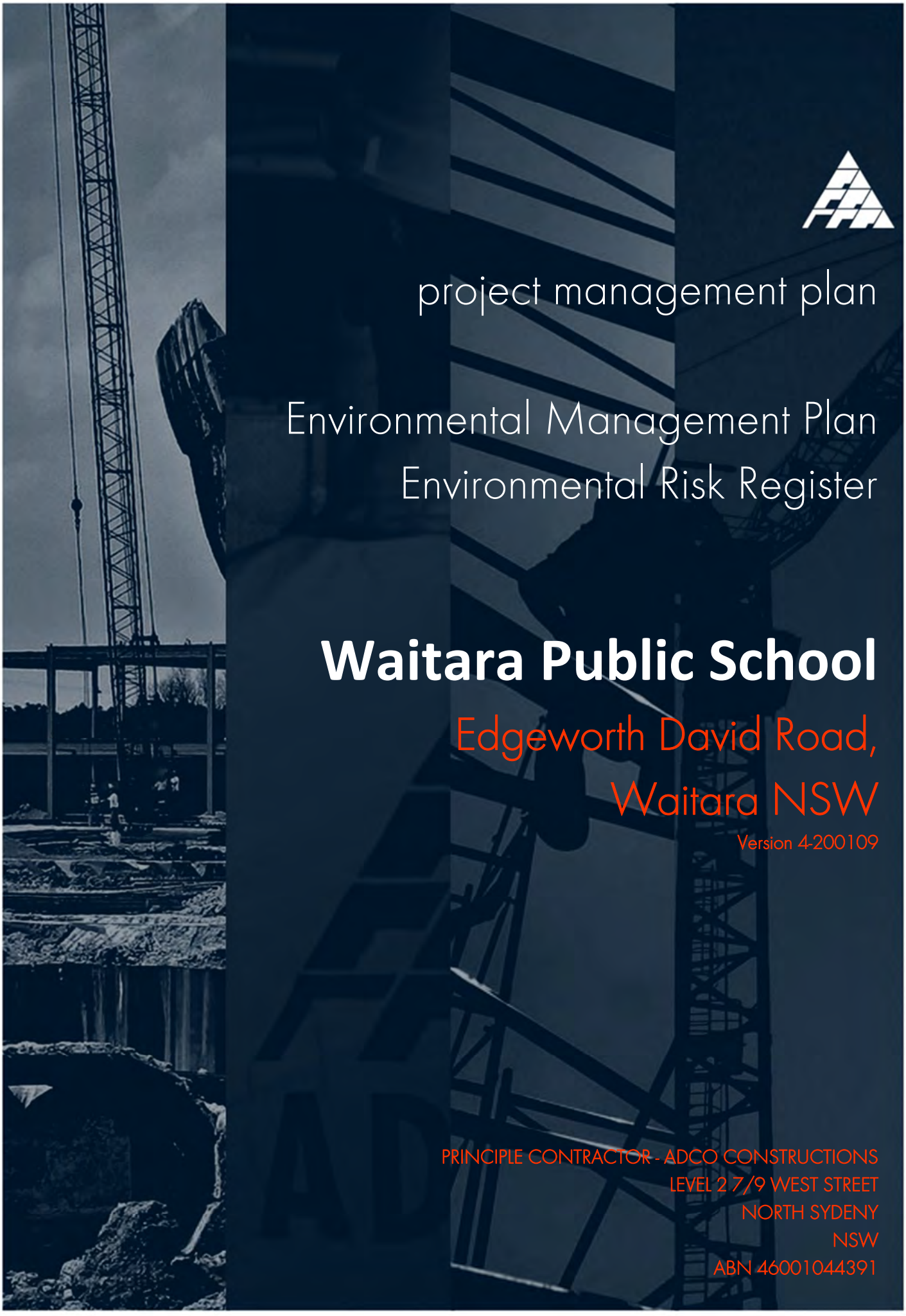

project management plan

Environmental Management Plan
Environmental Risk Register

Waitara Public School

Edgeworth David Road,
Waitara NSW

Version 4-200109

PRINCIPLE CONTRACTOR - ADCO CONSTRUCTIONS
LEVEL 2 7/9 WEST STREET
NORTH SYDENY
NSW
ABN 46001044391

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AUTHORISATION

Rev No.	Issue date	Approved by	Position	Update details
V0	180701	Dean Israel	Project Manager	Initial Plan
V1	190211	Dean Israel	Project Manager	Details amended for Main Works
V2	190304	Dean Israel	Project Manager	Satisfy SSD Conditions
V3	190605	Dean Israel	Project Manager	State Manager details updated
V4	**200109**	**Dean Israel**	**Project Manager**	**DoE requested changes**

ADCO PROJECT PERSONNEL CONSULTATION AND SIGN OFF

We, the undersigned, confirm that we have been consulted on the contents of this document, read and understood the contents of this document, and agree to implement the requirements of this Plan on this project site

Name	Position	Signature	Date
Dean Israel	Project Manager		09/01/2020
Malcolm Dorn	Site Manager		
Rob Petkovic	Foreman		
Mick Baker	S&E Adviser		
Thomas Dean	Contract Administration		
Andreas Pashiou	Project Engineer		
Saban Kilinc	Construction Worker		

INTRODUCTION

PURPOSE OF THIS PLAN

ADCO Constructions implements an integrated safety and environmental management system on all projects.

Our Corporate SHE (Safety, Health and Environment) Management System, documents the way construction-related activities are managed across ADCO project sites.

This Management Plan provides information on how health and safety will be managed on this project to ensure as far as reasonably practicable that a safe, injury and incident free workplace is maintained.

CORPORATE MANAGEMENT SYSTEM and DOCUMENTATION

System documents which are referenced in this Management Plan can be sourced by accessing the ADCO Constructions Intranet System. This can only be accessed by ADCO personnel.

ADCO PERSONNEL SIGN OFF

ADCO project personnel will be consulted into the Management Plan contents by the relent Project Manager.

A copy of the Management Plan is to be maintained on site for personnel access.

INFORMATION SUPPLY TO SUBCONTRACTORS

The Management Plan will be supplied to PCBU's and subcontractors through the Aconex Portal or another IT formats. Soft copy of the Plan is available on site through the Site Manager.

PLAN REVIEW

The Management Plan will be reviewed on a periodic basis by the site management team, not exceeding 6-monthly, to ensure its suitability and compliance to legislation and the operational requirements of the project.

Document control such as version number, and chances within the document will be recorded and tracked. Superseded soft copies must be marked "superseded' and filed away. Electronic versions must be filed into a superseded file via the "V" drive or "Drop Box"

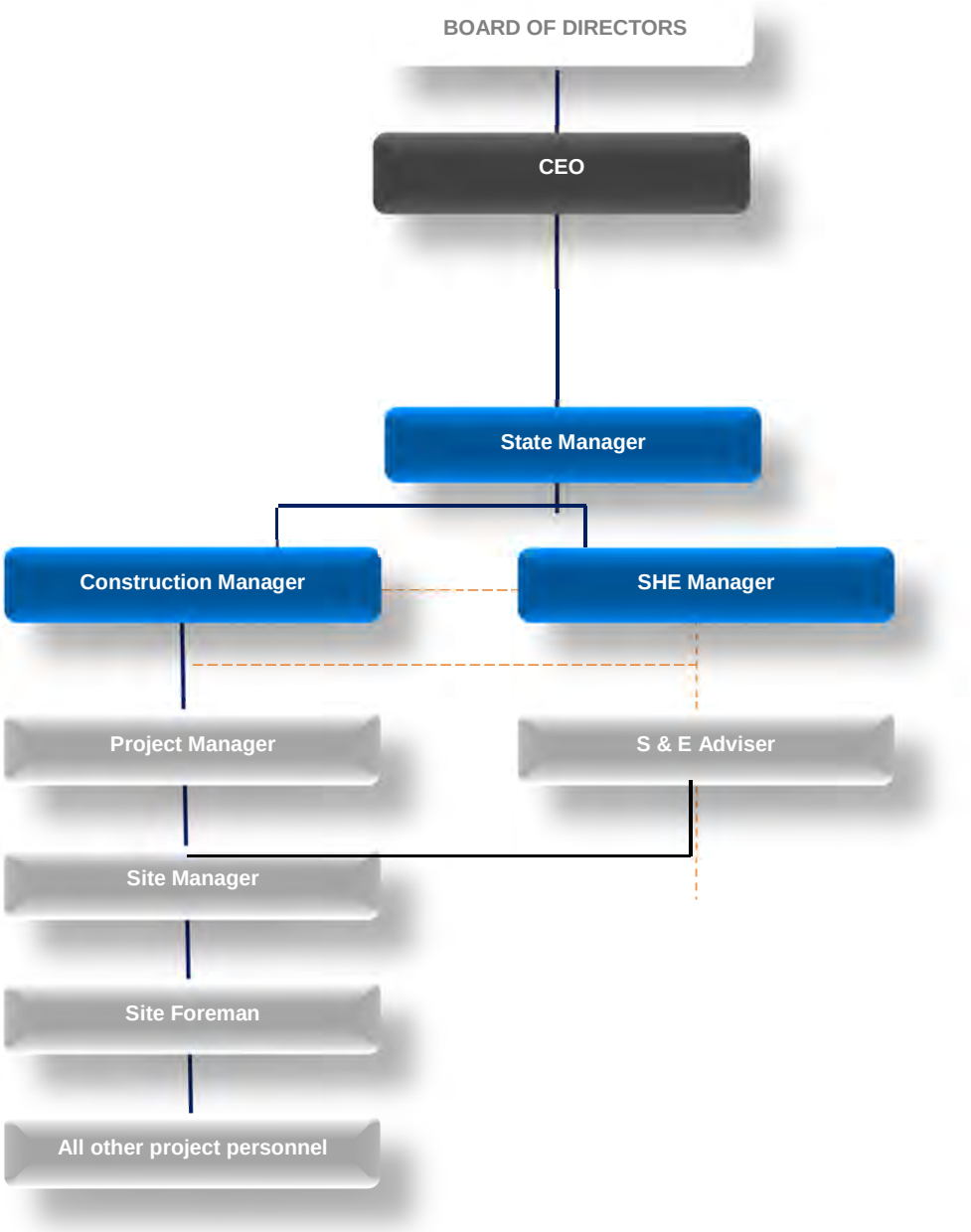
PLAN ARCHIVING

Copies of the Management Plan will be archived for a period of at least 24 months following an update and or completion of the project.

PLAN INTERFACE

This Management Plan interfaces with other management documents as follows:

PROJECT MANAGEMENT STRUCTURE



Chief Executive Officer

Neil Harding

State Manager

John Basilisco

Construction Manager

Matt Wilkinson

SHE Manager

Phil Provenzano

Project Manager

Dean Israel

Site Manager

Malcolm Dorn

S&E Adviser

Mick Baker

Site Foreman

Rob Petkovic

First Aid

Mick Baker/Malcolm Dorn

Chief Emergency Warden

Malcolm Dorn

POSITION RESPONSIBILITIES

Chief Executive Officer

Refer to the Corporate Management Plan.

State Manager

Ensure that:

- Corporate Management Systems are implemented at all levels in the State.
- Appropriate resources are allocated to project teams to ensure compliance legislative requirements and the requirements of the Corporate Management Systems.
- Project operations follow applicable state or federal legislation.
- A review of the safety, environment, quality and health management performance of the State is completed regularly to identify non-conformances, trends and areas of improvement.

Construction Manager

Ensure that:

- Corporate Management Systems are implemented on projects within the State.
- SHE requirements have been identified and accounted for during project tender processes.
- Project operations follow applicable state or federal legislation.
- Appropriate resources are allocated to project teams to ensure compliance legislative requirements and the requirements of the Corporate Management Systems.
- Project team personnel have received training to fulfil their duties and responsibilities with the Corporate Management Systems.
- A review of the safety, environment, quality and health management performance of the State is completed regularly to identify non-conformances, trends and areas of improvement.

Safety, Health & Environment (SHE) Manager

Ensure that:

- Legislative requirements for SHE management are implemented and maintained on project sites.
- The requirements of the Corporate SHE Management System are implemented on project sites.
- Where required, project SHE requirements and risks are identified during project tender and/or trade tender processes and incorporated into project management plans.
- Reviews of SHE performance are completed on all projects to ensure compliance with legislative and corporate requirements.

Project Manager

Ensure that:

- SHE requirements are identified and assessed during trade tender evaluations.
- In conjunction with the SHE Manager, project management plans are developed and implemented on projects.
- Resources are allocated to implement and maintain the SHE requirements on the project.
- ADCO project personnel have received training to fulfil their SHE responsibilities.
- Project personnel are aware of current SHE legislation and their obligations.
- SHE performance on the project is reviewed and non-compliant activities by employees and subcontractors are addressed.

Site Manager

Ensure that:

- Legislative requirements for SHE management are implemented and maintained on the project site.
- The requirements of project SHE Management Plans are implemented and managed on the project.
- The requirements of the Corporate Management Systems are implemented and managed on the project.
- Any issues which may arise over SHE requirements (legislative or Corporate) are managed on site.
- Employees and subcontractors complete their work in compliance with legislative and Corporate Management System requirements.
- Open lines of communication and consultation are maintained with the S&E Adviser and other parties (i.e. subcontractors, employee representatives) to ensure that the site operates in a safe manner and in compliance with regulatory and corporate requirements.
- SHE performance on the project is reviewed and non-compliant activities by employees and subcontractors are addressed.

S&E Adviser

Ensure that:

- Legislative requirements for SHE management are implemented and maintained on project sites.
- The requirements of the Corporate Management Systems are implemented on project sites.
- SHE performance on the project is reviewed and non-compliant activities by employees and subcontractors are addressed.

Health and Safety Representative (HSR)

In general:

- Participate in risk and hazard identification and control.
- Participate in incident investigations and management.
- Participate in workplace inspections (e.g. with the Committee, with the project team).
- Participate in project consultative forums. (e.g. S&E Committee)
- Consult with and represent workers (i.e. work group) in health and safety issues.

