures the following safe systems of work shall apply to provide safe access and egress from heights: - Minimum of 2 x scaffold stair access will be provided to all working deck levels while scaffold is present on site - Once available, internal stairs shall be utilised. - A personnel / materials hoist will be installed once the building reaches level 4 SWMS	SQE Manager		SWMS Field Assessment
	Incidents due to working at heights	Yes	Severe	Almost Certain	VH-1	EMMP Standing Orders (See Safety Harness Rescue, Structure Collapse), SWMS	SQE Manager		SWMS Field Assessment
Design									
Design Procedure	Construction buildability hazards not identified during design planning	Yes	Severe	Almost Certain	VH-1	Review client/designer/ other third-party supplied Design Risk Assessment. If not available, complete the Safety in Design Risk Profile . Transfer outstanding buildability hazards to this Project Risk Assessment.	SQE Manager		SWMS Field Assessment
	Changes in Design	Yes	Severe	Almost Certain	VH-1	Changes in design are documented on and communicated via the Design Change Authority after being risk assessed.	SQE Manager		SWMS Field Assessment
	Changes to design unknown	Yes	Severe	Almost Certain	VH-1	New hazards and changes to documented hazard controls shall be communicated via Design Change Authority	SQE Manager		SWMS Field Assessment
Work Environment									
	Trades working close to others and being unaware of identified hazards	Yes	Severe	Almost Certain	VH-1	SWMS to consider to immediate work area to ensure other trades. Pre Start Meetings to communicate project activities.	SQE Manager		SWMS Field Assessment
	Dust	Yes	Severe	Almost Certain	VH-1	Engage suitable consultants, SWMS, Dust EIG . Pre Start Meetings to communicate project activities.	SQE Manager		SWMS Field Assessment
	Noise	Yes	Severe	Almost Certain	VH-1	Engage suitable consultants, SWMS, Noise EIG . Pre Start Meetings to communicate project activities.	SQE Manager		SWMS Field Assessment
	Vibration	Yes	Severe	Almost Certain	VH-1	Engage suitable consultants, SWMS, Vibration EIG . Pre Start Meetings to communicate project activities.	SQE Manager		SWMS Field Assessment
	Identify project specific hazards here	Yes	Severe	Almost Certain	VH-1	Identify project specific controls here to reduce the potential hazard as low as reasonably practicable	SQE Manager		SWMS Field Assessment
Site Security									
	Injury to public due to unauthorised entry	Yes	Severe	Almost Certain	VH-1	HCA to erect 1800mm high fencing around the site perimeter to prevent unauthorised entry; Statutory safety signage to be erected around the project and at all entry gates to site. Standard signage. Do Not Enter Authorised Personnel Only, All Visitors to report to Site Office, Hindmarsh standard Signage to be erected. 24hr emergency contact details should be posted at site entry points as per COP for construction.	SQE Manager		SWMS Field Assessment
	Entry not secure	Yes	Severe	Almost Certain	VH-1	HCA to ensure that the site entry gates within the project are locked when ever the site is unattended. Site gates to be shut at all times unless manned to prevent unauthorized entry on to site.	SQE Manager		SWMS Field Assessment
	Absence of Entry and Exit Lighting	Yes	Severe	Almost Certain	VH-1	As per AS 3012 General minimum lighting 40 lux for walk ways and luminaires protected from mechanical damage, Installed where required emergency lighting sufficient to 20 lux.	SQE Manager		SWMS Field Assessment
	Emergency Lighting	Yes	Severe	Almost Certain	VH-1	AS/NZS3012 Electrical installations on construction sites and demolition sites, clause 2.7.3, sets out that a minimum light level of 20 lx be provided for a minimum of one hour following the loss of normal lighting on sites where natural lighting is insufficient.	SQE Manager		SWMS Field Assessment

Activity	Potential Hazard	Is this a Potential Hazard?	Risk Assessment			Action to Control Potential Hazard	Task Responsibility	HCA Sign Off	Monitoring
		Y/N	Consequence	Likelihood	Risk Score				
	Identify project specific hazards here	Yes	Severe	Almost Certain	VH-1	Identify project specific controls here to reduce the potential hazard as low as reasonably practicable		SQE Manager	SWMS Field Assessment
Manual Handling									
	Injury	Yes	Severe	Almost Certain	VH-1	Manual Handling Training / SWMS		SQE Manager	SWMS Field Assessment
	Mechanical Lifting and Handling	Yes	Severe	Almost Certain	VH-1	Horizontal and vertical movements by subcontractors according to SWMS or risk assessment		SQE Manager	SWMS Field Assessment
	Identify project specific hazards here	Yes	Severe	Almost Certain	VH-1	Identify project specific controls here to reduce the potential hazard as low as reasonably practicable		SQE Manager	SWMS Field Assessment
Potential Emergencies	This includes project specific potential emergencies that are outside the standard HRCW Activity controls.								

Project Name:

Developed & Assessed By:

POTENTIAL HAZARD IMPACTING OTHER ENTITY - as determined by consultation

		Client / Other Entity Impacted							Can the Hazard Be:				RESPONSIBILITY										
HAZARD		CLIENT NEIGHBOURS (business / residents) MEMBERS OF PUBLIC OTHERS (specify)																					
CRITICAL NOTE - Do not duplicate hazards as identified on Tab 3 (eg public protection, site security). These hazards are standard and controls implemented inherently protect client / other entities.																							
Record here additional hazard as identified via consultation which are not already addressed by Tab 3.						RISK ASSESSMENT		Risk Score		ELIMINATED		SUBSTITUTED		ISOLATED		ENGINEERED		Action to Reduce / Control Risk Nominated controls below MUST be developed by applying Heirachy of Control: 1. Elimination, 2. Substitution, 3.Isolation, 4. Engineer, 5. Administrative, 6. PPE)			Task Responsnibility	HCA Sign Off	Monitoring
RISK						Consequence	Likelihood																
Interruption to existing electrical supply example		Y Y Y Y				Severe	Almost Certain	VH-1	Y	Y	Y	Y								Hindmarsh	SQE Manager	SWMS Field Assessment	
construction near power generating infrastructures e.g substation, railway electrical infrastructure example		Y Y Y Y				Severe	Almost Certain	VH-1	Y	Y	Y	Y								Hindmarsh	SQE Manager	SWMS Field Assessment	
Bus Stop outside site example		Y Y Y Y				Severe	Almost Certain	VH-1	Y	Y	Y	Y								Hindmarsh	SQE Manager	SWMS Field Assessment	

Project Name: **Jerrabomberra High School**

 Developed & Assessed By: Nick Valois
 Reviewed & Approved By: Dennis Van Raalte

Environmental Risk Assessment

Aspect	Impact	Is this a Potential Impact?	Risk Assessment			Action to Control Potential Impact	Task Responsibility	HCA Sign Off	Monitoring
		Y/N	Consequence	Likelihood	Risk Score				
Sediment and Erosion	Soil erosion	Yes	Severe	Almost Certain	VH-1	EIG002 - Disturbance Flora Fauna	SQE Manager		SWMS Field Assessment
	Sediment	Yes	Severe	Almost Certain	VH-1	EIG002 - Disturbance Flora Fauna	SQE Manager		SWMS Field Assessment
	Surface run off	Yes	Severe	Almost Certain	VH-1	EIG002 - Disturbance Flora Fauna	SQE Manager		SWMS Field Assessment
Flora and Fauna	Disturbance of flora and fauna	Yes	Severe	Almost Certain	VH-1	EIG002 - Disturbance Flora Fauna	SQE Manager		SWMS Field Assessment
	Disturbance of aquatic flora and fauna	Yes	Severe	Almost Certain	VH-1	EIG003 - Disturbance Aqua Flora and Fauna	SQE Manager		SWMS Field Assessment
	Spread of infectious plant, disease and/or weeds	Yes	Severe	Almost Certain	VH-1	EIG010 - Presence of Infectious Plant, Disease and/or Weeds	SQE Manager		SWMS Field Assessment
Emissions	Noise emissions	Yes	Severe	Almost Certain	VH-1	EIG004 - Noise Emissions	SQE Manager		SWMS Field Assessment
	Atmospheric emissions	Yes	Severe	Almost Certain	VH-1	EIG005 - Atmospheric Emissions	SQE Manager		SWMS Field Assessment
	Vibration	Yes	Severe	Almost Certain	VH-1	EIG006 - Vibration	SQE Manager		SWMS Field Assessment
Storage and Handling of Materials and Substances	Leaks / spillage of materials or substances	Yes	Severe	Almost Certain	VH-1	EIG007 - Storage, Maintenance, Refuel	SQE Manager		SWMS Field Assessment
	Leaks / spillage of hazardous materials or dangerous substances	Yes	Severe	Almost Certain	VH-1	EIG008 - Storage, Handling Hazardous / Dangerous Substances / Materials	SQE Manager		SWMS Field Assessment
	Contact with PCBs or contamination of surrounding soils and / or waterways by PCBs	Yes	Severe	Almost Certain	VH-1	EIG018 - PCB Management	SQE Manager		SWMS Field Assessment
Community	Negative social impact	Yes	Severe	Almost Certain	VH-1	EIG012 - Disturbance Cultural Heritage	SQE Manager		SWMS Field Assessment
	Disturbance of cultural or heritage items	Yes	Severe	Almost Certain	VH-1	EIG012 - Disturbance Cultural Heritage	SQE Manager		SWMS Field Assessment
	Negative visual impact	Yes	Severe	Almost Certain	VH-1	EIG014 - Visual Amenity	SQE Manager		SWMS Field Assessment
Land Contamination	Soil contamination in the vicinity of the site	Yes	Severe	Almost Certain	VH-1	EIG013 - Land Contamination	SQE Manager		SWMS Field Assessment
	Contamination due to acid sulphate soils	Yes	Severe	Almost Certain	VH-1	EIG016 - Acid Sulphate Soils	SQE Manager		SWMS Field Assessment
	Contamination of soils / water due to ballast	Yes	Severe	Almost Certain	VH-1	EIG017 - Ballast	SQE Manager		SWMS Field Assessment
Resource management	Energy consumption	Yes	Severe	Almost Certain	VH-1	EIG019 - Energy and/or Water Consumption	SQE Manager		SWMS Field Assessment
	Water consumption	Yes	Severe	Almost Certain	VH-1	EIG019 - Energy and/or Water Consumption	SQE Manager		SWMS Field Assessment
	Solid waste treatment	Yes	Severe	Almost Certain	VH-1	EIG011 - Solid and/or Liquid Waste Recycling	SQE Manager		SWMS Field Assessment
	Liquid waste treatment	Yes	Severe	Almost Certain	VH-1	EIG011 - Solid and/or Liquid Waste Recycling	SQE Manager		SWMS Field Assessment
Sensitive Site	Golden Sun Moth	yes	Severe	Almost Certain	VH-1	Follow CEMP unexpected finds protocol (16.7) and refer to EIG002 - Disturbance Flora Fauna			
	NA								
	NA								
	NA								
Potential Emergencies	This includes project specific potential emergencies that are outside the standard EIG controls								
	Major Chemical Spill	Yes	Severe	Almost Certain	VH-1	EIG018 - Polychlorinated Biphenyl Management	SQE Manager		SWMS Field Assessment
	Major Waterway Pollution	Yes	Severe	Almost Certain	VH-1	EIG013 - Land Contamination	SQE Manager		SWMS Field Assessment