All other project personnel

All personnel are responsible for actively promoting and complying with Safety, Health and Environmental Management requirements as determined / advised / required by ADCO. Activities that all personnel are required to participate in include, but are not limited to:

- Attend pre-start meetings.
- Conduct pre-start tasks analysis.
- Adhere to all permit requirements.
- Report all hazards, near misses and incidents (including injuries).
- Immediately stop any "at risk behaviour" identified during daily work activities.
- Attend safety presentations and toolbox meetings.
- Assist in achieving project SHE objectives and targets.

OBJECTIVES AND TARGETS

CORPORATE ENVIROBMENTAL OBJECTIVES AND TARGETS

Note **Refer to the Corporate Management Plan for additional information.**

PROJECT OBJECTIVES AND TARGETS

Environmental

OBJECTIVE	TARGET
Incident management	∇ Zero reportable incidents. ∇ All incidents are reported to ADCO site management immediately on occurrence. ∇ Incidents investigated within two hours of notification. ∇ Corrective actions are implemented according to the ADCO risk management time frame. ∇ Incident reports are completed within 24 hours of the occurrence. ∇ Incident reports are closed out within 28 days of occurrence. ∇ Preventative actions implemented across the project and noted in the Site Report or Weekly Site Inspection.
Waste management	A form of waste minimisation, recycling and reuse program is established and promoted throughout the project period. ∇ Where waste minimisation is a requirement of project compliance (e.g. green star), waste strategies are included in the site induction program. ∇ Work activities are monitored for compliance through the Weekly Site Inspection.
Fauna and Flora management	Where fauna and flora minimization is a requirement of project compliance, work activities are completed with consideration and protection of the same. ∇ Management requirements are included in the site induction program. ∇ Work activities are monitored for compliance through the Weekly Site Inspection.
Air and water quality management	Work activities are completed with nil to minimal impact on air and water quality in and around the site. ∇ Mitigation strategies (e.g. dust suppression, nominated trade waste wash off areas and refuelling locations) are identified for the project and per work activity (i.e. SWMS). ∇ Management requirements are included in the site induction program. ∇ Work activities are monitored for compliance through the Weekly Site Inspection.

Cultural Heritage management

Where heritage management is a requirement of project compliance, work activities are completed with due consideration and protection of the same.

- ∇ Management requirements are included in the site induction program.
- ∇ Work activities are monitored for compliance through the Weekly Site Inspection.

LEGAL AND OTHER REQUIREMENTS

LEGISLATION

Compliance

Risks controls on this project will be implemented in accordance with Environmental legislation.

Legislation applied to this project is noted in the Risk Register section of this document.

Access

Access to current Legislation is available to all project personnel.

Subcontract workers should liaise with the Site Manager for access.

SITE RULES

Display

Site Rules are applicable to all workers on this project and are:

- Attached to the Site Induction form - for review and acknowledgment during the site induction.
- Posted on site noticeboards – for review and confirmation while on site.
- Re-iterated as required during of the project consultative forums.

Objective

The objectives of the Site Rules are to:

- Meet legislative requirement for OHS/WHS and environmental management.
- Define ADCO's minimum operational standards.
- Prevent harm to people and the environment.

PROJECT INFORMATION

PROJECT SUMMARY

Project period Stage 1 Early Works	Works Completed		
Project period Stage 2 Main Works	January 2019	to	May 2020

Project Team 24 Hours Contact Details:

Project Manager – Dean Israel 0413 777 152

Site Manager – Malcolm Dorn 0411 525 835

Project Description:

The proposed project is separated in two stages; an Early Works stage followed by the main works

The Early Works involves the establishment of a 'Demountable Village' providing temporary learning areas for students. The installation of the demountable buildings is by a separate Contractor with ADCO carrying out some final demolition works and providing Electrical, Communications, Fire and Hydraulic services connections to the demountable buildings.

Following occupation of the Demountable Village, the Main Works site compound will be established. This stage involves the demolition of 8 existing buildings and associated structures to accommodate a new 4 Storey Building that will house the following:

- School Administration and staff amenities
- Hall
- Canteen
- 38 teaching spaces
- Ancillary and Support Spaces
- Landscaping and Civil works

The building will be founded on bored piers, and comprise of a post tensioned reinforced concrete structure, structural steel roof frame and metal deck roofing and light weight cladding and glazing.

PROJECT SPECIFIC INFORMATION

Site access information STAGE 1 Early Works	Construction Vehicle site entry location	Stage 1 Works Complete
Site access information Stage 2 Main Works	Construction Vehicle site entry location	Gate 2 off Myra Street – Primary Site Access
	Construction Vehicle site entry location	Gate 3 off Edgeworth David Avenue – Secondary Site Access
	School Pedestrian entry location	Existing School Gate 5 (50m north of ADCO Gate 2)
	Site Personnel entry location/s	Gate 1 off Myra Street
	Delivery instructions	1. Entry in accordance with Traffic Management Plan 2. No Deliveries between 8:30am – 9:30am and 2::30pm – 3:30pm Drop-off and Pick-up Times (Times to be confirmed following consultation with the School) 3. No deliveries via Highlands Avenue during Main Works Stage

Work hours – Day Shift

General	Monday – Friday	Saturday	Sunday	Public Holiday	RDO
From	7am	8am	No work		7am
To	6pm	1pm			6pm

Council requirements Compliance with LINK traffic management plan

Client requirements Demolition work to be undertaken outside school operating hours

Associated demolition works e.g. sorting and loading to be suspended during Drop Off and Pickup times 8:30 – 9:30am and 2:30 – 3:30pm respectively

ENVIRONMENTAL MANAGEMENT

COMPLIANCE

Risks controls on this project will be implemented in accordance with legislation, Codes of Practice and Standards.

Legislation, Codes of Practice and Standards which will be applied to this project are noted in the Environmental Risk Register (rear of this document)

OBJECTIVES

ADCO will manage construction activities and operations in a manner which, so far as reasonably practicable, minimises any impact upon natural or heritage protected environments.

In general, construction activities will seek to:

- Minimise land disturbance.
- Where required (e.g. DA conditions), restore the area to pre-disturbed conditions.
- Protect flora and fauna ecosystems.
- Implement controls to prevent the pollution of surface and ground water quality.
- Implement air quality control measures (e.g. dust suppression, contained work area).
- Implement waste control / management strategies including (where practicable) recycling, recovering and re-using resources from waste.
- Implement noise and vibration reduction strategies (where practicable).
- Ensure compliance with all laws, regulations and rules pertaining to the environment that are applicable to the site.

IDENTIFICATION

The identification and assessment of environmental risks (aspects and impacts) that could eventuate during construction of the project will be completed during the following stages:

- Design
- Tender
- Project planning
- Project construction

Aspects and impacts will be assessed relative to:

- The potential to cause the discharge or release of pollutants to water, air, or land.
- The impact on flora, fauna or heritage.
- The potential to impact on the surrounding neighbourhood (e.g. noise, vibration).

The identification, assessment and risk mitigation of environmental risks is documented in the Environmental Risk Register (rear of this document)

MONITORING

Actions taken to mitigate environmental risks must be reviewed for ongoing compliance by the Project Manager, Site Manager and S&E Adviser.

Verification of monitoring should be noted on the **Weekly Site Inspection** form.

MANAGEMENT

The Project Manager, Site Manager and S&E Adviser are responsible for ensuring that all site personnel comply with environmental risk mitigation requirements.

NOISE & VIBRATION

Refer to annexure 2 for Sub-Plan

ADCO will implement working hours that are compliant with legislation and local government requirements.

To ensure that plant and equipment used throughout construction is the quietest reasonably available ADCO Constructions will:

- Ensure that Plant is inspected at first entry to site and then at regular intervals. Refer to Procedure: Operating Plant (mobile plant).
- Where practicable, position Plant / equipment (e.g. start-up, parking, refuelling) away from noise-sensitive areas. There is adequate parking available within the site establishment area.
- Where practicable, avoid simultaneous operation of noisy Plant /or equipment.
- Ensure that Plant / equipment is serviced as per the manufacturer's instruction and maintained in good working order.
- Ensure that Plant / equipment is switched off when not in use.
- Where practicable, select alternative Plant or equipment to complete the activity.

The ADCO Project team will ensure compliance to noise management controls through:

- Carrying out works within approved Construction Hours.
- Regular inspections (documented in the Weekly Site Inspection) and completion of corrective actions where required.
- Inclusion of noise and vibration awareness and control requirements into the site induction.
- The use of the daily Pre-Start Meeting to discuss awareness, control compliance and requirements.
- Ensuring, so far as is practicable, that personnel involved in or working near noise generating activities on the construction site, wear PPE applicable to the activity.
- Ensuring, that signage advising of the hazard/s are posted in visible locations around the work activity area.

Where construction activities may result in noise / vibration impacts to the community, notification will be provided to the affected parties. If applicable, notification can be in the form of any or all: letterbox drops, door knocking, newspaper adverts etc.

Notification information will include:

- The date of and/or duration of the works.
- Time of day that the works will occur.
- Specific information regarding likely impacts and mitigation strategies
- Information for registering concerns or complaints through the ADCO 1800 number (1800 232 628.

DUST AND ODOUR

ADCO will prevent any nuisance occurring through the discharge of dust, dirt, water, fumes and the like on to persons or property.

Strategies to be implemented to prevent dust and odour generation and potential nuisance includes but is not limited to:

- Restrict vehicle movements to designated routes.
- Apply water sprays to earthwork locations as required during periods of dry weather, strong winds or dust generating activities.
- If excavated materials will be stockpiled, onsite stockpile management practices will be carried out. These include water sprays and locating stockpiles away from public and residential properties as much is reasonably practicable.
- Minimise dust generating construction activities during periods of high winds or adverse weather.
- Cease relevant construction activities should they be found to be generating excessive dust until effective control measures are implemented.
- As required, implement regular sweeping (including road sweeping) and cleaning activities.
- Monitor and manage the incidence of dust deposition from construction activities and construction vehicles.
- Daily and Weekly visual monitoring of dust and dust management controls will be carried out by the Site team. Note: Dust sampling will not be required for the project works.
- Ensure that subcontract personnel adopt work methods to include dust minimisation practices.
- Implement corrective action in response to diminished air quality.
- Restrict construction traffic to designated / sign posted traffic routes.
- No burning off will occur on the site.
- There will be no need for proprietary stabilisers on excavated areas due to the short duration of exposure to the elements and limited area of excavation. If excavated areas are exposed to the elements for extended periods of time, water suppression will be in place that adequately covers the exposed area.
- Site amenities areas will have nil dust generating activities that will require additional dust management strategies in place.

IN-SITU GROUND MATERIAL VALIDATION AND CLASSIFICATION

Prior to the commence of any groundworks ADCO will follow the procedure set out below to determine the waste classification of in-situ ground material intended to be excavated for disposal or re-use:

1. Prior to commencing groundworks, ADCO will engage an Environmental Consultant to take material samples within the footprint of the intended excavated area, conduct laboratory analysis, review results and produce a Waste classification report. The sampling and report findings will be based on the NSW EPA (2014) Waste Classification Guidelines; Part 1: Classifying Waste
2. Upon receipt of the report ADCO will provide it to the subcontractor responsible for the excavation and disposal of excavated material for their information and to be used to determine the appropriate tipping at a suitably licensed waste processing facility
3. In the event that material is classified as other than Virgin Excavated Natural Material (VENM / EMN), ADCO will engage the Environmental Consultant to supervise the excavation of material and determine the extent of waste material before VENM is encountered. Site reports will be produced and material of differing classifications separated for disposal or stockpiling
4. For material disposed of other than VENM/ENM, ADCO will direct the subcontractor to provide formal tipping dockets as a record of the material's appropriate disposal.
5. The overall site validation will be addressed under the SSD condition to conduct an EPA approved Site Audit. Again the Environmental Consultant will be engaged to carry out the site audit under the guidance of an approved EPA Auditor who will review the subsequent site report with the intention of validating the site for the intended use.

   In the event of contamination being found a Remediation Action Plan will be developed and executed before a second Site Audit process is undertaken as above.

WASTE

Refer to Annexure 3 for Sub-Plan

Waste categories / types on the project will consist of:

1. Solid Waste;
2. Liquid Waste; and
3. Food waste.

Waste management of the project will consist of co-mingled bins to collect waste material. All waste (excluding hazardous waste) will be collected in a single waste bins onsite and will be separated into different waste streams at an offsite recycling facility.

The project will manage waste by

- ∇ Designating waste storage areas.
- ∇ Waste storage areas will be in accessible areas for both vehicles and personnel to allow for easy access for collection and transport.
- ∇ Waste bins will be maintained in good condition to prevent leaks and spills.
- ∇ Defective containers will not be used for waste storage or transport.
- ∇ Hazardous waste will be contained and separated from other waste categories.
- ∇ If applicable – Material contaminated by spills i.e. fuel, oil, lubricants etc. will be stored in sealed containers and disposed of at an approved facility.
- ∇ Generate a Waste Management Report detailing percentage waste recycled and waste to landfill to determine if construction targets have been achieved
- ∇ Actively encouraging Contractors and Suppliers to use non-toxic or recycled products and recycled packaging.

- ∇ Encouraging Contractors and Suppliers to reduce the amount of packaging materials brought on to site.
- ∇ Ensuring that all persons working on our projects are made aware of their responsibility for achieving a green working environment.

Food waste will be managed to prevent birds and vermin accessing the waste.

- ∇ Lidded food waste bins will be in the site amenities areas i.e. offices / lunchrooms.
- ∇ Designated food waste bins will be emptied daily.
- ∇ Food waste bins are to be kept covered
- ∇ Food waste will be contained in bags which will be secured / tied when emptied
- ∇ Work areas are to be kept free of rubbish and other debris always.
- ∇ No food waste to be deposited directly into external construction waste skips.
- ∇ Active rodent control established on the site i.e. baits around site perimeter.