APPENDIX E – Construction Traffic and Pedestrian Management Plan

Attached document - Appendix E 12548316 Jerrabomberra CTPMSP Rev 3

Condition	Document / Sub-Plan Reference		Document / Sub-Plan Reference
B14	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);	Section 1.1 , page 1
	(b)	be prepared in consultation with Council and TFNSW;	Section 1.1, page 1
	(c)	detail:	
	(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 2.4.1-3, page 8-9
	(ii)	measures to ensure the safety of vehicles and pedestrians accessing adjoining properties where shared vehicle and pedestrian access occurs;	Section 2.5, page 9
	(iii)	heavy vehicle routes, access and parking arrangements;	Section 2.2, page 5-7
	(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 2.7, page 10-13
	(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 2.7, page 10 point 3



New High School in Jerrabomberra

Preliminary Construction Traffic and Pedestrian Management Sub-Plan

Hindmarsh Construction

5 August 2022

Project name		New High in Jerrabomberra					
Document title		New High School in Jerrabomberra Preliminary Construction Traffic and Pedestrian Management Sub-Plan					
Project number		12548316					
File name		12548316 Jerrabomberra CTPMSP Rev A.docx					
Status Code	Revision	Author	Reviewer		Approved for issue		
			Name	Signature	Name	Signature	Date
S3	A	M Lucas	Jayne Akstein	On file	J Deng	On file	11/07/22
S4	1	M Lucas	Jayne Akstein	On file	J Deng	On file	11/07/22
S4	2	M Lucas	Jayne Akstein	On file	Jayne Akstein	On file	04/08/22

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1. Introduction

1.1 Conditions of consent

This Preliminary Construction Traffic and Pedestrian Management Sub-Plan (CTPMSP) has been prepared by GHD for the new school in Jerrabomberra to respond to a request for information from the Department of Planning Environment (DPE).

The requirements for the CTPMSP and the location of GHD's response within this plan are presented in Table 1.

Table 1 DPE Specifications

Specifications	Responses
<p>B14. 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:</p> <p>(a) be prepared by a suitably qualified and experienced person(s);</p> <p>(b) be prepared in consultation with Council and TfNSW;</p> <p>(c) detail:</p> <p>(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;</p> <p>(ii) measures to ensure the safety of vehicles and pedestrians accessing adjoining properties where shared vehicle and pedestrian access occurs;</p> <p>(iii) heavy vehicle routes, access and parking arrangements;</p> <p>(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</p> <p>(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).</p>	<p>(a) The CTPMSP has been prepared by qualified and experienced personnel. (Refer to Appendix A for GHD Staff CVs)</p> <p>(b) The CTPMSP has been developed in conjunction with QPRC and TfNSW. Consultation records are attached in Appendix B. Any updates (as required) will be incorporated in accordance with their feedback.</p> <p>(c)(i) Measures to support road safety and network efficiency during construction are detailed in Section 2.4.</p> <p>(ii) Potential impacts to adjoining properties are detailed in Section 2.5.</p> <p>(iii) Haulage routes to and from the site are detailed in 2.3</p> <p>(iv) Access and parking arrangements are detailed in Section 2.2 and Section 2.6.</p> <p>(v) The swept path drawings indicating construction vehicles can enter the site manoeuvre internally and exit in a forward direction are provided in Section 2.7.</p>

This Preliminary CTPMSP has been prepared by Mark Lucas. Mark is a Transport Planner with 15 years' experience who prepared the Transport Plan and Traffic Assessment for the new high school in Jerrabomberra.

The CTPMSP has been reviewed by Jayme Akstein and approved by Joanne Deng. Jayme is the Business Group Manager of the Sydney Traffic Engineering and Transport Planning Team. Joanne is a Traffic and Transport

Consultant with four years' experience and has completed the Prepare Work Zone Traffic Management Plan Course (RIISS00056).

The CV's of Mark Lucas and Joanne Deng are included in Appendix A.

A copy of this CTPMSP will be shared with key stakeholders (including TfNSW and Queanbeyan-Palerang Regional Council) for comment and discussion.

1.1 Proposal

The proposal generally includes the following works:

- Site preparation works, such as clearing and levelling, to accommodate the proposed buildings and play areas.
- Construction of a series of buildings up to three storeys, including administration/staff areas, library, hall and general learning spaces.
- Construction of new walkways, central plaza and outdoor games courts.
- Construction of a new at-grade car park.
- Associated site landscaping and open space.

The car park will be the first feature of the new high school that will be constructed.

The site plan for the new high school in Jerrabomberra is displayed in Figure 1.

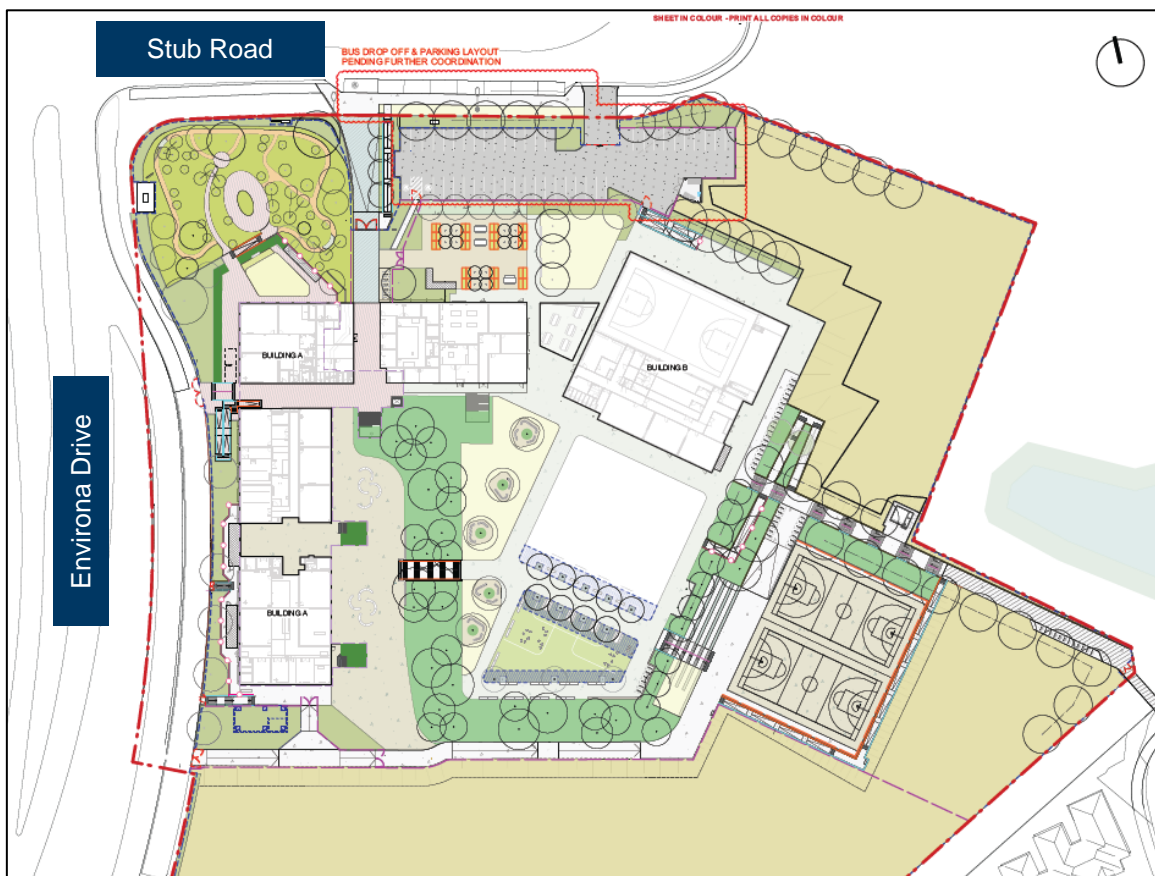


Figure 1 Site plan

Source: Hindmarsh modified by GHD

Vehicle access to the construction site will be provided from a stub road (cul-de-sac) that intersects Environa Drive at a priority-controlled junction.

The layout of the intersection of Environa Drive and 'Stub Road' is displayed in Figure 2 (image taken on 15th February 2022).



Figure 2 Intersection layout

Source: MetroMap modified by GHD

There will be no direct vehicle access/egress to and from the construction site via Environa Drive.

2. Construction outline

The construction of the new high school in Jerrabomberra is expected to commence in 2022 and be completed by 2023.

Traffic generated by construction activities for the project would include heavy vehicles associated with the construction plant, deliveries and removal of materials, along with light vehicles from construction workers.

The NSW Environmental Protection Authority, Draft Construction Noise Guidelines, details the recommended standard hours for construction works:

- Weekdays 7:00 am – 6:00 pm
- Saturdays 8:00 am – 1:00 pm
- Sundays and public holidays, no work.

The majority of construction works will be scheduled to occur during these standard hours. In any circumstances where out-of-hours work is required, approval will be sought from TfNSW.

2.1 Vehicle activity

2.1.1 Heavy vehicles

Preliminary estimates of the heavy vehicle activity associated with the construction of the new high school in Jerrabomberra are as follows:

- Cranes – likely to be required during the construction of the superstructure, approximately three cranes (of up to 60 tonnes) per week for a period of two months.
- Truck and dog trailer – likely to be required for the duration of the civil works, approximately four to six movements per day (inbound and outbound) for a period of two months.
- Material deliveries – likely to be multiple deliveries per day, in vehicles ranging from utes to pantechs.
- Waste – likely to be one movement every second day.

2.1.2 Light vehicles

It is expected that there will be a maximum workforce of approximately 120 workers.

As detailed in Section 2.2, temporary accommodation will be provided onsite for approximately 40 workers. Typically, up to 80 workers will access/egress the construction site.

The majority of workers are expected to reside in the nearby population centres of Queanbeyan and Canberra, offering opportunities for carpooling. For the purpose of analysis, it is assumed that there will be an occupancy rate of 1.5 workers per vehicle.

Application of this car driver rate to the assumed workforce yields a typical traffic generation in the order of 55 light vehicles per day, which are anticipated to access the subject site in the morning and depart the subject site in the afternoon/evening.

2.1.3 Oversize vehicles

At this stage of the project, details of the oversized vehicles required to transport equipment or plant to the site are not available. However, should oversized vehicles be required (i.e. lifts and pre-cast structures, crane erection), the Contractor will be required to apply for permits from Transport for NSW and Council, with the submission of suitable traffic management and transportation routes to be agreed, subject to the required size of the vehicle.

Oversize vehicle routes are to be carried out where possible on designated heavy vehicle routes or routes approved by Transport for NSW. Additionally, oversized traffic movements will be carried out, where possible, outside peak road network periods, thereby minimising the impacts on the road network.

2.2 Construction access

The overall construction access arrangement is detailed in Figure 3.

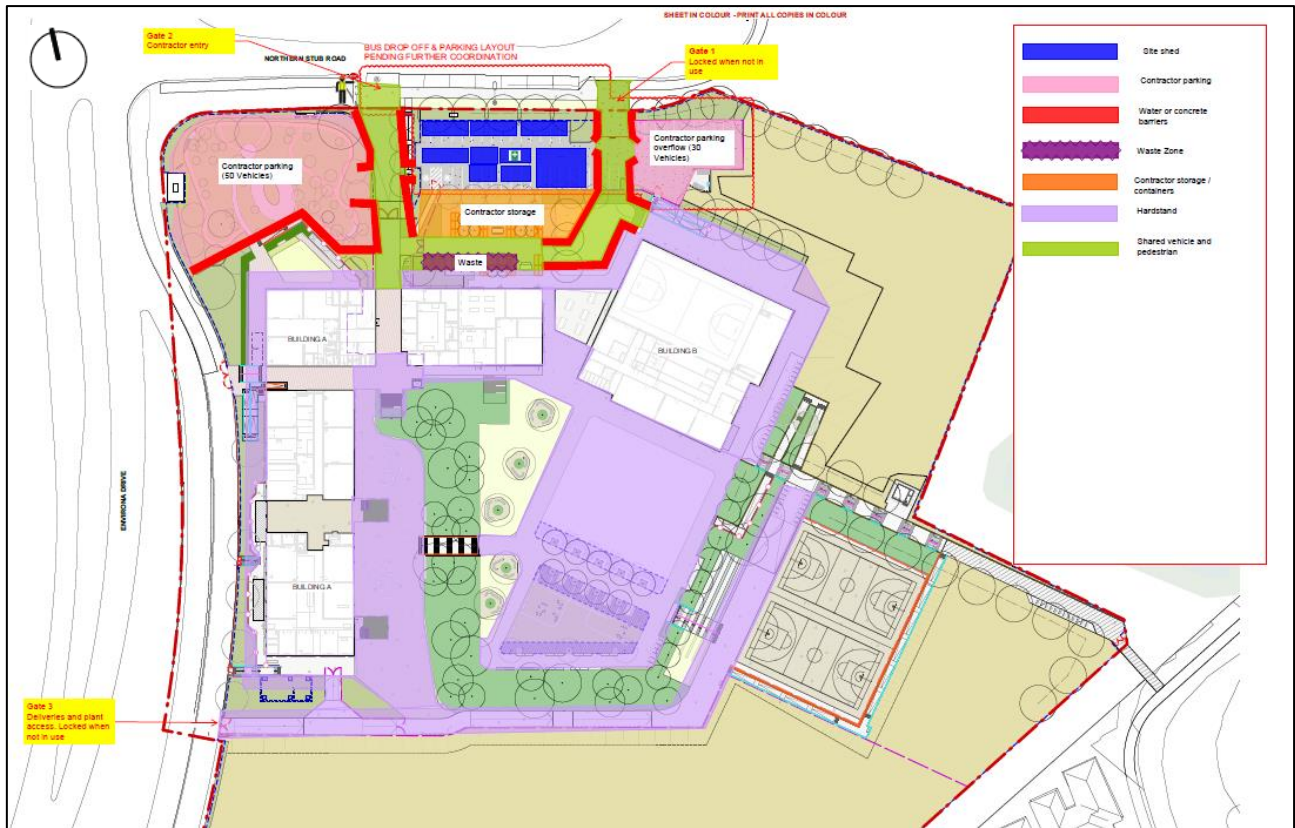


Figure 3 Construction access arrangement

Source: Hindmarsh

The primary construction compound will be set up within the new high school car park, as displayed in Figure 4.

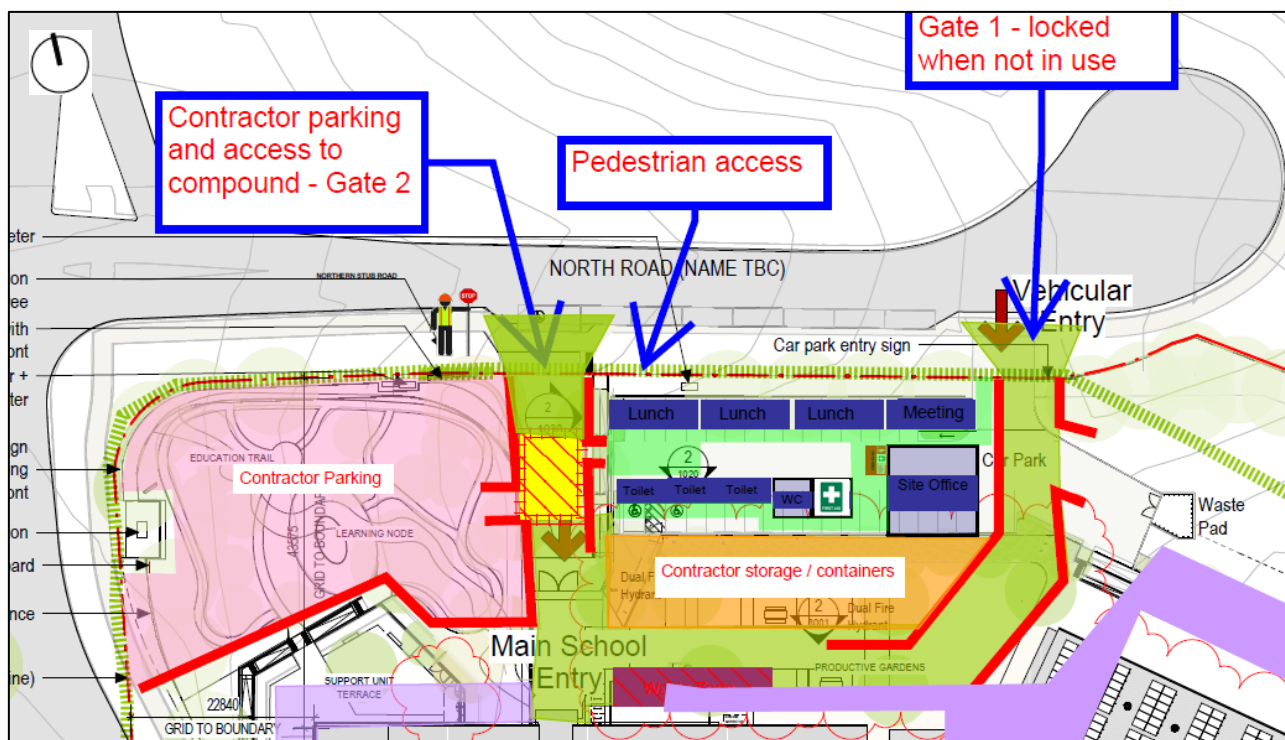


Figure 4 New high school in Jerrabomberra construction compound

Source: Hindmarsh

The following access arrangements will occur during the construction of the high school:

- All workers will access/egress the contractor car parking areas via Gate 2 on the stub road.
- Waste collection vehicles and delivery vehicles will enter the site via Gate 2, move through the site in an eastbound direction and exit the site via Gate 1.
- The majority of heavy vehicles will access/egress the site via Gate 2.
- Some heavy vehicles (including the cranes) will access and egress the site via Gate 3.

Gate 1 and Gate 3 will typically be locked when not in use. Any workers required to undertake works or traffic control shall be suitably trained and hold the required accreditation to carry out works on site and will also be site inducted. All traffic control personnel will be required to hold TfNSW accreditation in accordance with the TfNSW TCAWS manual.