MATERIAL STORAGE

Construction material required to carry out project works will be stored within designated storage areas within the site compound.

Prior to any delivery of materials, mobile plant or tools, subcontractors to consult with ADCO Site Management on the following:

- ∇ Permissible items permitted on site including DG/Hazardous Substances.
- ∇ Storage areas for trades / materials / substances / Plant.
- ∇ Permits or pre-entry inspections including documentation (e.g. Safety Data Sheets, Validation Certificates etc.) required for Plant, tools or substances.
- ∇ Hazardous substances and flammable goods to be stored in an approved lockable storage cage. Subcontractors to provide their own lockable cages.
- ∇ Pre-delivery inspections to ensure that materials are in accordance with SHE requirements.
- ∇ Items found not to be conforming are to be secured and removed from site.

In relation to the storage of substances the following applies:

- ∇ Documentation (SWMS and current SDS) to be supplied to and approved by ADCO prior to the storage and use of such items on site.
- ∇ Register for substances to be maintained on site by user company and supplied to ADCO on request.
- ∇ Substances and containers to be compliant and correctly labelled.
- ∇ Substances only to be stored in approved locations on site. No storage within shipping containers permitted.
- ∇ Bunds to be of sufficient size and capacity to accommodate substances stored in the event of a spill.
- ∇ Persons using the substance to have knowledge of, and training in the use of the substance.
- ∇ "DANGER" signage to be placed in visible positions to warn of dangers (flammable substances).

- ∇ Fire suppression equipment to be located with the substances.
- ∇ Spill management requirements to be implemented.

HAZARDOUS SUBSTANCES/DANGEROUS GOODS ETC

ADCO will have appropriate measures in place to ensure the safe use and storage of hazardous substances / dangerous goods etc. Such measures will be in place to prevent accidental release to the natural environment leading to environmental contamination or harm, including impacts to air and water.

The following management protocols will be implemented and monitored for compliance;

- ∇ Maintaining a limit of 250 litres of each substance on site at any one time. Note: Any requirement to use or store more than this quantity, requires a written request to and approval by ADCO Constructions (SHEQ Manager).
- ∇ Subcontractors providing a site-specific WMS detailing the work activities, risks and control measures. (No work will proceed until ADCO Constructions has approved the WMS).
- ∇ Current SDS for each substance. SDSs are to be Australian and issued within the previous 5 years. SDS information will be in the Site Office/First Aid Room.
- ∇ Ensuring all substances are stored correctly and secured.
- ∇ Hazardous Sub Register for the project must be maintained and regularly updated.
- ∇ Ensuring that the substances and their containers are correctly labelled and contained.
- ∇ Storing the substances in a manner which complies with the SDS and any other applicable legislation or standards.
- ∇ Erection of appropriate warning/emergency panel signage to warn of the location of the substances.
- ∇ Ensuring that the substances are safe from use or access by other parties.
- ∇ Completing regular inspections on vehicles, containers, bunding and equipment to check for any leaks or spills.
- ∇ Providing appropriate fire suppression equipment and Spill Kits.
- ∇ Providing details for ensuring that at the completion of the works, all residual stocks of substances are guaranteed to be removed from the construction area.
- ∇ Ensuring fuels and gases are kept apart and secured when not in use.

REFUELING

The following management protocols will be implemented to ensure correct management for refuelling plant etc;

- ∇ Fuels are to be stored in secured storage and be well ventilated.
- ∇ Regular inspections of fuel containers to be completed to check for any leaks or spills.
- ∇ Ensure that appropriate storage facilities and fire suppression, spill management is available.
- ∇ Ensure that containers are correctly labelled and that minimal quantities are stored on site.
- ∇ Where possible, request MINI TANKERS to undertake refuelling on site.
- ∇ Major servicing of machinery to be completed off site.

- Refuelling to occur in a designated area and not within 30m of a water body.
- Hoses to be fitted with a stop valves on fuel cells.

SEDIMENT CONTROL / WATER QUALITIY

Refer to Annexure 4 for Sub-Plan

To control the risk of erosion or sediment erosion and its impact on the natural environment, ADCO will:

- Install erosion and sediment control devices to mitigate and manage the impact of excess soils on nearby roads, surface water quality, air quality, fauna and flora.
- Erosion and sedimentation controls will be monitored on a weekly basis or immediately following a rainfall event.
- Ensure that the handling and placement of excavated material is managed and protected from overspilling into drains and adjacent roads etc.
- Keep stockpiles relatively low in height and cover as required or seed.
- Complete daily inspections of stockpiles, excavated areas and control methods for erosion and sediment management.

ADCO will ensure that all drains and gutters are protected to prevent sediment entering into the system and waterways.

Entering Site

- Identify vulnerable locations on site and install control devices to halt or alter course of water.
- Inspections prior to a major weather event.

Exiting Site

- Identify vulnerable drains, low points and stormwater runoff points.
- Install control devices (i.e. silt fencing, bunding, diversion devices, sand bags, etc).
- Daily inspections and maintenance of control

FOREIGN OBJECTS DAMAGE (FOD)

Materials will be stored in such a way to ensure they are secured from dislodgment in extreme weather conditions.

Site Compound

- Within the site compound all material and equipment must be secured or securely stored.
- Material storage area to be fully contained.
- Appropriate storage containers based on the nature of the product being stored will be provided and located in a designated area.
- Containers must be closed except for when personnel are accessing or working within the container.
- Items within containers must be secured.
- Waste must be placed into supplied receptacles fitted with lids.
- Waste lids are to be closed.

- ∇ Material or equipment stored external to site sheds or containers must not have any fittings, fixtures or wrapping which could come loose and cause a hazard.
- ∇ Lightweight materials must be secured to prevent uplift and dislodgment i.e. materials on roofs and balconies etc.

Work Areas

- ∇ Material or equipment transported to the work area must be secured to ensure that no fittings, fixtures or wrapping could come loose and cause a hazard during transportation
- ∇ Work areas are to be maintained with a high standard of housekeeping and must be free of loose material, packaging, debris etc. at the close of each shift.

FLORA AND FAUNA

Flora and fauna protection will be managed as prescribed in development approvals etc;

- ∇ Protective controls will be erected around trees and shrubs with denoted signage e.g. tree protection zone
- ∇ No materials to be stored over root systems as prescribed in approvals.
- ∇ Compliance to specific flora or fauna requirements set out in the approvals is mandated and the responsibility of ADCO management.
- ∇ Any wildlife is to be protected. National Parks or Local Council to be contacted upon finding any wildlife on the project.

COMMUNITY CONSULTATION AND COMPLAINTS MANAGEMENT

Consultation and Communication with the local community will be governed by the document *Community Communication Strategy April 2019* (Refer Annexure 8), prepared by Schools Infrastructure NSW. ADCO will abide by this document including but not limited to the following specific items detailed in this document:

- ∇ Provide construction updates and associated information to SINSW to be used for community information forums e.g. Info Booths
- ∇ Participate in community information forums when requested by SINSW
- ∇ Provide construction updates to SINSW for regular information sheets provided to the School for their promotion and distribution to staff, students and parents/guardians.
- ∇ If approached by members of the public seeking information on the project, ADCO will distribute "Community Contact Cards" that direct people to the SINSW 1300 phone number, website and email address
- ∇ Provide and maintain project specific sign boards visible from the street that provide high level information on the project
- ∇ Participate in the Monthly Project Reference Group meetings
- ∇ Comply with the notification protocols setout in table 5 of the CCS or otherwise as directed by SINSW

In addition, ADCO will assist with community consultation through the following measures:

- ∇ Provision of a sign board prominently placed near the site entry detailing a 24 hour 1800 phone number in the event of an emergency

- Separate signage detailing the contact details of Project Personnel available 24 hours every day
- Letterbox drops for any extra-ordinary activity planned to occur e.g. major delivery that may impact local traffic

Media Interaction

- In the event of any attention from the Media (TV, Newspaper etc) ADCO will maintain a strict policy of directing for enquires to SINSW via the community contact card. No unauthorised contribution to the media will be undertaken by ADCO with SINSW permission.

Complaints can be raised for issues such as, but not limited to:

- Noise
- Vibration
- Dust
- Pollution
- Harassment
- Perceived safety or environmental management issues.
- Breaches of legislation, DA/BA conditions

A person wishing to register a complaint with ADCO can do so by calling the 1800 ADCO AU phone number and requesting to speak to the Site Manager or Project Manager.

Information relating to complaints is documented on the ADCO Constructions Complaints Form. Complaints are registered on the Register - Project Complaints.

Complaints must:

- Immediately - Be reviewed and Investigated by the Project Manager, Site Manager and/or S&E Adviser.
- 48 Hours - Be actioned by the Project Manager, Site Manager and/or S&E Adviser. Actions to be noted on the form. This includes a response (email or verbal) to the person generating the complaint.

In general, the below recommended actions should be followed:

- Respond to the complainant in an objective, polite and courteous manner.
- Engage with the complainant to correctly understand the complaint.
- Seek clarification and confirm the issues, relevant information, and outcomes sought (i.e. summarise the main points).
- Clarify the application of any relevant legislation, policies or procedures.
- Resolve the complaint and acknowledge the complainant.
- If the complaint cannot be resolved within a reasonable time frame, advise the complainant about the complaints process and indicative response.
- Take reasonable action to prevent similar complaints in the future.

FIRE PROTECTION

Fire is a very real threat in construction activities. The management of potential fire and the spread is dependent of controls implemented by the site team:

- Hot Works will require an assessment and permit to proceed issued by ADCO.
- Unless otherwise exempt, Hot Works will not be permitted on Total Fire Ban Days.
- Fire Zone areas (as prescribed in development approvals) will be established and enforced.
- Fire suppression equipment will be available for minor flares. NSW Fire will be immediately contacted for assistance pending assessment by ADCO management.

GROUNDWATER MANAGEMENT

The risk to existing groundwater conditions from construction activities is considered very low based on geotechnical investigations undertaken. Two separate reports have been relied on by ADCO in considering the need for specific groundwater management measures, these are:

1. Geotechnical and Environmental Investigation report reference PSM3331-007R dated 5 September 2017 prepared by Pells Sullivan Meynink
2. Geotechnical report reference ADC 3490 – GEOAA dated 6 November 2018 prepared by Compaction and Soil testing Services Pty Ltd

Both reports detail the presence of groundwater seepage at an approximate depth of 4.5m well below the proposed excavation activities and therefore there is no anticipated impact from construction activities on the groundwater. Further we note the following:

- Stormwater management and surface run-off of water will be managed in accordance our Construction Soil and Water Management Sub Plan found in Annexure 4
- The storage of hazardous materials and chemicals will be managed in accordance with the procedure detailed on page 40 of this CEMP
- The are no known contaminants onsite however in the event of a discovery the Unexpected Finds Procedure will be executed as details in Annexure 6

MONITORING AND REVIEW

INSPECTIONS

ADCO will complete daily and weekly workplace inspections to review and confirm compliance to approved work practices and environmental controls.

- Regular daily visual inspections will be completed by the Site Manager, S&E Adviser and / or HSR.
- Formal inspections will be completed by the Project Manager, Site Manager, S&E Adviser using the Weekly Site Inspection form.
- The completed Weekly Site Inspection must be attached to a Site Report following each week.

The inspection is required to reflect the project's level of compliance to:

- Control measures required per active work permits.
- Approved subcontractor SWMS for high risk work activities.
- General site conditions.

AUDITS

Project audits, completed by the SHE Manager are a formal a review of project compliance against select criteria of the Corporate SHE Management System.

- Applicable projects are required to be audited once during the life of the project.
- The level of compliance to the requirements of the Corporate SHE System is determined by the audit score achieved.
- Any corrective action identified in the audit must, depending on the level of risk be addressed by the site team within a maximum of seven working days of receipt of the audit report.
- Corrective actions and supporting evidence must be attached to the Audit Report in the ADCO Data Portal.

TRAINING AND INSTRUCTION

SITE INDUCTION

Training and instruction are key requirements to ensuring that workers can perform their duties and tasks without risk to their health and safety or the health and safety of any other persons. The ADCO induction process is a prescribed method of ensuring that workers are provided with information on:

- The type of project being completed
- The project teams
- Site access / egress
- Emergency management requirements
- Consultation arrangements
- Incident and hazard management
- Compliance management
- Permit to work management
- Environmental management requirements
- Industrial relations
- Management of contractor's work activities

All persons who are attending the site for completing construction activities must attend and complete the site induction before commencing work.

Subcontractors (supervisors) are responsible to ensure that all new workers are site inducted on the very first day on site.

Induction booking are recommended with the Site Manager and or / S&E Adviser.

Visitors

Visitors will not be site inducted and will be required to:

- Report to the Site Office on entry and at exit from the site.
- Sign in to and out of the Register – Visitors.
- Be accompanied by and remain within two metres of a site inducted person.
- Wear PPE mandated on the project.
- Where footwear and clothing appropriate to a construction site.

Records

Induction information, including supporting documentation, will be maintained on site in a lockable storage facility, by the Site Manager and/or S&E Adviser.

Site induction information will be archived for a period of at least three years after completion of the project.

TRAINING

Evidence of training and instruction must be provided / be available for all persons who work on our project sites.

COMMUNICATION AND CONSULTATION

ADCO PRE-START MEETINGS

A daily pre-start meeting to identify and discuss safety issues / hazards / controls relative to daily work activities is required to be held by the Site Manager.

Subcontract personnel are required to attend the meeting prior to commencing their daily work.

Issues to be discussed at the meeting, include but are not limited to:

- The tasks being completed by each trade during the shift.
- Risk and hazard management requirements including the requirement for any Permits.
- Incidents, accidents and near misses from any previous shifts.
- Health and safety issues raised by the workforce.

Details of the meetings will be recorded on the **Pre-Start Meeting** form and attached to the **Site Report**.

Late comers should liaise with the Site Manager to ensure they understand the day's events and pending issues.