An accredited traffic controller will be located on the stub road to manage the movement of vehicles.

There will be negligible connectivity for heavy vehicles between Gate 2 and Gate 3. Typically heavy vehicles will egress the construction site via the gate they entered it from.

2.3 Haulage routes

The TfNSW Restricted Access Vehicle (RAV) map identifies Lanyon Drive, and Tomsitt Drive as being authorised to accommodate vehicles up the size of 19 m B-double vehicles, as displayed in Figure 5.

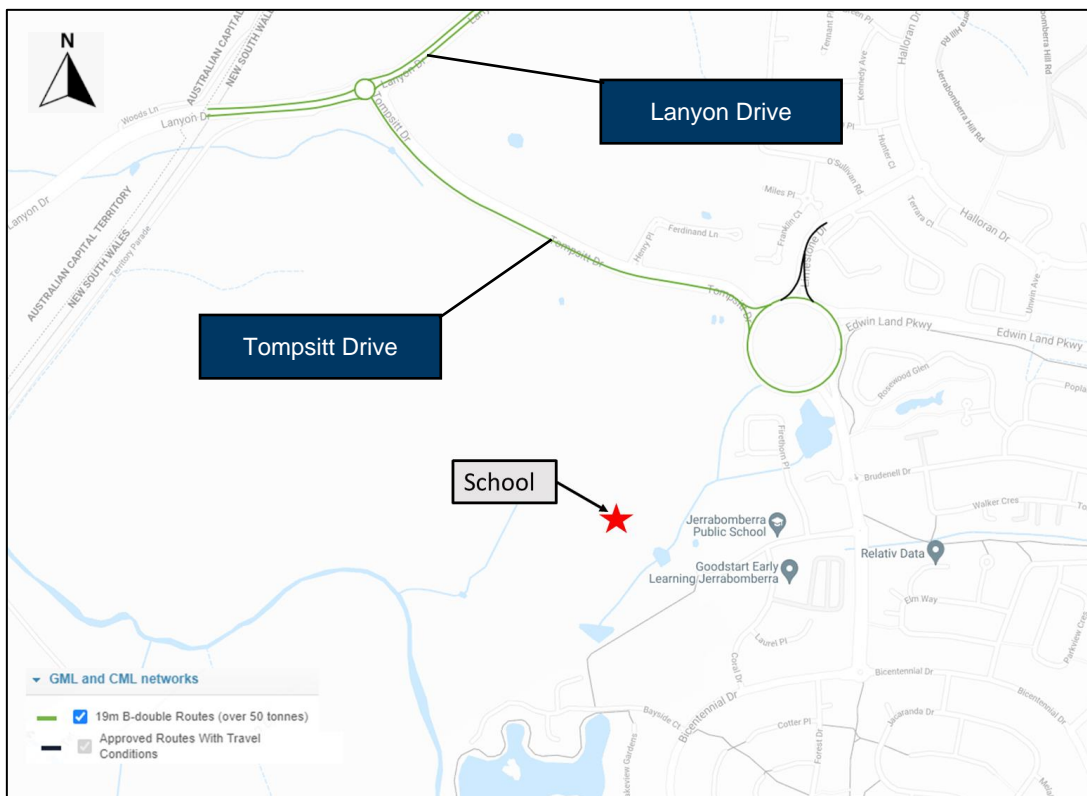


Figure 5 Restricted Access Vehicle (RAV) maps – 19 m B-double (NSW)

Source: <https://roads-waterways.transport.nsw.gov.au/business-industry/heavy-vehicles/maps/restricted-access-vehicles-map/map/index.html>

The ACT Government identifies the Monaro Highway and Lanyon Drive as being authorised to accommodate truck and dog trailers and higher mass limit (HML) vehicles (refer to Figure 6).

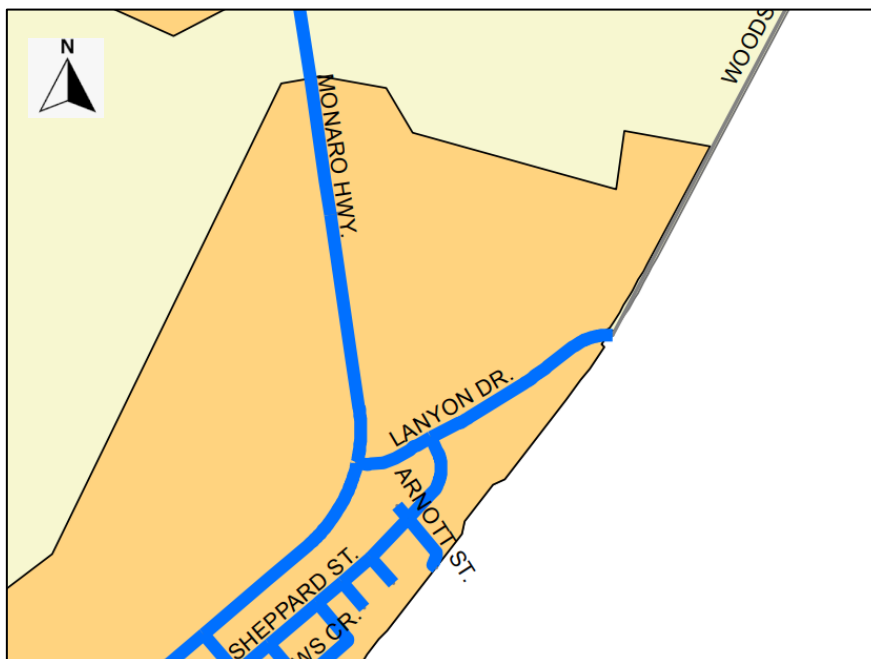


Figure 6 Truck and dog trailer and HML vehicle route

Source: <https://www.cityservices.act.gov.au/roads-and-paths/restricted-access-vehicle-networks>

It is expected that the majority of heavy vehicles and workers will access/egress the subject site to and from the nearby population/commercial centres of Queanbeyan and Canberra. The haulage route for the new high school in Jerrabomberra is displayed in Figure 7.

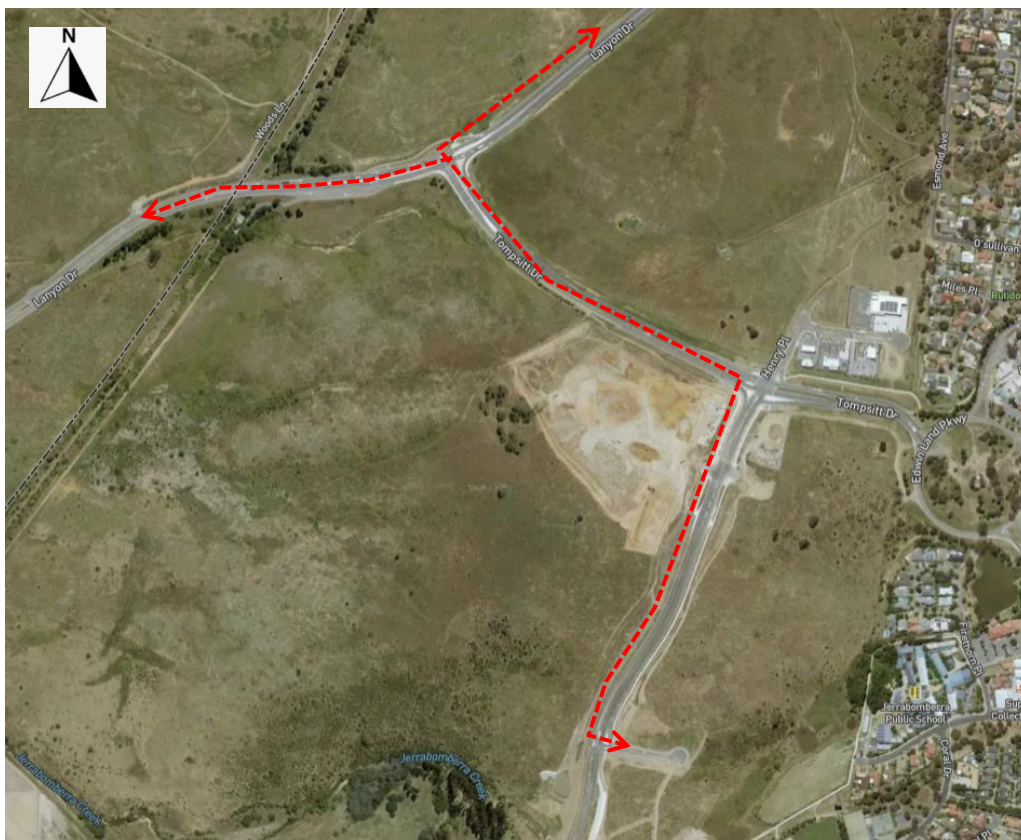


Figure 7 Haulage route

Source: MetroMap modified by GHD

In determining haulage routes during the construction of the new high school:

- The use of higher-order will be maximised.
- The use of local roads will be minimised.

Access and egress to the construction compound, including delivery and worker vehicles, will be provided via Enviroa Drive and stub road.

- All heavy vehicles will access the site from the north via Lanyon Drive and the signalised intersection of Tomsitt Drive and Enviroa Drive.
- All heavy vehicles will egress the site using the same roads towards Lanyon Drive.

As part of an induction, truck drivers will be informed of the designated haulage routes to and from the construction compound.

2.4 Road safety and network efficiency

2.4.1 General traffic

Enviroa Drive was recently constructed and opened to general traffic in 2021. While there is some construction activity associated with Poplars and South Jerrabomberra residential subdivision, the overall traffic volumes on Enviroa Drive during the construction of the new high school are expected to be minor.

Additionally, as there will be no direct vehicle access/egress to and from the construction site via Enviroa Drive, it is not expected that there will be any adverse impacts on the operation of Enviroa Drive during the construction of the high school.

The number of construction vehicles to access the site will need to be confirmed by the Contractor during the detailed construction planning stage. However, it is assumed that construction traffic volumes on the key roads included in the designated haulage route will be within typical daily traffic fluctuations¹ and will not adversely alter the operation of the existing road network condition. Furthermore, it is estimated construction activity will be less than the future operational activity of the developed site when the school becomes operational.

Notwithstanding the above, the Contractor will encourage carpooling for workers and maintain deliveries at staggered intervals and outside road network periods and incorporate them in the final Construction Traffic Management Plan.

Vehicles will be permitted to travel past the worksite on Environa Drive, with traffic signage in accordance with Traffic Guidance Schemes (TGSs) to be developed in accordance with Transport for NSW *Traffic Control at Works Sites Technical Manual* (TCAWS Version 6.1, 2022) and AS1742.3 – *Traffic Control for Works on Roads*. These will advise motorists of changes in the road network or vehicle movements to/from the site, including temporary roadwork speed limits or any “truck turning” activity.

The TGSs will need to be developed by the construction contractor as part of the final Construction Traffic and Pedestrian Management Plan (CTPMP) prior to commencing construction activity on the site. TGSs must be prepared by a certified professional, following TCAWS (2022). The Contractor will ensure all signage is erected in accordance with the TGSs and clearly visible. Each evening, upon completion of work, the Contractor will ensure signage is either covered or removed should such be required.

In the event of an emergency-related construction traffic incident on the public road network, it will be the responsibility of the Site Manager to ensure that emergency services are notified. The emergency services include but are not limited to:

- Fire
- Ambulance
- Police.

Phone “000” in cases of emergency.

If required, emergency services vehicles will access the car park or park on the roads adjacent to the subject site.

Furthermore, it is the responsibility of the Site Manager to advise the emergency services of any restriction of vehicular access to the public and private areas (1) one week prior to its implementation.

2.4.2 Pedestrians and cyclists

As the high school will not be operational and there are currently no other trip attractors in proximity to the school site, the volumes of pedestrians and cyclists on Environa Drive and the stub road are expected to be negligible during the construction period.

Traffic controllers will monitor the site during construction deliveries entering and exiting the site at each of the access/egress gates to ensure that people (including workers) in the vicinity of the site are protected from heavy vehicles movements into and out of the construction compound.

The final CTPMP incorporating the TGSs will need to be developed by the construction contractor and will need to consider the safe access for pedestrians and cyclists, which may include minor local diversion to alternate pedestrian and cycle facilities to avoid the construction works areas. Pedestrians and cyclists' paths of travel are to be free of trip hazards and debris to minimise the risk of injuries and will be monitored throughout the works.

2.4.3 Impacts on public transport

There are no bus routes or bus stops on Environa Drive. Accordingly, the construction vehicle activity associated with the new high school will not impact bus services in Jerrabomberra.

¹ Based on the current morning and afternoon peak hour vehicle volumes at the intersection of Tompsitt Drive and Henry Place (2,300 - 2,400 veh/h), the construction vehicle activity is expected to result in an increase of (approximately) four percent compared to the current situation.

2.5 Access to adjoining properties

There are no developments on the properties adjoining the high school site.

2.6 Construction parking

2.6.1 Heavy vehicles

Heavy vehicle activity, i.e. deliveries and waste collection, will occur within the construction compound.

Heavy vehicle arrivals will be coordinated to avoid queuing of vehicles outside the site as queuing of vehicles is not permitted on the public road network or in a position that will cause obstruction or safety issues to vehicles (or occupants), pedestrians or cyclists.

Vehicles are not to double park or queue to impact traffic and pedestrian thoroughfare and property access.

2.6.2 Light vehicles

As stated previously, up to 120 light vehicles are expected to access the construction compound per day. Assuming a car occupancy of 1.5 workers per vehicle (Section 2.1.2), a parking demand of up to 80 vehicles is expected.

As displayed in Figure 3, it is proposed to provide parking for up to 80 vehicles within the construction site, which will be suitable to accommodate the expected demand.

2.7 Swept path analysis

A high level swept path analysis has been undertaken for the movement of heavy vehicles, as follows:

- A waste collection vehicle (size 12.5 metre) entering the site via Gate 2 and exiting the site via Gate 1 (refer to Figure 8).
- A dog and truck trailer (25 metres) entering the site via Gate 2, travelling around Building B in a clockwise direction and exiting Gate 2 in a forward direction (refer to Figure 9)
- A dog and truck trailer (25 metres) and 60-tonne crane entering the site via Gate 3, manoeuvring through the site and exiting Gate 2 in a forward direction (refer to Figure 10 and Figure 11).

The design vehicles used in the swept paths were based on the 3rd Edition of the "Austroads Design Vehicles and Turning Path Templates". In addition, the 2019 Liebherr LTF 1060-4.1 was used as the design template for the 60t crane.

It is noted that for the majority of the construction period trucks from Gate 2 will be able to traverse the footprint of Building B. While trucks from Gate 3 will turn around in the area designated for basketball courts.