SUBCONTRACTOR MEETINGS

Subcontractors / PCBU's are required to undertake the following consultation;

- Weekly toolbox Meeting with entire workgroup
- Daily Pre-Start Meeting for activities under a ATW Permit
- Toolbox Talk post any Incident (covering the incident, outcomes and actions)

Copies of all such consultation meetings must be forwarded to the ADCO Site Manager and / or S&E Adviser.

S&E COMMITTEE MEETINGS

At the initiation of ADCO or at the request of workers, a Safety Committee may be established on the project.

- All subcontract companies are required to ensure that a representative attends the meeting. This may be the (HSR) Health and Safety Representative.
- Details of the meetings will be recorded on the S&E Meeting form and attached to the Site Report and issued to all Committee Members.

Copies of the meeting minutes will be placed on the noticeboard for general site review.

OTHER MEETINGS

Other site meetings which may be used for the discussion of safety, health and environmental management issues include, but are not limited to:

- Subcontractor Meetings
- PCG Meetings
- General Site Meetings

Details of the meetings will be recorded on an applicable form and as required attached to the **Site Report** or distributed to other parties.

TOOLBOX TALKS

At the initiation of ADCO or at the request of workers, topic-based Toolbox Meetings may be held on the project. The objectives of toolbox meetings are to:

- Review the safety status in the work areas.
- Discuss health and safety items which have not been resolved on a day-to-day basis.
- Discuss health and safety aspects of work planned for the next week.
- Discuss any proposed changes to work procedures.
- Discuss any topical or promotional health and safety items.

Details of the discussion topic will be recorded on the **Toolbox** form and attached to the **Site Report**.

Copies of the completed form will be placed on the site noticeboard for general site review.

NOTICE BOARDS

Notice boards located external to site offices and within amenity areas will be used by ADCO to communicate safety and operational information to site workers. Such information includes but is not limited to:

- Surveillance and air monitoring results
- Regulatory notices
- Notification of significant incidents / events
- Changes in procedures and management processes
- Reinforcing requirements for the management of risks / hazards
- Weather information
- Traffic movement requirements
- Emergency management requirements
- Health management (e.g. sun smart)
- Confirmation of meeting times and venues

NOTIFICATION

Details of consultative forums will be advised to site workers via;

- Site Induction
- Pre-Start Meetings
- Site Notice Boards

SUBCONTRACTOR MANAGEMENT

INFORMATION

ADCO's SHE standards are required to be adopted and maintained throughout the life of the project. Subcontract companies will be advised of the requirements through:

- ∇ Discussions during the tender stage.
- ∇ Discussion and agreement at the project award stage.
- ∇ Provision of the Contractor S&E Requirements book. (Also annexed to the Subcontract Agreement)

SWMS

Prior to the commencement of any work activity on a project, a subcontract company must provide safe work method statements (SWMS) to ADCO for review and approval. The review and approval process will be:

- ∇ Generally managed by the S&E Adviser in conjunction with the Site Manager.
- ∇ Documented using a SWMS Review form.

MONITORING

The monitoring of subcontractor site activity compliance to approved SWMS will be:

- ∇ Managed by the Site Manager and S&E Adviser through regular visual inspections.
- ∇ Documented (as selected) on the Weekly Site Inspection form.

NON-COMPLIANCE

Where a non-compliance is observed, the Site Manager or S&E Adviser will do any/all of the following:

- ∇ Stop the work activity.
- ∇ Cancel / suspended any active Authority to Work Permit.
- ∇ Issue an Improvement Notice / non-compliance via ACONEX.
- ∇ Issue a verbal instruction.

Non-compliances will be recorded on ACONEX.

ARCHIVING

Subcontractor supplied documentation will be archived for a period no less than 24 months after project completion.

RISK MANAGEMENT

IDENTIFICATION

Design

Where ADCO has responsibility for the design of the building / components of the building, the Design Manager will co-ordinate the compilation of a **Safety in Design (SID) Register**.

The Register will be completed with input from, but not limited to: Consultants and nominated ADCO personnel.

Changes to design during the design phase, which have the potential to impact on the safety of persons or the environment will be risk assessed including the determination of control measures.

Tender

Where ADCO does not have responsibility for the design, a review of the buildability of the design may be completed by the Project Manager / Design Manager.

Project preparation

Prior to commencement of the project, the Project Manager is required to develop the Project Management Plan, Risk Registers and any other supporting Plans.

An assessment of project operating conditions will be made by completing the **Project Review (Part A) – Commencement** form in consultation with the SHEQ Manager.

Project construction

During project construction, risks / hazards will be assessed and managed through, but not limited to:

- ∇ Site daily pre-start meetings.
- ∇ Pre-start meetings with individual trade contractors.
- ∇ Authority to Work Permits (ATWP) for high risk work activities.

CONSIDERATIONS

The identification of risks or hazards in the workplace will consider:

- ∇ Situations / events that have the potential to give rise to injury, illness or environmental issues.
- ∇ The nature of potential injury, illness or environmental concern relevant to the activity, product or service.
- ∇ Past incidents, audit reports, etc.

The identification process will consider but not be limited to:

- ∇ The way work is arranged, managed, completed.
- ∇ The fabrication, installation and commissioning and handling and disposal (of materials, plant and equipment).
- ∇ The purchasing of goods and services.
- ∇ The inspection, maintenance, testing, repair and replacement of plant and equipment.

REPORTING

ADCO encourages all site personnel to report safety and environmental risks and hazards.

Risk and hazards will be identified by the ADCO project team in, but not limited to the following:

- ∇ Completing regular visual site inspections.
- ∇ Completing the Weekly Site Inspection.
- ∇ Issuing permits to work.
- ∇ Conducting daily pre-start meetings.

Risks or hazards, which cannot be actioned by the identifying person, must be reported to the Site Manager or S&E Adviser. The methods for reporting risks and hazards, include:

- ∇ Verbal notification.
- ∇ Advice at any of the consultative forums (e.g. pre-start meeting, committee meeting, subcontractor meeting).
- ∇ Completion of the Issues Notification form.

ACTION

Where a Site Manager or S&E Adviser is notified of a risk or hazard the following must occur:

- ∇ The risk or hazard must be reviewed.
- ∇ The risk or hazard should be assessed, and appropriate controls developed according to the principles of the hierarchy of controls.

MONITORING

Worker compliance to approved risk controls will be monitored through:

- ∇ Daily visual inspections by the project team.
- ∇ Reviews of subcontractor SWMS.
- ∇ Completion of a Weekly Site Inspection by the project team.

NON-CONFORMANCES

Where a worker does not comply with a risk or behaviour control requirement, disciplinary action through the ADCO non-conformance system will be initiated.

Dependent on the severity of the non-compliance, workers are subject to a tiered warning system and may receive up to 3 warnings for engaging in the same non-complaint activity.

Written warnings in the form of an **Improvement Notice** are issued to a company, when an individual of that company has engaged in a non-compliant activity.

ADCO reserves the right to deny a person access to site - irrespective of the number of warnings required / issued - if the non-compliance could / has resulted in a dangerous occurrence. This determination will be made in consultation with Construction Manager, Project Manager, Site Manager and SHE Manager.

MONITORING

Daily and on-going inspections of work areas, Plant, work practices against the approved Permit conditions must be completed by the Site Manager / Forman and/or S&E Adviser.

Monitoring includes, but is not limited to:

- ∇ Reviews of work activities.
- ∇ Ensuring that competent personnel are completing the work activity.
- ∇ Confirmation that risk control measures listed on the permit are in place.

Observations must be recorded in the **Weekly Site Inspection**.

NON-CONFORMANCE Where an inspection of the permit work area identifies that risk, controls are not in place, the Site Manager must suspend or cancel the Permit.

ENVIRONMENTAL RISK REGISTER

REFERENCE LEGISLATION

ENVIRONMENTAL

Legend	Federal legislation	State legislation

Acts and Regulations	NSW
Environment Protection and Biodiversity Conservation Act 1999	Federal legislation
Environmental Protection and Biodiversity Conservation Regulations 2000	Federal legislation
Protection of the Environmental Operations (POEO) Act 1997	State legislation
Protection of the Environmental Operations (Clean Air) Regulation 2002	State legislation
Protection of the Environmental Operations (Waste) Regulation 2005	State legislation
Protection of the Environmental Operations (General) Regulation 2009	State legislation
Contaminated Land Management Act 1997	State legislation
Waste Avoidance and Resource Recovery Act 2001	State legislation
Contaminated Land Management Regulation 2008	State legislation

CULTURAL HERITAGE

Legend	Federal legislation	State legislation

Acts	NSW
The Native Title Act 1993	Federal legislation
Aboriginal and Torres Strait Islander Heritage Protection Act 1984	Federal legislation
National Parks and Wildlife Amendment (Aboriginal Ownership) Act 1996	State legislation
Heritage Act 1977	State legislation
Aboriginal Land Rights Act 1983	State legislation

RISK ASSESSMENT FRAMEWORK

SIGNIFICANT RISK

In accordance with the Standard, impacts resulting in a residual risk rating of (E) Extreme or (H) High will be defined as "Significant".

Communicating impacts falling into these categories will be undertaken through the following but not limited to; induction process, contractor meeting and client meetings.

HIERARCHY OF CONTROL

General

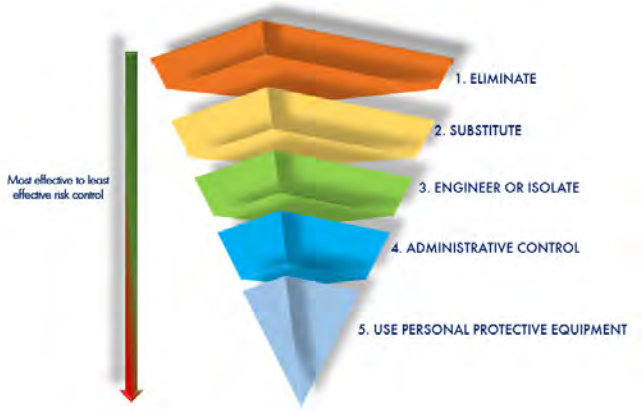
ELIMINATE — Can the risk or hazard be eliminated or removed?

SUBSTITUTE — Can the activity or product be substituted by something else (a substance or a process) that has less potential to cause injury or damage?

ENGINEER or ISOLATE — Can a structural change to the work environment or work process be made to interrupt the path between the worker and the risk?

ADMIN CONTROL — Will an administrative change (i.e. by upgrading training, changing rosters) reduce the risk?

PPE (PERSONAL PROTECTIVE EQUIPMENT) — Can personal protective equipment (gloves, goggles, etc.) or clothing be worn to safe-guard against the hazard?



Risk Matrix

(P) PROBABILITY - A measure of the chance of the occurrence		CONSEQUENCE (C) - The outcome or impact of an event			
		1	2	3	4
	SAFETY	Permanent disability or death.	Serious bodily injury.	Hospitalisation resulting in LTI.	External medical treatment. No LTI.
	ENVIRONMENT	Toxic release off site with detrimental environmental impact	Offsite release contained with outside treatment/assistance. Minimal detrimental environmental impact.	On site release contained with outside treatment/assistance. No detrimental environmental impact.	On site release contained. No environmental impact
Expected to occur in most circumstances.	ALMOST CERTAIN	E	E	H	M
Probably occur at some time.	LIKELY	E	H	M	M
May occur at some time.	POSSIBLE	H	H	M	L
Not likely to occur in normal circumstances.	UNLIKELY	H	M	M	L

ACTION TIME FRAME			
EXTREME (E)	HIGH (H)	MEDIUM (M)	LOW (L)
IMMEDIATE action required	Action IN THE SAME SHIFT.	Action in < 48 HOURS.	Action AS AGREED.
Involvement and approval of Construction Manager / SHE Manager National SHEQ Manager required.	Construction Manager / SHE Manager to be advised of actions to be taken, prior to continuation.	Site Manager and S&E Adviser to review and agree on actions to be taken, prior to continuation.	SWMS review by contractor supervisor. Observation by ADCO.

PROJECT ASPECTS AND IMPACTS

ASPECT	Establishment, Use of Project Offices			
Project Description	Project operations Use of consumables - paper, electricity etc.			
SHE System references	Procedure: Risk Management	Procedure: Environmental Management		

IR	Impacts (consequences)	Risk Mitigation (controls)	RR
M	∇ Increase in environmental impact and associated cost with disposal / recycling	∇ Where possible; use electronic devices for communications. ∇ Where possible; use recycled paper. ∇ Lights only to be turned on as required. ∇ Use long life globes (low voltage where possible) ∇ Switch off all lights on departure from office ∇ Where external lighting has been installed ensure the Design and Construct Subcontractor has issued a certificate stating compliance with AS4282-1997 ∇ Doors to be closed when cooling / heating is used. ∇ General waste to be disposed of in appropriate designated waste facilities. ∇ Use environmentally friendly cleaning products for amenities cleaning.	L

ASPECT	Vegetation Clearing and Revegetation			
Project Description	Clearing of vegetation (trees / shrubs) in accordance with planning / building approvals			
SHE System references	Procedure: Risk Management	Procedure: Environmental Management		

IR	Impacts (consequences)	Risk Mitigation (controls)	RR
H	∇ Decrease in air and water quality. ∇ Build-up of sediment in water systems from land run off.	Clearing ∇ Clearing methods to follow approved (DA or other) procedures. ∇ Trees to be retained will be identified to ensure they are not inadvertently damaged. ∇ Stockpile excavated material into areas which have no impact on the eco system. ∇ Stockpiles to be covered or vegetated (where practicable) to improve soil stability.	M

			∇ Appropriate control measures to be installed to ensure containment of disturbed areas and stockpiles. ∇ Dust mitigation to be implemented as required.	