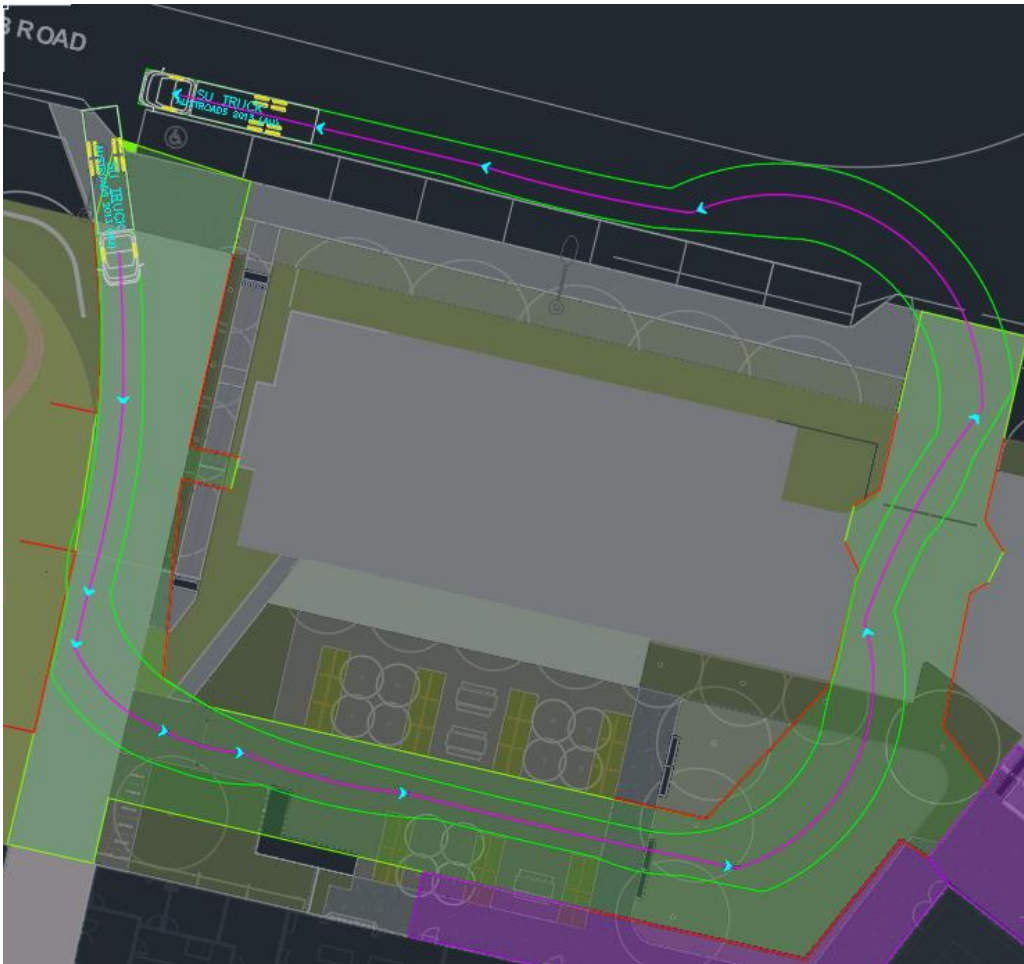


Figure 8 Waste collection vehicle

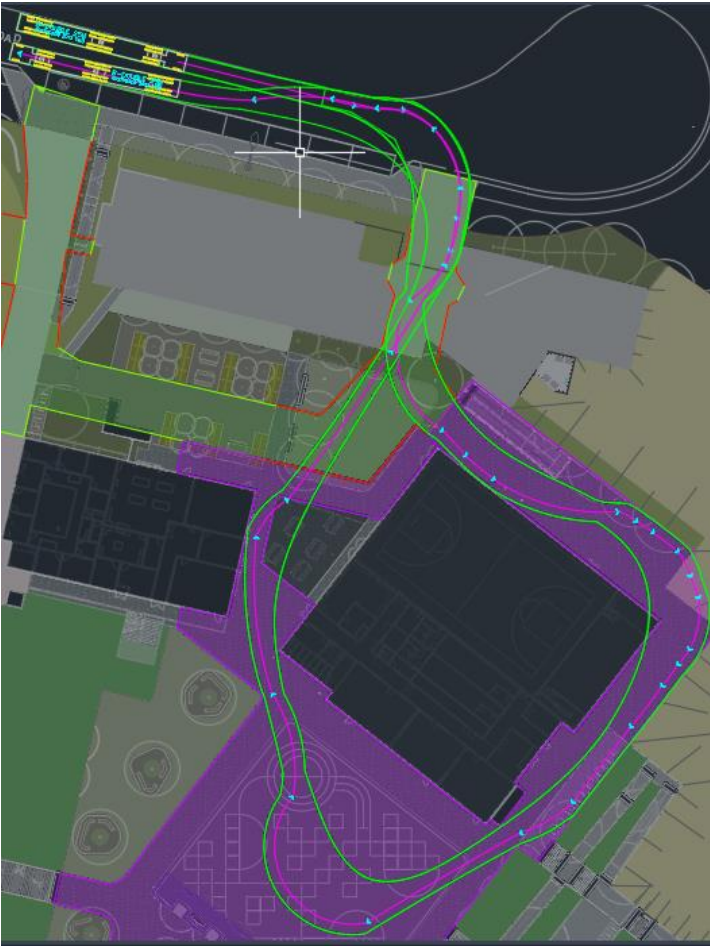


Figure 9 Dog and truck trailer – Gate 2

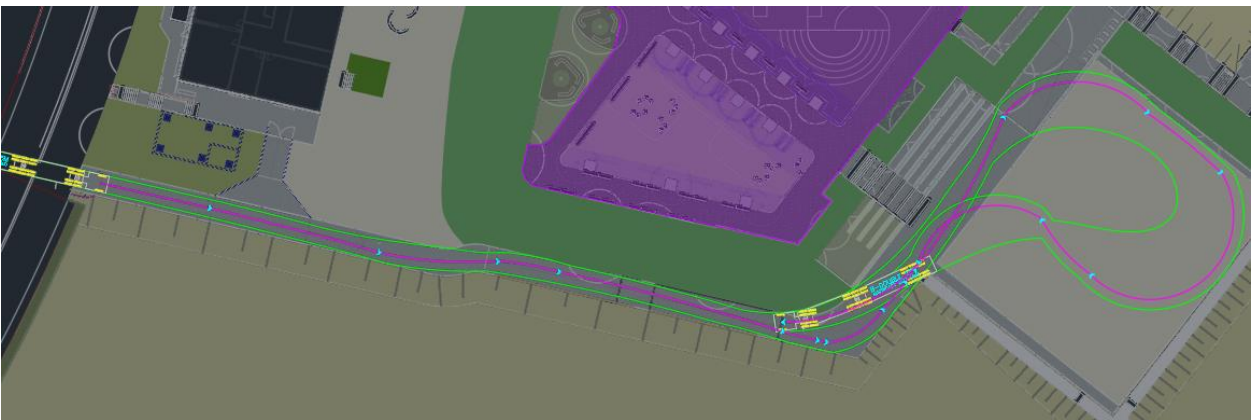


Figure 10 Dog and track trailer – Gate 3



Figure 11 60 tonne crane – Gate 3

Due to the physical space constraints, the swept path analysis for the 60 tonne crane indicates a reverse manoeuvre will occur within the school site. The final CTPMP will detail the extent of supervision by an accredited traffic controller required to support this manoeuvre.

3. Conclusion

This Preliminary Construction Traffic and Pedestrian Management Sub-Plan has been prepared for the new high school in Jerrabomberra outlining the management of construction vehicles, pedestrians and cyclists to assist in guiding future contractors in the overarching principles for the construction traffic management for the project.

A final CTPMP is to be developed by the engaged Contractor prior to construction commencement in consultation with governing authorities such as the local council, state road and transport authorities (where required).

It is expected that construction works will occur in a safe and efficient manner in accordance with the criteria identified in this report.

It is not expected that there will be any adverse impacts on the operation of Environa Drive during the construction of the high school.

Appendix A

GHD Staff CVs



Junyi Joanne Deng

BE (HONS) / BSc

Traffic and Transport Engineer



Location

Sydney, NSW, Australia

Experience

3 years

Qualifications/Accreditations

- RIIS00056 - Traffic Management Designer Skill Set, 2021:
 - RIIRIS402E- Carry out the risk management process
 - RIICWD503E- Prepare traffic management plans and traffic guidance schemes
- BE (Hons), University of NSW, 2019
- BSc, University of NSW, 2019

Key technical skills

- Data Analysis
- Traffic Engineering
- Communication
- Road Safety
- Transport Planning.

Memberships

- Roads Australia
- ITS Australia
- Engineers Australia
- EA Transport Australia Society

Relevant experience summary

Joanne has 3 years' experience in transportation consulting. She has an aptitude for data analysis and document review, which stem from her study in the fields of civil engineering and psychology. Joanne applies the skills and knowledge that she has accrued into real life projects and eagerly cultivates her technical knowledge and interpersonal skills. Her range of traffic and transport engineering experience includes appraising transport networks, examining potential impacts of construction activities and development across the different travel modes, conducting swept path analysis to determine locations where certain vehicle movements may conflict, preparing attractive visualisations to compliment key documentation and disseminating road safety communications. She also engages with fellow consultants and diverse audiences at local and state government levels and is familiar with NSW Government policies and Austroads guidance.

Project experience

Squadron Energy FEL3 Feasibility Study

Role: Traffic Management Plan Reviewer

Client: AIP

Location: Unanderra to Port Kembla, NSW, Australia

Date(s): Nov 2021 - Present

Joanne reviewed three Traffic Management Plans in line with TfNSW requirements as described in *Traffic Control at Work Sites Manual* (v6.0; TCAWS; TfNSW 2020). The TMPs generally contain detail on management of the TMP, traffic controller responsibilities, time management, and key contacts. During the review process, Joanne also cross-checks local information in proximity to the work zone, such as parking restrictions, pedestrian crossings, bus service frequency and bus stop locations.

Revesby Multi-Storey Upgrade and West Ryde At-Grade Upgrade | Commuter Car Park Program

Role: Traffic Engineer

Client: ADCO Constructions with TfNSW

Location: Revesby and West Ryde, NSW, Australia

Date(s): Mar 2021 - Nov 2021

Joanne prepared a Preliminary and Detailed Construction Traffic Management Plan for the upgrade works located within the existing Revesby Multi-Storey Commuter Car Park and West Ryde At-Grade Commuter Car Park. She also reviewed and liaised with a sub-consultant to prepare and update the initial Traffic Control Plan; then again with the site modified Traffic Guidance Schemes provided by ADCO. Joanne also conducted a high-level swept path analysis for a medium rigid vehicle, heavy rigid vehicles and semi-trailer to determine any issues with access during construction based on aerial imagery.

Various developments

Role: Traffic Engineer

Client: Various

Location: NSW, Australia

Date(s): 2017 - Present

Joanne has explored options for circulation movements to ensure the design and site layouts would minimise confusion to drivers and aid traffic flow throughout within the available space. She used AutoCAD and AutoTURN to undertake turn path analyses:

- ESQ Panthers Stages 4 and 5, Penrith (Turner Architects)
- Energy from Waste Facility, Marulan (Jerrara Power)
- Mixed Use on Forest Road, Hurstville (George El Khouri Architects)
- Chau Chak Wing Museum, Camperdown (University of Sydney)
- Resource Recovery Park, West Nowra (Bioelektra Australia)
- Charing Cross Streetscape, Waverley (Waverley Council)
- Macquarie University Bus Interchange, Ryde (Transport for NSW).

Toongabbie Urban Renewal Precinct Transport Study

Role: Transport Engineering Support

Client: Blacktown City Council

Location: Toongabbie, NSW, Australia

Date(s): 2021 - Present

Joanne has undertaken a desktop study and in-person site visit to evaluate the existing conditions with consideration of the movement network and place hierarchy within and proximal to the study area. This project complements Council's Master Plan and includes development of a Travel Demand Management Plan. Another key outcome of the transport study would be insights into potential initiatives and schemes that support the future urban renewal precinct.

Lighting Audit of Pedestrian Facilities

Role: Transport Engineering Support

Client: Ku-ring-gai Council

Location: Sydney, NSW, Australia

Date(s): 2020

Joanne undertook a desktop study to evaluate the existing condition of pedestrian facilities across the Ku-ring-gai Council local government area. She considered device type, nearby pedestrian crash history, nearest lighting distance, visibility of pavement markings and presence of potential hazards as inputs to an overall pedestrian safety assessment. This complements Council's prioritisation and schedule of lighting upgrades along key movement corridors.

Fernhill Estate Hayshed Gate

Role: Traffic Engineer

Client: DPIE

Location: Sydney, NSW, Australia

Date(s): 2020

Joanne carried out analyses on traffic survey data to inform DPIE's decision to extend the operating hours and visitors' window duration for Fernhill Estate. The data analysis focussed on the entry/exit point at Hayshed Gate and was presented alongside an initial road safety review.

Jordan Springs Public School Stage 1

Role: School Travel Coordinator

Client: School Infrastructure NSW, Department of Education and Training

Location: Jordan Springs, NSW, Australia

Date(s): Jul 2021 - Present

Joanne is working closely with the School Principal and key stakeholders to foster good road safety practices within the community. Joanne is also supporting initiatives that will promote active and sustainable ways for students when travelling to and from school. She holds ongoing co-design activities with the communications officer.

M1 Motorway Improvements (Stage 2)

Role: Transport Engineering Support

Client: Roads and Maritime Services

Location: NSW, Australia

Date(s): Nov 2017 - Mar 2018

Joanne provided technical support to undertake a Crash Reduction Assessment for a proposed design option of the Princes Highway, 100 metres South of Bellambi Creek to Bulli Tops. She analysed crash data (severity, type, direction) for the five year period between April 2012 and March 2017 to prepare a technical note. She also compared two different assessment approaches to estimate the percentage of crash reduction across the different options proposed.

Hobart CBD 30km/h speed limit reductions

Role: Transport Engineering Support

Client: Hobart City Council

Location: Hobart, TAS, Australia

Date(s): 2020

Joanne undertook a literature review around the safety impacts of applying reduced speed limits for vulnerable road users (i.e., cyclists, pedestrians, young children, and the elderly) along corridors with significant place function. She also assembled case studies across ANZ on current infrastructure initiatives to decrease injuries and fatalities associated with speed-related crashes. Joanne produced visuals showing the proposed speed changes in Hobart CBD.

Visit <https://www.hobartcity.com.au/Projects/Recently-completed-projects/Hobart-CBD-speed-limit-change-to-40kmh> for more information.



Choose an option...

Mark Lucas BAPPSc

Senior Transport Planner



Location

Sydney, NSW, Australia

Experience

16 years

Qualifications/Accreditations

- Bachelor of Applied Science (Geography Major), 2005

Key technical skills

- School Planning
- Movement and Place
- Transport Planning
- Traffic Impact Assessments
- Sustainable Transport

Memberships

- AITPM

Relevant experience summary

Mark is a transport planner with over 17 years' experience. He has worked extensively in Australia and the United Arab Emirates. Mark's experience is drawn from a broad range of transport planning projects including public transport corridor feasibility assessments, environmental impact assessments, master plan level traffic studies, active transport planning, parking, access and circulation studies, traffic impact assessments and traffic studies to support the upgrading of strategic road links. Mark has extensive experience undertaking planning for new and upgraded school throughout Sydney and NSW.

Carlingford and Epping Public Schools Traffic Impact Assessment

Role: Technical Lead

Client: Department of Education

Location: Sydney, NSW, Australia

Project value: \$80,000

Date(s): April 2018 – July 2018

Mark was the technical lead in the preparation of Traffic Assessments for the proposed expansion of Epping and Carlingford Public Schools. The scope of work included undertaking an extensive series of surveys (including an online survey completed by parents) to determine the current level of vehicular activity at the school and identify a per student trip rate. This was applied to the proposed increase in student population and the adjoining intersections were assessed using SIDRA software accounting for a ten year horizon

Bungendore and Jerrabomberra High School Traffic Assessment and Transport Plan

Role: Transport Planner and Project Manager

Client: Hindmarsh Constructions

Location: NSW, Australia

Project value: \$100,000

Date(s): June 2021 – ongoing

Mark completed the Transport Plans and Transport Assessments for new high schools in Jerrabomberra and Bungendore in accordance with the new School Infrastructure Guidelines and SEARs. The Transport Assessment identifies the existing transport policies, networks and operations and agency interfaces required to meet school travel demand. Additionally, it set the base case for student travel demand based upon catchment analysis), identified potential transport impacts of the school proposal and propose solutions to mitigate identified impacts. The Transport Plan was prepared to manage travel demand during school operation. It identified policies, operations and programs to respond to the Transport Assessments findings.

Googong, Murrumbateman and Jerrabomberra Primary Schools, Rapid Assessment (RTA)

Role: Traffic Assessment
Client: Department of Education
Location: Sydney, NSW, Australia
Project value: \$70,000
Date(s): May 2019 – February 2020

Mark completed RTAs for Googong, Murrumbateman and Jerrabomberra Primary Schools. The assessments used depersonalised household data to determine the portion of students within walking and cycling catchments. This data was used to identify issues impacting sustainable access (walking and cycling) to the school and opportunities to address these issues and encourage the use of active transport by students.

North Kellyville, Marsden Park and Waitara Operational, Transport and Access Management Plan (OTAMP)

Role: Transport Planner
Client: ADCO
Location: Sydney, NSW, Australia
Project value: \$40,000
Date(s): June 2019 – June 2020

Mark completed the OTAMP for new schools in North Kellyville, Marsden Park and Waitara. As part of these assessments, Mark undertook a detailed of the school's parking, access and pick-up/drop-off facilities in accordance with transport planning/traffic engineering principles and Australian Standards and Guidelines. This included the identification of safe route options to identify the need for management measures to ensure students and staff are able to access and leave the site in a safe and efficient manner.

Secondment at Lake Macquarie Council

Role: Secondment
Client: Lake Macquarie Council
Location: Lake Macquarie, NSW, Australia
Project value: N/A
Date(s): February 2018 – July 2018

Mark completed a seven month secondment at Lake Macquarie Council. Key tasks during the secondment included reviewing development applications for a wide range of land uses, providing input into strategic planning documents (including Section 94 studies), undertaking traffic modelling on the local road networks and the provision of ad-hoc transport planning/traffic engineering advice to council staff.

Mangoola Coal Mine Traffic Assessment

Role: Traffic Assessment
Client: Umwelt
Location: Hunter Valley, NSW, Australia
Project value: \$25,000
Date(s): November 2020 – February 2021

Mark completed a traffic assessment to support a seven year extension to the mine life of the Mangoola Coal Mine, in accordance with SEARs issued by the RMS. The scope of works included SIDRA analysis at multiple intersections in proximity to the mine, accounting for the expected construction and operational traffic volumes.

Lowes Creek Traffic and Transport Study

Role: Project Manager & Technical Writer
Client: MacArthur Developments
Location: Western Sydney, NSW, Australia
Project value: \$150,000
Date(s): May 2019 – June 2020

Mark was the Project Manager and Technical Writer for the Lowes Creek Traffic and Transport Study. The purpose of the study was to provide an integrated approach to determining the optimal mix of land uses and density concentrations as a means of minimising (where possible) trip generation and transport-related demand. The study accounted for the cumulative and regional traffic and transport impacts associated with the rezoning and general growth within the South West Growth Area. The study used a three-tiered modelling approach namely EMME, AIMSUN and SIDRA models.

Blue Mountains Integrated Transport Strategy

Role: Project Manager & Technical Lead
Client: Blue Mountains City Council
Location: Blue Mountains, NSW, Australia
Project value: \$120,000
Date(s): July 2017 – February 2018

Mark was Project Manager and Technical Lead for the Blue Mountains Integrated Transport Strategy 2025 (ITS) was designed to provide policies and actions that will guide the planning, investment and operation of the Blue Mountain City Council's traffic and transport infrastructure.

The scope of works completed by Mark included a movement and place assessment at key road in each of the Blue Mountains population centres and the identification of strategies to enhance the regions public transport networks.

Appendix B

Evidence of Consultation

Consultation Report			
SSD-24461956 - B14: Construction Traffic and Pedestrian Management Sub-Plan			
	<i>The Construction Traffic and Pedestrian Management Sub-Plan (CTPMSP) must be prepared to achieve the objective of ensuring safety and efficiency of the road network and address, but not be limited to, the following</i>		
	<i>(b): be prepared in consultation with Council and TfNSW;</i>		
Date	Description	Content	Action
3/08/2022	Documentation sent to QPRC and TfNSW for review	-	-
3/08/2022	Email received from TfNSW	TfNSW confirmed they will review and provide comments	Await further comments
5/08/2022	Email received from QPRC	Comments provided	Comments to be incorporated into Sub-plan
5/08/2022	Email sent to TfNSW and QPRC	Response to comments received	
8/08/2022	Email sent to TfNSW and QPRC	Follow up on phonecall with TfNSW	
9/08/2022	Email received from TfNSW	Comments provided	Comments to be incorporated into Sub-plan

Emily Morrow

From: Andrew Lissenden <andrew.lissenden@transport.nsw.gov.au>
Sent: Wednesday, 3 August 2022 5:36 PM
To: Emily Morrow
Subject: RE: JHS: SSD Condition B14 - CTPMSP

Hi Emily,

Thanks for your email. TfNSW will review and provide comments.

Can any further emails please be sent to development.south@transport.nsw.gov.au.

Regards

Andrew Lissenden
Development Services, South
Regional and Outer Metropolitan
Transport for NSW

P 0418 962 703 E andrew.lissenden@transport.nsw.gov.au
transport.nsw.gov.au
Level 4, 90 Crown Street
Wollongong NSW 2500



Transport
for NSW

I work flexibly. Unless it suits you, I don't expect you to read or respond to my emails outside of your normal work hours.

From: Emily Morrow <Emily.Morrow@hindmarsh.com.au>
Sent: Wednesday, 3 August 2022 5:31 PM
To: Derek Tooth <Derek.Tooth@qprc.nsw.gov.au>; Andrew Lissenden <andrew.lissenden@transport.nsw.gov.au>
Cc: Stefan Szyzew <Stefan.Szyzew@hindmarsh.com.au>; Nick Valois <Nick.Valois@hindmarsh.com.au>
Subject: JHS: SSD Condition B14 - CTPMSP

CAUTION: This email is sent from an external source. Do not click any links or open attachments unless you recognise the sender and know the content is safe.

Hi Derek and Andrew,

As part of the SSD process and issue of the Crown Certificate for the New High School in Jerrabomberra, we are required to consult with Council and TfNSW with regards to preparation of the Construction Traffic and Pedestrian Management Sub-Plan (CTPMSP).

Please see attached a copy of our proposed Sub-Plan.

Would it be possible to arrange a short meeting with you both over the coming week to discuss?

Many thanks,
Emily



Emily Morrow

Design Manager
M 0436 911 399

F 02 6247 8898

Level 27, 100 Miller St, North Sydney NSW 2060 Australia

emily.morrow@hindmarsh.com.au

www.hindmarsh.com.au



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OFFICIAL

Emily Morrow

From: Derek Tooth <Derek.Tooth@qprc.nsw.gov.au>
Sent: Friday, 5 August 2022 2:45 PM
To: Emily Morrow; Andrew Lissenden; development.southern@rms.nsw.gov.au
Cc: Stefan Szyzew; Nick Valois
Subject: RE: JHS: SSD Condition B14 - CTPMSP

Hi Emily

My comments

3.5 Remove reference to the TMC that is a TfNSW asset that doesn't deal with Council roads (with exception of signals)

APPENDIX C

1. If gate 2 is to be closed then there needs to be enough storage for the appropriate Heavy Vehicle
2. FOOTPATH CLOSED use other footpath should probably read FOOTPATH CLOSED follow detour
 - a. Where is the pedestrian detour ?
 - b. Noting the length of the closure, It needs to be on a concrete path built to disability access requirements
3. Need notes regarding exit from bus bay as left only
4. Move the end roadworks sign until after your Heavy Vehicles finish joining
5. Remove note (signs to be placed if southbound road open for traffic) – road is open all the time

Derek Tooth (he/him)
Service Manager - Contracts and Projects

Queanbeyan-Palerang Regional Council
Tel: [\(02\) 6285 6117](tel:0262856117) **Mob:** [0408 430 739](tel:0408430739)
Web: www.qprc.nsw.gov.au
Mail: PO Box 90 Queanbeyan NSW 2620



From: Emily Morrow <Emily.Morrow@hindmarsh.com.au>
Sent: Wednesday, 3 August 2022 5:31 PM
To: Derek Tooth <Derek.Tooth@qprc.nsw.gov.au>; Andrew Lissenden <andrew.lissenden@transport.nsw.gov.au>
Cc: Stefan Szyzew <Stefan.Szyzew@hindmarsh.com.au>; Nick Valois <Nick.Valois@hindmarsh.com.au>
Subject: JHS: SSD Condition B14 - CTPMSP

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Hi Derek and Andrew,

As part of the SSD process and issue of the Crown Certificate for the New High School in Jerrabomberra, we are required to consult with Council and TfNSW with regards to preparation of the Construction Traffic and Pedestrian Management Sub-Plan (CTPMSP).