ASPECT	Erosion and Sediment Management		
Project Description	Construction works potentially impacting on the surrounding environment through the erosion of ground.		
SHE System references	Procedure: Risk Management	Procedure: Environmental Management	General Requirements: Erosion and Sediment Management

IR	Impacts (consequences)		Risk Mitigation (controls)	RR
H	∇ Dust emissions degrade air quality. ∇ Sediment impacting on the external environment / public areas.		General ∇ Sediment Erosion controls to be implemented in accordance with approved SEP. ∇ Complete inspections of stockpiles, excavated areas and control methods for erosion and sediment management. ∇ Wheel wash / rumble grid etc. to be implemented to minimize tracking of soil into public areas. ∇ Erosion and sedimentation controls to be monitored. ∇ Erosion and sedimentation controls to be immediately inspected following a severe weather event.	M

ASPECT	Fauna and Flora Management		
Project Description	Impact on nearby flora and fauna		
SHE System references	Procedure: Risk Management	Procedure: Environmental Management	General Requirements: Fauna and Flora Management

IR	Impacts (consequences)		Risk Mitigation (controls)	RR
M	∇ Loss, damage or harm to local and/or protected flora and fauna.		∇ Manage in accordance with DA requirements. ∇ Implement approved protection controls around flora to be preserved or fauna to be protected. ∇ Daily inspections of control measures to be conducted.	L

ASPECT	Cultural Heritage
Project Description	Archaeological artefacts Unexpected finds.

SHE System references	Procedure: Environmental Management	General Requirements: Cultural Heritage Management	Cultural Heritage: Unexpected Finds Procedure

IR	Impacts (consequences)	Risk Mitigation (controls)	RR
M	∇ Construction activities damage or destroy archaeological artefacts or heritage listed items.	∇ Prior to the commencement of the project, determine heritage / cultural significance of the project site. ∇ Where required, ADCO to engage a competent person to develop an applicable management plan. ∇ Report all finds to Site Management immediately.	L

ASPECT	Management of Air Quality		
Project Description	Dust generation Plant emissions		
SHE System references	Procedure: Risk Management	Procedure: Environmental Management	General Requirements: Air and Water quality management

IR	Impacts (consequences)	Risk Mitigation (controls)	RR
H	∇ Discomfort to site personnel and neighbouring properties or persons.	∇ Monitor and manage the incidence of dust from construction activities / vehicles. ∇ Minimise dust generating construction activities during periods of high winds or adverse weather. ∇ Ensure that contract personnel adopt work methods to include dust minimisation practices. ∇ Apply water sprays as required during periods of dry weather, strong winds or dust generating activities. ∇ As required, implement regular sweeping. ∇ Mobile plant on site to be in good working order.	L

ASPECT	Management of Noise and Vibration		
Project Description	Noise and Vibration attributed to building and construction activities		
SHE System references	Procedure: Risk Management	Procedure: Environmental Management	General Requirements: Noise and Vibration management

IR	Impacts (consequences)	Risk Mitigation (controls)	RR
H	∇ Noise ∇ Discomfort to site personnel and adjoining neighbours and properties	∇ Noisy works to be pre- planned and assessed for DB rating and controls to be implemented.	M

			∇ Review equipment on an ongoing basis to ensure condition and suitability for use. ∇ Plant, equipment and machinery to be fitted with noise reducing attachments where possible. (i.e. mufflers). ∇ Plant, equipment and machinery to be maintained in accordance with manufacturers specifications. ∇ Works to be completed during approved work hours. ∇ As applicable: install noise and vibration monitors to measure and record discomfort levels. ∇ Investigate noise complaints.

ASPECT	**Waste Management**		
Project Description	Waste generated from building and construction activities		
SHE System references	Procedure: Risk Management	Procedure: Environmental Management	General Requirements: Waste Management

IR	Impacts (consequences)		Risk Mitigation (controls)	RR
M	∇ Environmental pollution		General ∇ Provide waste bins to accommodate construction waste. ∇ ACM or contaminated waste is disposed of licensed disposal locations. ∇ No debris to be dropped/ outside of the waste skips. ∇ Waste bins to be in a suitable location with minimal impact from environment. ∇ 85% waste recycling to be achieved. ∇ Monthly RAP report provided by waste facility.	**L**

ASPECT	**Management of Substances**			
Project Description	Use of Hazardous Substances and Dangerous Goods			
SHE System references	Procedure: Risk Management	Procedure: Substances Management	General Requirements: Spills Management	Procedure: Environmental Management

IR	Impacts (consequences)		Risk Mitigation (controls)	RR
H	∇ Contamination of ground, air or water from spillage or leakage.		∇ Appropriate storage facilities used. ∇ Spill management provided.	**M**

			∇ Containers correctly labelled. ∇ Plant refuelling completed in approved locations. ∇ Manage spills in a manner which inhibits further contamination. ∇ Ensure substances use/storage has been included in worker SWMS. ∇ Ensure that site personnel comply with the conditions of use of such substances. ∇ Daily inspections of control measures to be conducted and immediately rectified as required. ∇ Environmental management requirements will be included in the Site Induction.	

ASPECT	**Haulage**		
Project Description	Access and Egress of vehicles throughout project delivery.		
SHE System references	Procedure: Risk Management	Procedure: Environmental Management	General Requirements: Air and Water quality management

IR	Impacts (consequences)		Risk Mitigation (controls)	RR
M	∇ Debris on roadways ∇ Exhaust emissions ∇ Noise generation		General ∇ Install control measures (i.e. water spraying, rumble grids, road sweepers) which limit the opportunity for dust, noise or spillage to occur. ∇ Loads to be covered prior to leaving the site.	**L**
H	∇ Impact on other road users ∇ On site congestion, hazards or incidents due to uncontrolled haulage routes		Traffic Management / Movement ∇ Comply with any approved Traffic Management Plan for external site traffic management. ∇ If required under planning, inform local community about the timing and scale of construction traffic impacts. ∇ Where practicable, co-ordinate deliveries and site activities with out of peak traffic hours. ∇ Monitor traffic flows	**M**

ASPECT	Foreign Object Damage (FOD)			
Project Description	Not applicable			
SHE System references				

IR	Impacts (consequences)		Risk Mitigation (controls)	RR
	∇		∇	

ASPECT	Management of Water Quality		
Project Description	Not applicable		
SHE System references			

IR	Impacts (consequences)		Risk Mitigation (controls)	RR

Annexure 1

Construction Traffic and Pedestrian Management Sub-Plan

TRAFFIC MANAGEMENT PLAN

CONSTRUCTION OF A 4 STORY SCHOOL BUILDING AND ASSOCIATED EXTERNAL WORKS AND LANDSCAPING

Document Preparation & Control	Document Review
Steven Roach Operations Manager - Link TMT	Alma Olovic Director - Link TMT Director
Document Approval	**Signature**
Client: ADCO CONSTRUCTIONS PTY LTD	
Hornsby Shire Council:	

CONTROL SHEET – SUMMARY UPDATES

Document Status	Brief Description or Section Revised	Date	Revision No
Draft Submission		09/01/19	0.0
Draft revision		10/01/19	2.2
Authorised TMP Revision 1	Addition to DA Conditions Driver Code of Conduct pg18,19	19/03/2019	2.3
	Successive Work activities pg14		
	Review and Monitor of Traffic Conditions		
	Emergency or Uncommon disruption Notification Plan pg19		
SSD Revision	Revised 'General conditions and content'	04/04/2019	2.4
	Appendix with Council and RMS Consultation		

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COUNCIL AUTHORISATION – DA/966/2017 ..... ***Error! Bookmark not defined.***

Foreword:

The attached documents; Traffic Management Requirement Checklist Assessment and Traffic Management Plan address logistic of traffic management during the construction of the school development.

The undertaking by Adco Construction to provide TMRCA and TMP affirms consideration of safety and environment for all, during the period of development.

Please note the TMRCA and TMP do not infer control measures for traffic on Edgeworth David Ave and Myra St, which are outside the perimeter of approved work zones.

Should any upgrades (or repairs) of associated road network be undertaken in concurrent timeline as construction, all traffic management measures for such works, shall fall under the jurisdiction of Hornsby Shire Council or its authorising entity.

Alma Olovic

Director

Link TMT Pty Ltd

Traffic Management Requirement Report

The Traffic Management Requirement Checklist Assessment (TMRCA) addresses the Conditions, approval requirements for this project and contracted works. The objective of the TMRCA Plan is to ensure that construction traffic ingress and egress, is managed effectively and that adjacent properties and road network are not affected.

TMRCA shall provide recommendations in compliance with Hornsby Shire Council and RMS standards. Thereby, providing appropriate management of traffic and minimising impact to motorists, residents and the emergency services.

TMRCA, is to ensure that planned works adhere to and comply with, the proposed Site Management Plan and Development Approval (Adco Constructions) requirements for; Management of movement of construction vehicles (Plant and Equipment) to the proposed project via transport corridor. Specifically, this Plan shall recognise, be consistent with and comply with the traffic configuration of the local road network as it exists at varying stages, during the proposed project.

In addition to the Traffic Management requirements, this Plan shall comply with:

- the requirements of relevant authorities, including RMS, NSW Police, State Emergency Services, Hornsby Shire Council.;
- Roads Act (NSW) and all other applicable legislative requirements;
- certificates, licenses, consents, permits and approvals, including in respect of working hours; and
- all other parts of the proposed construction Contract.

In accordance with the General Conditions of the proposed construction Contract, this plan shall:

- detailed traffic management procedures for the site;
- provide traffic management plan detailing impact to existing traffic patterns (vehicular and pedestrian) and changes to general transport, routes and services required;
- ensure the appropriate notification of relevant emergency services prior to implementing any traffic modifications (such as temporary road closures or changes to road access);
- provide plan of action to ensure safety of public vehicle road users, cyclists and construction personnel of both Adco Constructions and its subcontractors;
- advise changes to traffic usage patterns as well as special events or traffic embargoes;
- detail management of maintenance requirements, emergencies and incidents;
- coordinate traffic management procedures and plans with sub-contractors and/or parties;
- consider impacts on residents and/or commercial enterprises on traffic routes (including traffic movements);
- detail objectives for spoil management & transportation from/to site;
- detail roles and responsibilities of personnel and subcontractors;
- update Traffic Management Requirement Report as required, or at the direction of Hornsby Shire Council or RMS.

Traffic Management Plan

INTRODUCTION

Adco Constructions is the Managing Contractor for the Waitara Public School Project, which comprises construction management and commissioning of the Works.

This TMP seeks to outline optimum management of traffic associated with construction.

The TMP addresses the Conditions of Approval requirements for this project, as well as drawing on the Review of Environmental Factors (REF) and RMS - G1 Job Specific Requirements.

The objective of the Plan is to ensure that traffic control elements, management of works within construction site, logistics of construction traffic, access issues and spoil removal are managed with minimal impact to environment, motorists and residents. The TMP is to ensure that it complies with the requirements of all authorities including (but not limited to) RMS, Hornsby Shire Council requirements, STA, Police, and Emergency services.

PURPOSE

The scope and purpose of this Traffic Management Plan is to ensure that Adco Constructions complies with DA and Contract requirements regarding traffic management at stages of; pre-commencement, during and completion of construction; Maintaining minimal impact to traffic flow during works; and compliance to 'work area evacuation' in case of emergency.

PROJECT INFORMATION

-Demolition of the existing building;

- Construction of a new 4 storey school building; includes;

-Pavement & kerb construction with minor change in the horizontal and vertical alignment of the existing roadway/ footpath areas where required

Further clarification of Scope is defined in RMS G1, Item 1.1 Description of Works. The main elements of the work in respect to traffic management include provision for:

- Maintaining 2-way traffic.
- Management of traffic accessing construction site;
- Management of works and construction traffic within site;
- Commissioning of temporary safety fencing, signposts and pavement marking during construction works. Subsequent reinstatement of permanent guideposts, signage and road/line marking at completion, and in accordance with RMS standards;
- Safe transportation of spoil between Work Areas to the spoil relocation area.

CONDITIONS OF USE & ACKNOWLDGEMET OF RECEIPT

This Traffic Management Plan is issued as a commercially confidential document and always remains the property of Link Traffic Management and training.

If a Controlled Copy of this Plan has been issued to Adco Constructions, acknowledgement of its receipt is to be notified to the Project Manager within seven days to ensure the receipt of amendments.

Please note that Link Traffic Management & Training (TMT) accepts no liability for the implementation or execution of this TCP, unless undertaken by authorised Link TMT personnel. Also, all Traffic Control plans are copyright property of Link TMT and are not transferable; unless authorised by Link TMT in writing.

TCP Complies with Australian Standards 1742-3 and RMS Traffic Control at Work Sites Manual V5.0

Project Management Contact List

The following list provides contact details of project management team:

Name	Position Title	Contact Details
Dean Israel	Project Manager	0413 777 152
Malcolm Dorn	Site Manager	0411 525 835
Mick Baker	WHS Manager	0417 597 656
Amirtha Vaseeharan	Hornsby Shire Council	0409 735 395
Alma Olovic	Link TMT - Director of Operations	0416 534 553
Steven Roach	Link TMT -Operations Manager	0457 216 054

Distribution Control & Approval of this Plan

CONDTIONS OF USE

This Traffic Management Plan is issued as a commercially confidential document.

CHANGES AND APPROVAL

APPROVAL OF PLAN

Approval of Plan and Record of Issue will be via the Project Manager.

REVIEW BY PROJECT MANAGER

Project Manager will review and provide comment on the Plan.

MANAGING MASTER PLAN

The master/most current version of the Plan is available electronically. Adco Constructions project team members will have access to this plan via the Link TMT I-net.

CHAGES OF PLAN

All minor changes to the Plan may be made by Adco Constructions. Where TMP changes impact on the general concept of the plan, then a further revision of the Plan will be prepared and reissued by Link TMT.

ISSUE OF PLAN

The Project Manager will ensure the Approved Plan is available to RMS/Authorizing bodies, site contractors and site personnel.

DISTRIBUTION POLICY

The team members, who have been issued with this plan, will be sent amendments as they occur, and it is their responsibility to discard superseded pages and insert new pages.

FURTHER TRAINING AND INDUCTION TO PLAN

If required, further training & induction to the Plan; this will be conducted by an authorised person; and a record of induction will be completed by the employee/contractor/inductee.