Please see attached a copy of our proposed Sub-Plan.

Would it be possible to arrange a short meeting with you both over the coming week to discuss?

Many thanks,
Emily



Emily Morrow
Design Manager
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Emily Morrow

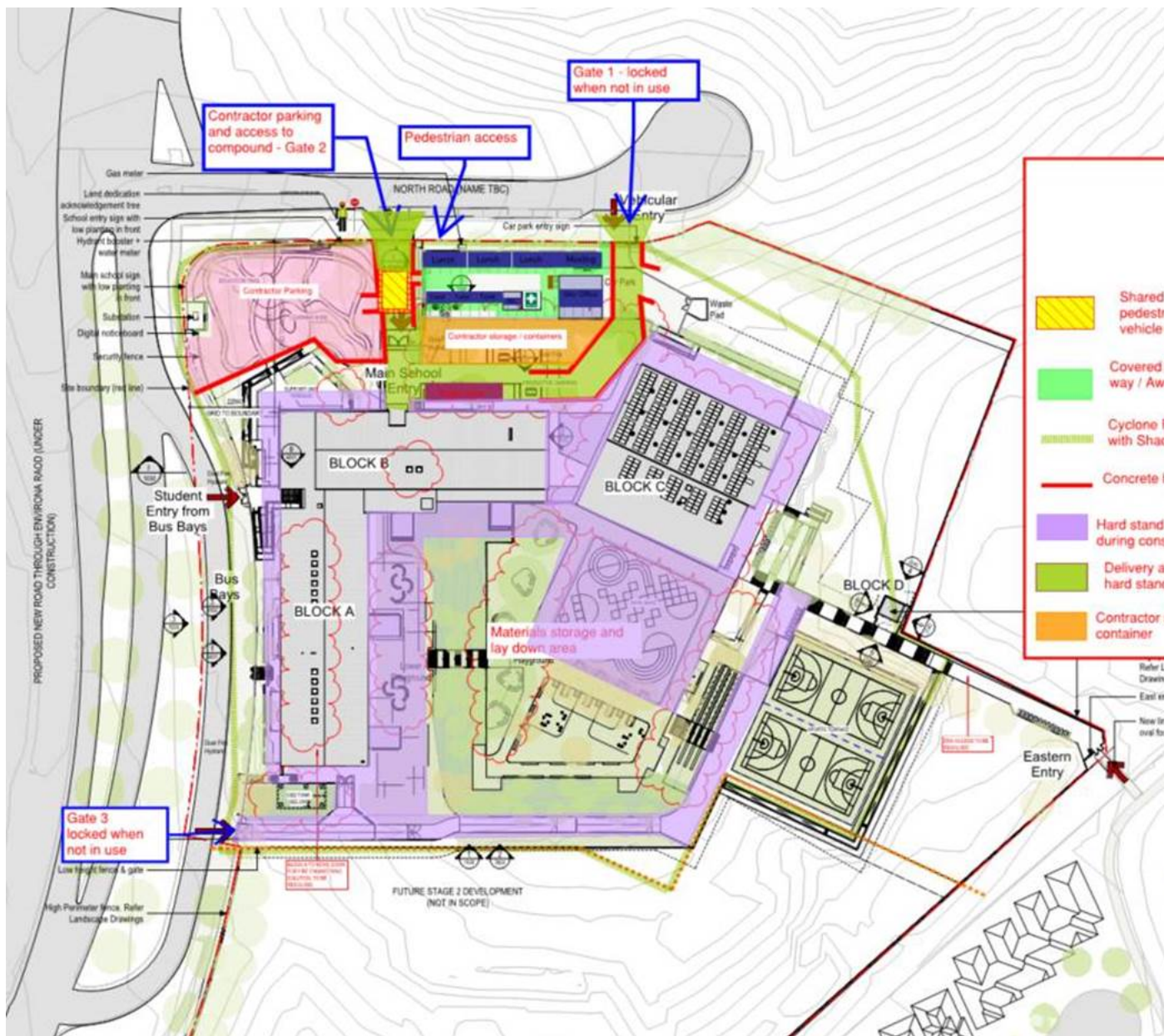
From: Emily Morrow
Sent: Friday, 5 August 2022 4:47 PM
To: Derek Tooth; Andrew Lissenden; development.southern@rms.nsw.gov.au
Cc: Stefan Szczew; Nick Valois; Robert McKnight; Mitchell Beattie
Subject: RE: JHS: SSD Condition B14 - CTPMSP
Attachments: Appendix E 12548316 Jerrabomberra CTPMSP Rev 3 - 5.8.22.pdf

Hi Derek and Andrew,

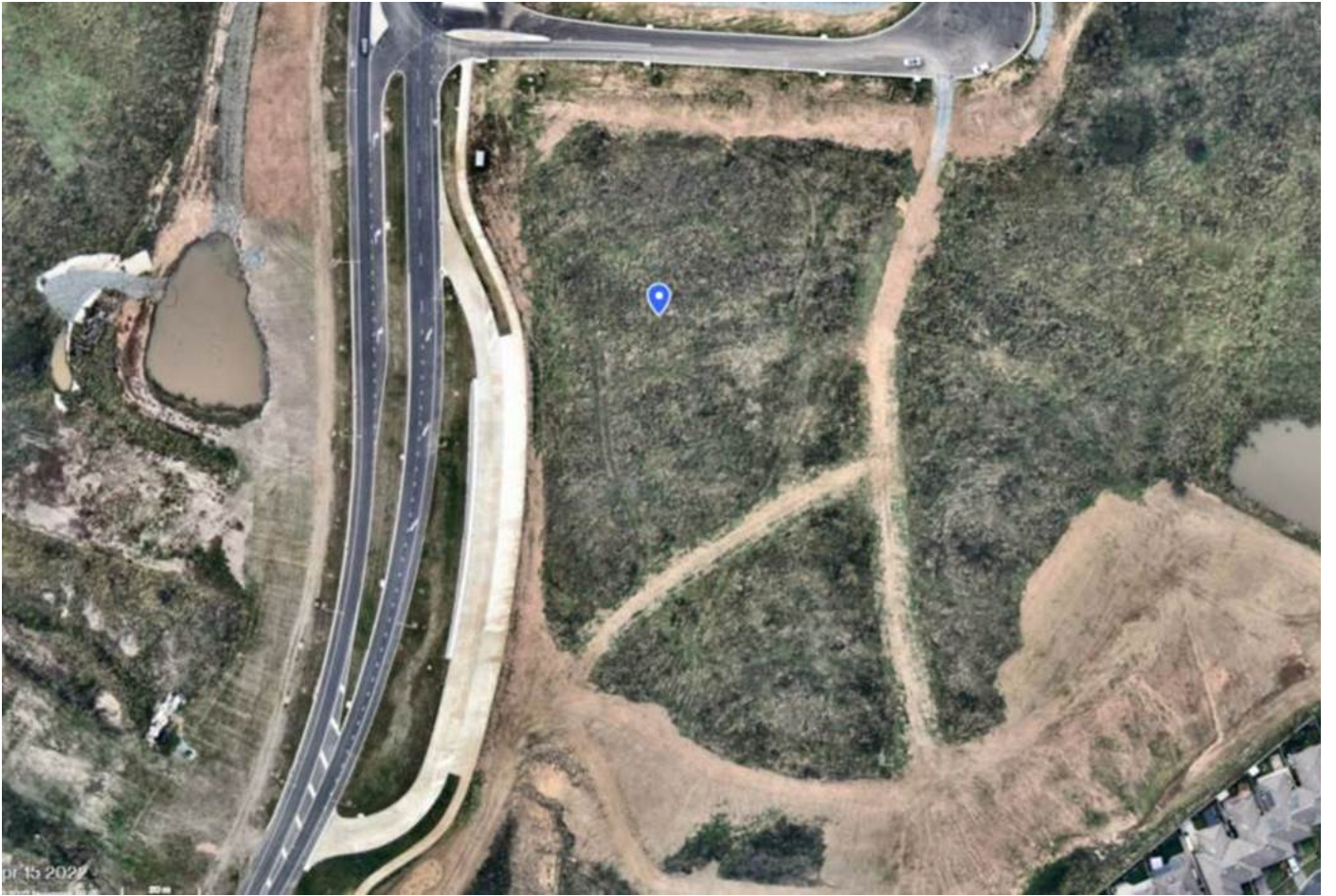
Please see response to your comments below in red.

Further to below, please see attached the Construction Traffic and Pedestrian Management Sub-Plan which addresses several of the comments below and includes swept path analysis and traffic impact assessment. Please let me know if you have any further comment.

In addition to comments below, please see evidence of changes below:
[Site establishment plan.](#)



Sat image showing completed bus lane



Additional scope – North stub road