Relationship with Other Plans

This Traffic Management Plan forms part of the overall Construction Environmental Management Plan.

The key Management Plans that should be read in conjunction with this Plan include:

No.	PLAN DESCRIPTION	DOCUMENT NUMBER
1.	*Site Management Plan*	*See pg22 of this document*
2.	*Authorised Architectural Plans*	*18159-A-WD-00-02 P4* *18159-A-WD-00-01 A* *18159-A-WD-10-01 A* *18159-A-WD-10-02 A* *18159-A-WD-10-03 A* *18159-A-WD-10-04 A* *18159-A-WD-10-05 A* *18159-A-WD-30-01 A* *18159-A-WD-30-02 A* *18159-A-WD-30-11 A* *18159-A-WD-30-12 A*
3.	*State Significant Development Consent Conditions*	*SSD 8574* *Condition B22*

General Conditions and Content

The checklist detailing the verification process to ensure these requirements has been met in this Traffic Management Plan for the Conditions of Approval is detailed below.

GENERAL CONDITIONS & CONTENT	WHERE ADDRESSED
A Traffic Management Sub-Plan (TMP) must be prepared as part of the EMP in consultation with relevant Council(s) (and their local traffic committee) and the RMS (and their regional traffic committee). The TMP must include information on the following matters relating to the Project:	
a) the results of all necessary investigations (such as traffic modelling) detailing impacts on all existing traffic conditions, including the staging of	All sections

GENERAL CONDITIONS & CONTENT	WHERE ADDRESSED
construction works to minimise road closures and delay or detours to traffic and redistribution of traffic;	
b) access, entry/exit locations and deliveries to construction sites and site compounds, including minimising the disruption from construction vehicles entering and leaving construction sites and site compounds;	Pg13 & 22 Site Plan
c) any changes to existing number and width of traffic lanes, intersection geometry and signal phasing/priority;	NA
d) impact on bus services particularly at bus stops and regional interchanges;	Pg15 & 17
e) impacts on relocation of existing station access facilities at affected stations;	N/A
f) maximum and average truck volumes and expected hourly distribution with specific estimation of peak period construction traffic generation;	Pg17
g) details of spoil destination sites and routes to/from such sites and nature of loads and materials;	Pg15
h) truck ingress and egress routes;	Pg21 and TCP
i) temporary traffic arrangements, including the identification and promotion of alternative routes;	Pg11 TCP
j) heavy vehicle queuing on public roads unless otherwise agreed by the relevant Council(s) and the RMS;	Pg17
l) the impact on pedestrian and bicycle facilities, including measures to ensure safe pedestrian and cycle routes and access	Pg17
m) access to adjoining properties and side streets.	Pg17
n) impacts and changes to on and off-street parking and requirements for any temporary replacement provision;	Pg17
o) communication and liaison methods and procedures between contractors, RMS and Council(s) and for communicating traffic changes to the community and road users;	Pg15
p) the timing of all changes/measures to be implemented for the TMP.	Pg14

GENERAL CONDITIONS & CONTENT	WHERE ADDRESSED
q) traffic redistribution resulting from road or lane closures and measures to mitigate impacts on the road network; management measures during track possessions,	Pg17 - 19
r) management measures during track possessions, organisation of bus set-down locations for replacement rail buses and their interaction with existing bus operations;	N/A
s) construction employee traffic generation and parking demands particularly management of shift time change overs to avoid peak periods;	Pg18
t) the use of cranes on public roads;	Pg17
u) a response plan which sets out the proposed response to any traffic, construction or other incident;	Site Evacuation Plan
v) appropriate feedback, monitoring, review and amendment mechanisms;	Compiled Monthly Site Safety Report
w) cumulative impacts of multiple construction sites;	N/A
x) measures to manage traffic flows around the area affected by the Project, including as required regulatory and direction signposting, line marking and variable message signs and all other traffic control devices necessary for the implementation of the TMP and TGS	Pg19 Review and Monitor Traffic Conditions
y) identify any regulatory measures to improve the efficiency of traffic conditions.	Pg19 Review and Monitor Traffic Conditions
The performance of all project traffic arrangements must be monitored during construction. Any additional traffic and public transport management measures as legally required by the RMS must form part of the TMP.	Pg20
Any changes to bus operations agreement must be reached on the timing and requirements for change to bus operations, infrastructure and incorporated into the TMP. Notification of changes to bus operations added to TMP.	Pg20-21

Construction staging, proposed sequence of works & timing

The worksite locations described below are extracted from the Project Management Plan- Construction Staging.

The Construction site is completely enclosed with Two access point for construction vehicles and plant located on Myra St (Gate 2) and Highlands St.

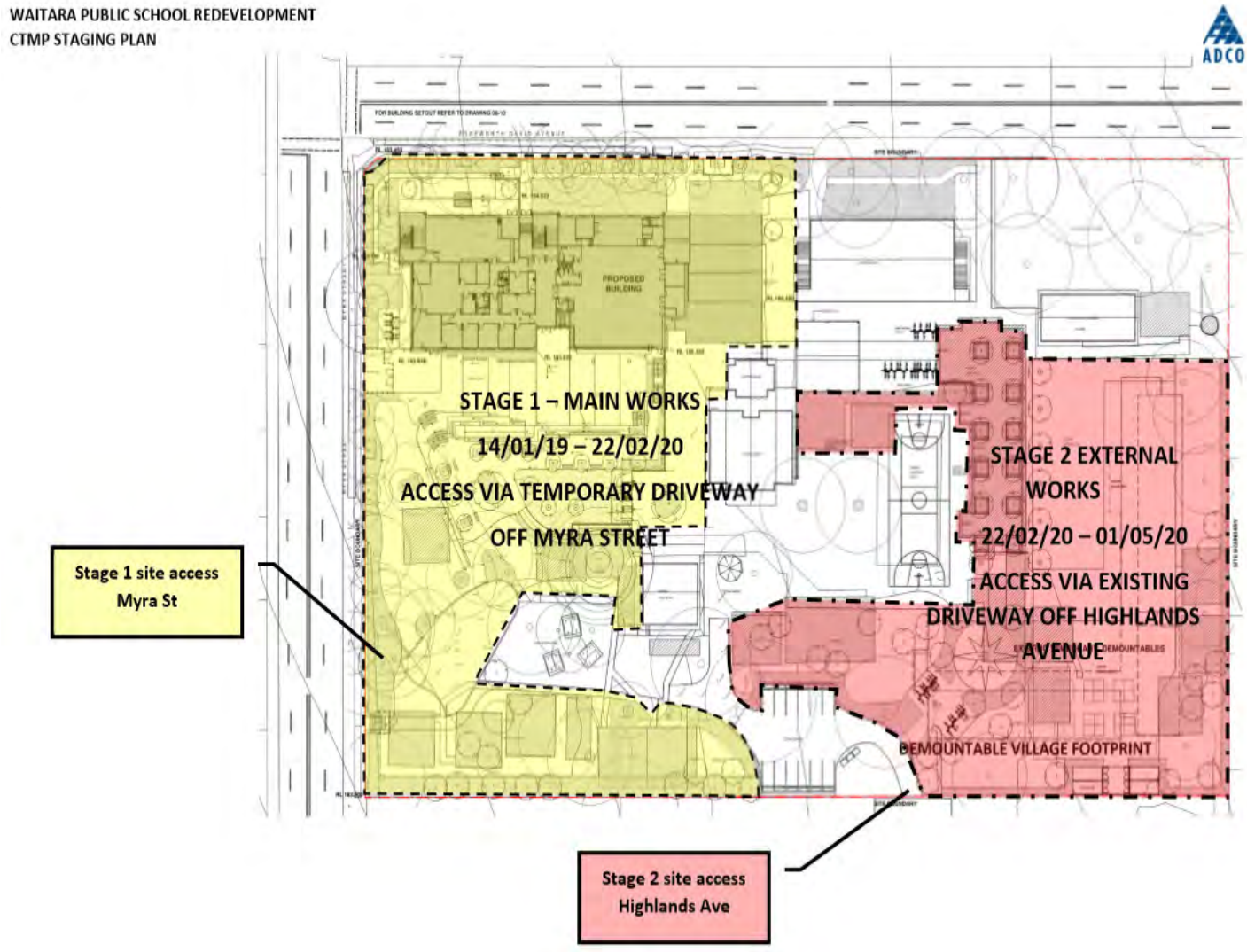
STAGE 1

Construction will commence with the main building between 14/1/18 – 22/2/19

STAGE 2

External Works and Landscaping 22 February 2020 – 01 May 2020, note access to Stage 2 works will be via the existing school entry at the northern end of Highlands Avenue.

Spoil will be relocated to a licensed tipping facility.



Stage 3.

Formal Completion

Commissioning

Disestablishment of site offices, Plant and Equipment

Adco Constructions shall continue to undertake all precautionary measures to ensure safety of site personnel and project inspectors and the conclusion of works.

Proposed Programme

The approximate programme for implementation of each work area is as follows:

Work Area	Implementation
Site Establishment	*January 2019*
Demolition and Excavation	*May 2019*
Foundations	*June 2019*
Concrete Structure	*July to September 2019*
Roofing and Cladding	*September - November 2019*
Completion	*July 2020*

SITE POSSESSION

Site Possession is currently scheduled as follows:

Day	Hours	Activity
Monday - Friday	0700 - 1700	Construction
Saturday	0800 - 1300	Construction
Sunday	No Work	
Public Holidays	No Work*	

Note: *Site works shall be planned to allow for shut-down during public holidays.

Managing Cumulative Impacts

SUCCESSIVE WORK ACTIVITIES

The construction site is situated adjacent to residential streets and rural properties. The construction team and its subcontractors are aware and conscious that residential impact is to be minimal. Although the program of works indicates that there are concurrent activities in all sections of the program, the activities are staged successively, and as such, cumulative impacts of the construction are not expected to be significant.

REVIEW AND MONITORING OF TRAFFIC CONDITIONS

Adco Constructions Supervisor and Senior Project Engineer are responsible for monitoring traffic conditions. In the event that construction traffic does have a negative impact on traffic flow and associated road network, Adco shall liaise Link TMT, Hornsby Shire Council and RMS for reactive planning.

NOITFICATION PLAN

Link TMT will notify the public and local residents and businesses 24-36 hrs prior to any closures, may be required by letter-drop to residents and business within perimeter of construction site.

COUNCIL AND RMS NOTIFICATION

Any significant alterations to work staging, planning and/or significant impact to RMS or Council authorisation will be notified by Adco Construction Site Manager.

Work Area Assessment & Impacts

This section details the individual requirements for the work area, and is based largely on the findings of REF- RMS Review Environmental Factors:

Existing and Forecast Traffic (ref RMS Review Environmental Factors 8.1.12)

Assessment of traffic volumes are based on Traffic Volume Data –Estimates attained from RMS, while outdated, indicate only a marginal increase in volumes. For the purpose of this project, data was researched and collated by Link TMT, which indicates the following statistics:

- AADT (1992) 4432 – growth p.a. 1.2%
- AADT (2012) 5626

(7% of which are heavy vehicles)

It is anticipated that at the height of the project up to 20+ additional heavy vehicle movements per day would be experienced. Typically, however, an additional 10 heavy vehicle movements per day would be anticipated.

Spoils from site will be minimised by way of environmental treatment (mulching etc) carried out onsite. Other spoils not recyclable will be transported to authorised waste disposal location.

Implementation of Traffic Management

This Traffic Management Plan shall be a working document for the duration of the Contract, and read in conjunction with Vehicle Movement Plan, Site Safety Management Plan and Traffic Control Plans. Any amendments to TMP shall be documented.

A review of VMP and TCP will be completed to reflect any necessary adjustments. Brief characteristics of each

document are as follows;

Traffic Management Plan – Management of contract conditions and safety of site personnel in relation to site access.

Vehicle Movement Plan - Movement of construction traffic, through and around work site.

Safety & Environmental Management Plan – Policies, work methods, audit forms relating to provision of Traffic Control

Traffic Control Planning – Control measures and Direction for vehicles, cyclists and pedestrians, and their movement along the existing road network.

- All Traffic Management and Control plans are to be read in conjunction with the Site Construction Plan.

- Adco Constructions objective is to maintain access and existing traffic movement requirements at property accesses and intersecting road, according to TMP and TCP.

- Two-way access shall be maintained at all times for traffic in both directions with minimum lane widths of 3.2meters.

- Adco Constructions shall be responsible for the safe movement of work traffic and workers into and out of the compound, working area, in accordance with RMS G10.

- Provision for the safe movement of all traffic into and out of the site shall be in accordance with the requirements of RMS G10.

- Prior to commencement of work, Road Occupancy Licence (ROP) is to be obtained from the Hornsby Shire Council for Traffic Control Plans (attached and shall be held current, for duration of the contract.

Traffic Management During Construction

INGRESS & EGRESS – CONSTRUCTION VEHICLES

Construction materials, plant and equipment would be transported by trucks into and out of the Work Areas. Transport vehicles are expected to include excavators, tippers, truck and bogies, semi-trailers, passenger vehicles, and small plant.

All vehicles would approach the via the south bound lane of Myra St during stage one.

All vehicles would approach the via the Eastern Lane of Highlands Ave during Stage 2.

All vehicles will exit the two access points moving in the direction of travel only. Where major movements are required per shift, Traffic control will manage pedestrians and site access and egress

Spoil material excavated from site will be recycled onsite usage if clean waste OR transported offsite to authorised contaminated waste disposal location.

HEAVY VEHICLE QUEUEING

All Heavy vehicle queuing will be minimal with the exception on 0600 -0730 which will be located outside of the work areas, note: Any unforeseen cueing will be carried out offsite. At location Highlands Ave

TRUCK VOLUMES

Assessment of traffic volumes is difficult as little information is available for this area. However, for the purpose of this project, data was cited and referenced in *RMS Review Environmental Factors 8.1.12*.

It is anticipated that at the height of the project up to 6 to 10 additional heavy vehicle movements per day would be experienced. Typically, however, an additional 8 heavy vehicle movements per day may occur at Myra and Highlands Avenues.

ACCESS TO ADJOINING PROPERTIES

Access to residents or businesses sharing boundaries with worksite will be provided by site traffic control or traffic signage indicating path of through travel. Access would be maintained at all times wherever practicable.

TRAFFIC DIVERSIONS

There are no foreseeable reasons for road closures. However, if at times a temporary or intermittent closure is necessary; traffic and cyclist shall be diverted to alternate side of road or routes of travel under guidance of traffic control and permits from Council to do so.

PEDESTRIANS

Pedestrians are expected to use existing footpaths which are present in all directions around the work areas. In the case of impact to pedestrian or cyclist pathways being blocked or interrupted due to site works; traffic controllers will be engaged to facilitate safe passage for pedestrians and cyclists. All alternative facilities and locations for pedestrians and cyclists will be clearly signposted

USE OF CRANE & LIFTING EQUIPMENT

Should lifting equipment be required, notification and permits application will be submitted to Council. If crane is to be positioned on road; and impede traffic flow, notification will be distributed to affected residents, businesses, public transport and emergency services.

EMERGENCY

Traffic Control and Adco Constructions Management team will ensure the route of travel to Safe Zone, is cleared for all site personnel and contractors. All plant and equipment will remain in work zone during this period. The provision of alternative facilities and locations for pedestrians and cyclists – Particular regard shall be given to the safety of schoolchildren; and impacts on roads near schools at pick-up and drop-off times;

IMAPCT ON PUBLIC TRANSPORT

School bus stop will not be affected by the proposed works Drop off and pickup areas will not be affected.

Residents and commercial enterprises in the vicinity of the work area will be notified of the changes in accordance with Section 0 of this Plan.

Minimal impact to public transport route, however STA and other regional bus services and Taxi Services shall be notified of proposed works and any significant changes durign the period of works.

CYCLIST ACCESS

'Two way' access to be maintained at all times, including the shoulder on both sides. During construction, cycle traffic will retain through access via the use of existing shoulders.

SITE PERSONNEL PARKING

Parking will be provided onsite where possible for employees, subcontractors and site visitors.

TRAFFIC MITIGATION DURING CONSTRUCTION

The Construction site is completely enclosed with two access points for construction vehicles and plant. Any unforeseen queueing will be redirected by traffic control to Highlands Ave

The performance of traffic control measures will be monitored by observation to assess its performance. If the measures taken to control traffic perform inefficiently, appropriate changes will be implemented to maximise efficiency. This will be done in conjunction with Hornsby Shire Council, Adco Constructions and Link TMT.

If any operational problems are experienced, consideration will be given to use traffic controllers to manage traffic congestion.

TRAFFIC CONTROL REQUIREMENTS

All site ingress and egress points will require Traffic Control in accordance with the RMS Guideline *Traffic Control at Work Sites*, and *Australian Standard 1742.3*.

The main ingress and egress points for this Work Area are within the boundaries of Hornsby Shire Council road perimeter.

Safe and simple traffic control for all road users shall be provided at all site access points in accordance with standard requirements.

DRIVER CODE OF CONDUCT

It is the responsibility of all persons who are required to drive into the worksite *(including construction employees, sub-contractors, delivery drivers, and others*); to ensure they enter and exit the worksite with caution and care. As the site is governed by NSW Department of Education regulations; All persons entering, walking or driving, into and out of the worksite must do so in with full consideration of safety, courtesy and RMS road rules.

- Minimise the impacts of earthworks and construction on the local and regional road network conditions
- Minimise conflict with other users
- Minimise road traffic noise
- Ensure truck drivers follow specified routes

PROVISION FOR OTHER USERS

As the Construction site is completely enclosed with two access points on Myra St and Highlands Ave. General road users shall not be affected by the project (*road users include, but are not limited to cyclists, emergency vehicles and heavy vehicles*). The requirements are detailed below:

- No cycle route shall be affected by the project
- Provision for cyclists has been assessed as per the RMS's Traffic Management at Worksites Manual.
- Emergency vehicles shall have unimpeded access during the construction phase.
- Heavy and articulated vehicles may travel through during construction phase.
- No site access for vehicles between 0830 – 0930 and 1430 – 1530 unless access points are controlled by a qualified traffic controller.

Note: Where access is unavoidable, both travel path and pedestrian paths to be managed by onsite Traffic Control Contractor inside exclusion times.

At times, contracted works may impact on access of local residents to road network; in this event, traffic controllers will be engaged to facilitate safe through travel.

EMERGENCY or UNCOMMON DISRUPTION NOTIFICATION PLAN

In the event of emergency Adco Constructions shall notify all emergency response stakeholders and advise of the nature of emergency, site locations and potential impact to traffic flow. The notification is to be prepared by Adco or Link TMT; and communicated to Traffic Live NSW, RMS or local police station (traffic division).

http://m.livetraffic.rta.nsw.gov.au

www.service.nsw.gov.au/transaction/report-traffic-incident

call to RMS 131700; and local radio station for broadcast of 'potential congestion'

EMERGENCY RESPONSE PROCEDURE

In the event of the event of emergency and management of incidents, the Project Emergency Controller shall make direct contact with the relevant emergency services as required.

Any incident or emergency on site; (or one that is contained within the streets associated with construction work), the site 'Emergency Response Procedures' will be initiated by Site Manager.

Note: The site and traffic conditions pertaining to works on the project will be constantly monitored by the Project Manager. Any incidents occurring on the road or within the work zone and or affecting the smooth running of road traffic will be notified to Hornsby Shire Council.

For details of primary contacts for this project, please refer to Project Management Plan.

Review and Monitoring of Traffic Conditions

Monitoring of traffic flow and the effective operation of egress and ingress shall be maintained by Project Manager. The Project Manager is responsible for the traffic management subcontract and will liaise with the subcontractor to gain an understanding of any arising traffic management concerns.

The Project Manager is responsible for the coordination of the activities of work crews on site during installation, inspection, testing, commissioning and servicing and subsequently has an understanding of the operations across the worksite that make up the works under the project.

Reports of any traffic conditions which may be of concern will be reported back to the representatives from HORNSBY SHIRE COUNCIL as required.

Lane, Geometry and Signage Arrangements

The temporary road signage can be viewed in Traffic Control Plans.

No further changes are proposed (either by number or width) nor intersection geometry.

Car Parking (temporary) on site

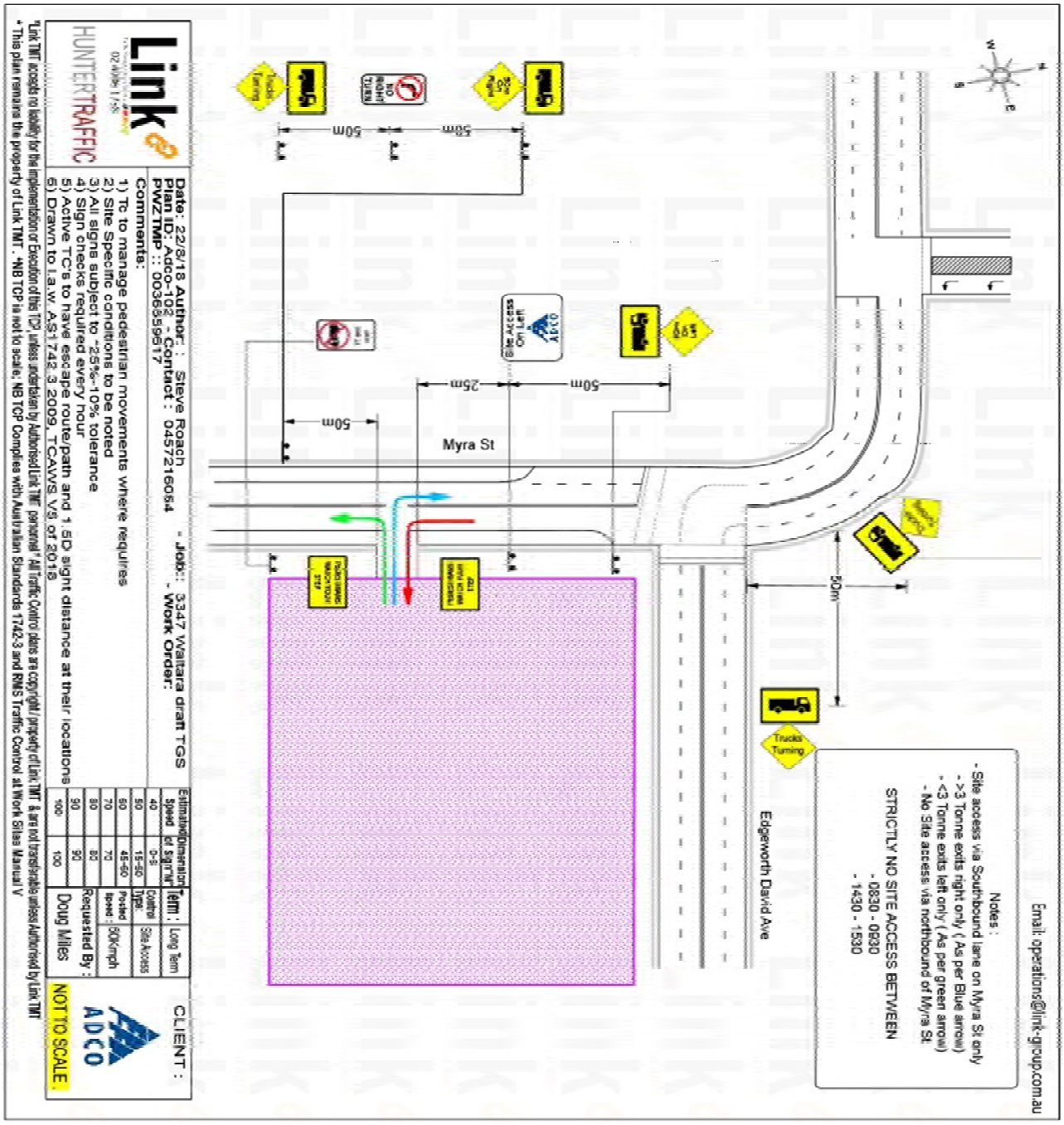
Site Compound – On Site

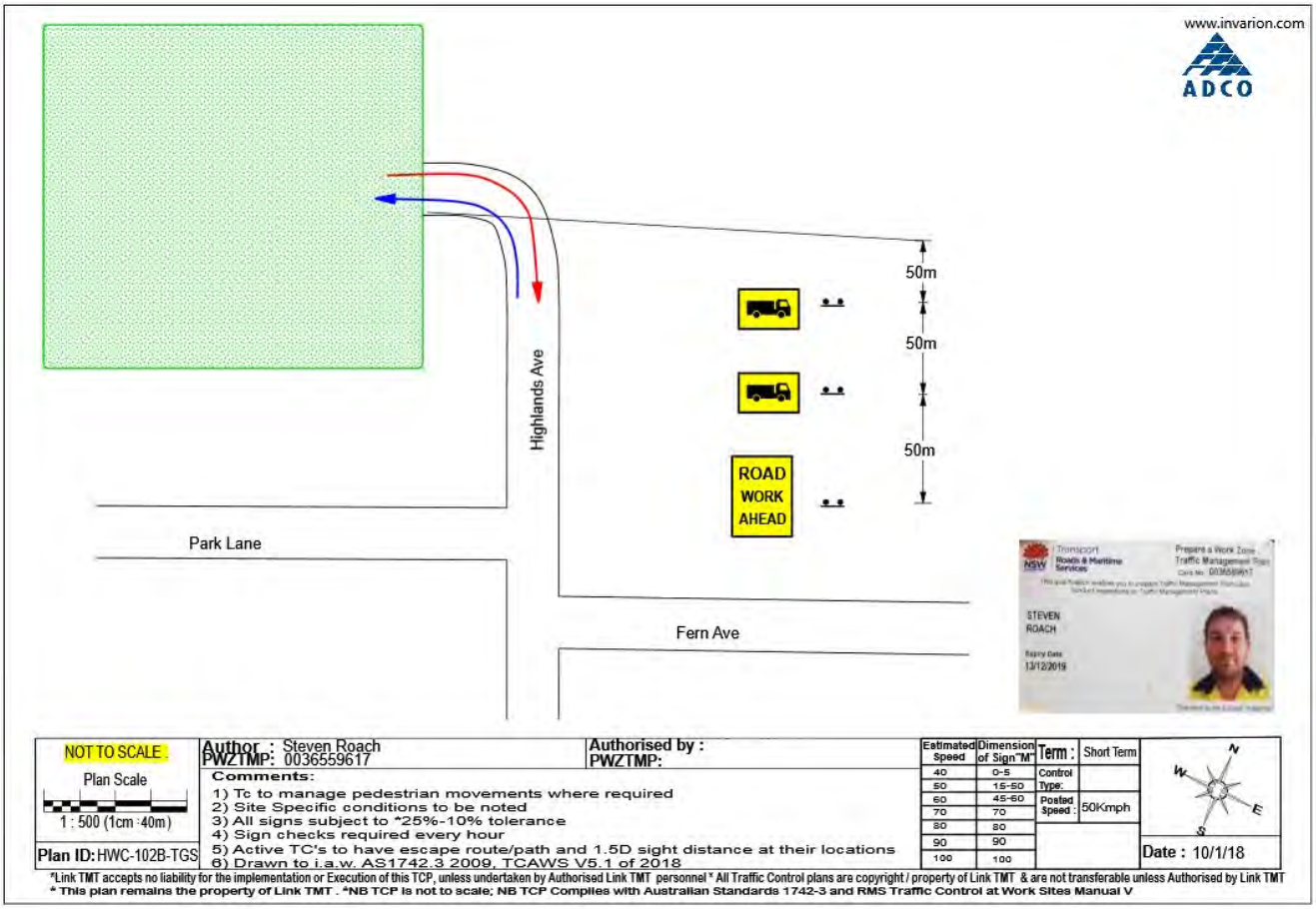
Stockpile Site – On Site

ANNEXURE

ROP APPLICATION – Hornsby Shire Council

TRAFFIC CONTROL PLANS





VEHICLE MOVEMENT PLANS

Stage 1

See Traffic Control Plans

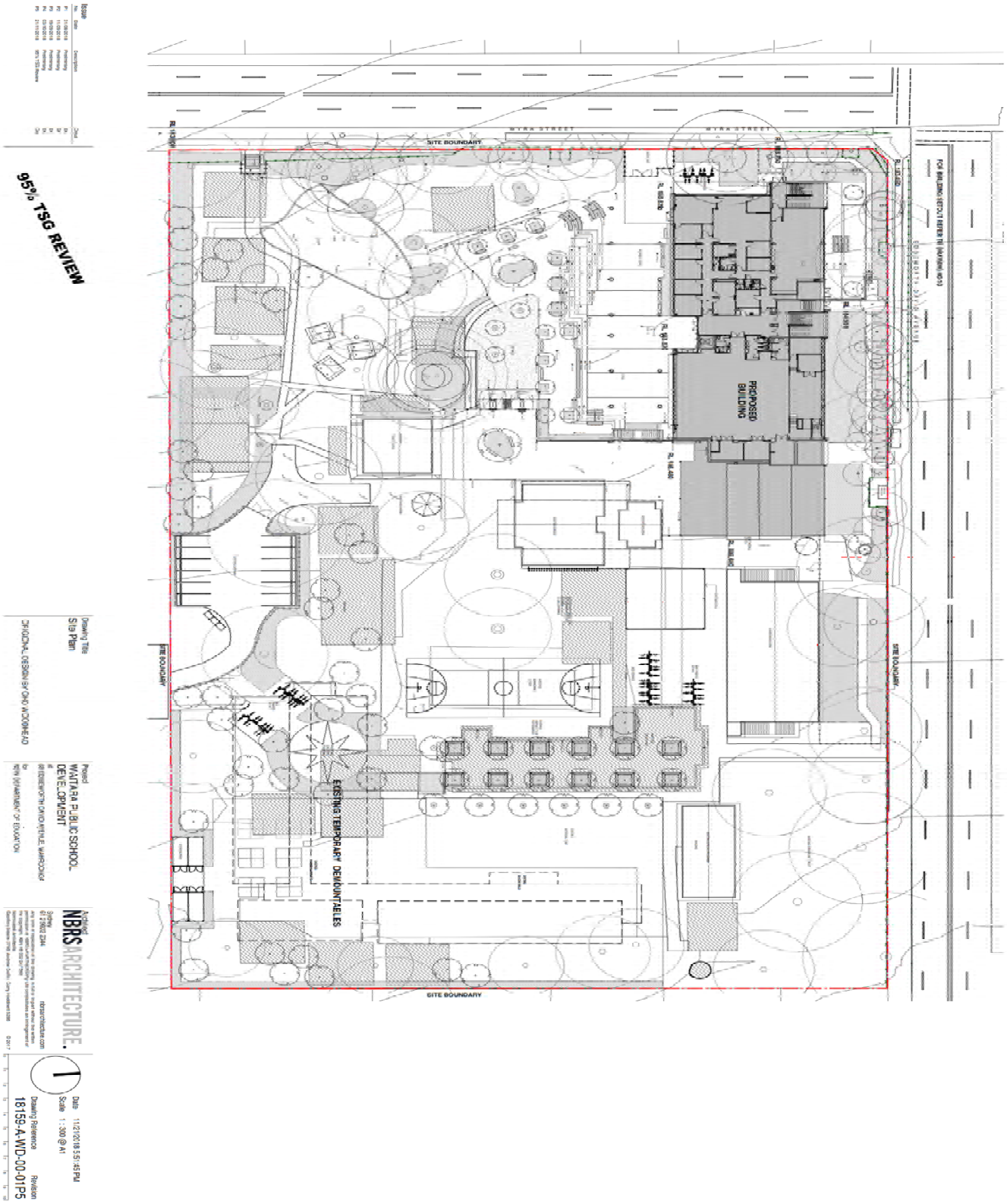
Stage 2

See Traffic Control Plans

EVACUATION PLANS

See 8.5

SITE PLAN


95% TSG REVIEW
SITE BOUNDARY
WYRA STREET
PROPOSED BUILDING
EXISTING TEMPORARY DEMOUNTABLES
SITE BOUNDARY
SITE BOUNDARY
SITE BOUNDARY
Drawing Title
Site Plan
Project
WAITARA PUBLIC SCHOOL
DEVELOPMENT
NBRS ARCHITECTURE
Date
11/12/2018 5:55:45 PM
Scale
1:300 @ A1
Drawing Reference
18156-A-WD-00-01
Revision
P5

TRAFFIC MANAGEMENT REQUIREMENTS INSPECTION REPORT

General Information the Traffic Management Requirements Inspection is a tool that site supervisor or project managers should use to assess the requirement of a roadside traffic management requirement.

Date	3/04/2019	**Time**	0900	**Project**	Construction
Project Manager	Dean Israel	**Site Supervisor:**			
HSSE Coordinator		**Person Undertaking Inspection:**		Steve Roach	

Work Details

Proposed date	**ASAP**	**Start Time**	**0900**	**Finish Time**	**1500**
Location					
Road Owner	Hornsby Shire Council	**Other:**			
Description of works	Construction of a 4 storey School Building				
Attachments	**TGS, REQ assessment, TMP**				

Traffic Management Assessment

HVA requirements	**No**		
Road Type	**Asphalt**	**Traffic Speed**	**40 Km/h**
Traffic & Workers Clearance (TCAWS 9.5.2)	**1.2m - 3.0m * 60Km/h**	**Site Risk Rating**	**High**
Task Duration:	**1 year approx.**		
VPD Source:	**Onsite Inspection** http://www.rms.nsw.gov.au/about/corporate-publications/statistics/traffic-volumes/aadt-map/index.html#/?z=6		

Hazards / Risks

VPD at the Worksite	**1000+**	**RMS Station Id**	
		Are there rough or unsealed surfaces	**No**
Are there pedestrians through the worksite	**Yes**	**Is there poor advanced sight distance to the worksite (e.g. bend, crest, etc.)**	**Yes**
Additional Hazards	**School Children and associated busses**		

Controls

Reduce speed limit through the worksite?	**No**	**Control Type:**	**Various**
Memorandum of Consent required?	**Yes**	**Traffic Management Plan required?**	**Yes**
Pedestrian traffic to be controlled?	**Yes**	**Traffic controllers required?**	**Yes**
Hazardous materials,	**TBA**	**Plan Type**	**Site Specific**
Additional Controls	**To be advised by site management**		

TRAFFIC MANAGEMENT REQUIREMENTS INSPECTION SIGN-OFF		
Name / Title	**Signature**	**Date**
S. Roach		10/1/18

ONSITE TRAFFIC MANAGENT AUDIT FORM

The Traffic Management Inspection Checklist is a tool that employees should use to assess the implementation and execution of a Traffic Management Plan. To complete this Traffic Management Inspection Checklist simply tick 'Yes', 'No' or 'N/A' to the questions in the 'planning' box located on the left-hand side of the table.

Date: _____ Time: 840 Project: _____

Location of site: _____

Activity being undertaken: _____

Project Manager: _____ Site Supervisor: _____

Coordinator: _____ Person undertaking review: _____

Road type (i.e. asphalt) _____ Clearance between workers and traffic _____

Worksite traffic speed _____ 'Normal' traffic speed through area _____

	PLANNING	YES	NO	N/A
1	Has a traffic management plan been generated and implemented?			
2	Is the plan available on site for inspection?			
3	Is the plan relevant for the work?			
4	Are any required written authorisations, or consents for speed limits, in order?			
5	Are documented changes (if any) to the plan available for inspection?			
6	Have roadwork's speed limits been determined correctly? (Refer to Australian Standards referenced in the Safe Work Procedure)?			
	ADVANCE WARNING / SIGNAGE			
7	Are all roadwork's signs and devices installed according to the plan?			
8	Have any contradictory, distracting or additional signs or markings been covered up or removed?			
9	Are signs appropriate for current conditions? (e.g. workmen signs not displayed when no workers on site; road conditions signs after worksite freed)			
10	Is signage suitably placed, especially for vehicles approaching at high speeds? (e.g. check sight distance; advance warning sign distance; height of signs; vehicle queue length)			
11	Are the signs free from damage and defect? (e.g. easy to read; check shadow and glare issues)			
12	Are sign mountings secure, stable and not a hazard to road users if struck?			
13	Are signs in pairs when needed? (note: recommended on high-speed high-volume roads and multi-lane roads)			

14	Are sign sizes correct? (Refer to Australian Standards referenced in the Safe Work Procedure)?			
	WORKSITE			
16	High visibility clothing appropriate for conditions and used correctly? (e.g. day/night conditions; meet AS 4602-1999 and AS 1906; clean; fastened; personal visibility)			
	WORK ZONE SEPARATION			
17	Are clearances (as stated in the referenced Australian Standards in the Safe Work Procedure) between workers and adjacent traffic being maintained?			
18	Have safety barriers (where used) been installed correctly? (e.g. units connected; recommended length; right end treatment installed; correct rating for speed zone)			
19	Has containment fence been installed where required? (e.g. workers / pedestrians / cyclists' separation)			
	OTHER ROAD USERS			
20	Has possible traffic congestion been considered and steps taken to avoid it?			
21	Have needs of other road users been provided for? (e.g. pedestrians, cyclists, wheelchairs)			
22	Has proper access to side roads and properties been provided?			

TRAFFIC MANAGEMENT INSPECTION CHECKLIST SIGN-OFF

Supervisor:

Signed _____ Date _____

APPENDICES

1. Email correspondence with Hornsby Council
2. Email correspondence with RMS / TNSW

Dean Israel

From: Dean Israel
Sent: Wednesday, 3 April 2019 12:46 PM
To: Dean Israel
Subject: FW: Waitara Public School temporary site entry in Myra St

---

From: Amirtha Vaseeharan <AVaseeharan@hornsby.nsw.gov.au>
Sent: Thursday, 17 January 2019 9:57 AM
To: Dean Israel <deani@adcoconstruct.com.au>
Subject: RE: Waitara Public School temporary site entry in Myra St

Dear Mr Israel

Councils Traffic and Road Safety Branch has no objections to the use of the CTMP supplied for the works via Myra Street, Wahroonga.

The temporary access levels should flush with the existing footpath and should comply with Council's Standards.

Yours faithfully

Amirtha Vaseeharan
Engineering Assistant | Design & Construction | Hornsby Shire Council
p 02 9847 6928 **m** 0409 735 395
e avaseeharan@hornsby.nsw.gov.au **| w** hornsby.nsw.gov.au **| f** facebook.com/HornsbyCouncil

Council acknowledges the traditional owners of the lands of Hornsby Shire, the Darug and Guringai people.

From: Dean Israel
Sent: Friday, 11 January 2019 2:26 PM
To: 'John Zhu' <JZhu@hornsby.nsw.gov.au>
Cc: Amirtha Vaseeharan <AVaseeharan@hornsby.nsw.gov.au>
Subject: RE: Waitara Public School temporary site entry in Myra St

Good Afternoon John,

Please find attached our CTMP for council's review, further we confirm acceptance of the restrictions stated below by Radek Zarzycki on the use of the proposed driveway during school zone times. Can you please come back to me at your earliest convenience with the next steps required to obtaining Councils approval. Greatly appreciate you urgent assistance with this.

Dean Israel
Project Manager

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From: John Zhu <JZhu@hornsby.nsw.gov.au>
Sent: Monday, 7 January 2019 12:05 PM
To: Dean Israel <deani@adcoconstruct.com.au>
Cc: Amirtha Vaseeharan <AVaseeharan@hornsby.nsw.gov.au>
Subject: FW: Waitara Public School temporary site entry in Myra St

Hi Dean,

Further to your conversation this morning, please action the comments provided by our traffic engineer.

Regards,

John Zhu
Engineering Designer | Design & Construction | Hornsby Shire Council
p 02 9847 6818
e jzhu@hornsby.nsw.gov.au **| w** hornsby.nsw.gov.au **| f** facebook.com/HornsbyCouncil

From: Radek Zarzycki [mailto:RZarzycki@hornsby.nsw.gov.au]
Sent: Monday, 7 January 2019 10:16 AM
To: John Zhu <JZhu@hornsby.nsw.gov.au>
Cc: Amirtha Vaseeharan <AVaseeharan@hornsby.nsw.gov.au>; Lesley Tipping <LTipping@hornsby.nsw.gov.au>; Alan Yang <AYang@hornsby.nsw.gov.au>
Subject: RE: Waitara Public School temporary site entry in Myra St

John,

The pedestrian movements at the driveway must by controlled by RMS certified staff at all times during school zone times.

Alternatively the construction gate must be closed and no movements permitted during that time.

The proposed right turn from the site into Myra Street must be prohibited during school zone times.

A comprehensive CTMP is to be submitted to Council for review, see attached guide.

Regards,

Radek Zarzycki
Senior Traffic Engineer | Traffic & Road Safety | Hornsby Shire Council
p 02 9847 6684 **m** 0438 777 509
e rzarzycki@hornsby.nsw.gov.au **| w** hornsby.nsw.gov.au **| f** facebook.com/HornsbyCouncil

> **From:** Amirtha Vaseeharan [mailto:AVaseeharan@hornsby.nsw.gov.au]
> **Sent:** Thursday, 20 December 2018 10:56 AM
> **To:** Radek Zarzycki
> **Subject:** FW: Waitara Public School temporary site entry
>
> Hi Radek
>
> Please see the following request and let me know if you have any concerns.
>
> Regards,
>
> **Amirtha Vaseeharan**

Engineering Assistant | Design & Construction | Hornsby Shire Council
p 02 9847 6928 **m** 0409 735 395
e avaseeharan@hornsby.nsw.gov.au **| w** hornsby.nsw.gov.au **| f** facebook.com/HornsbyCouncil

Council acknowledges the traditional owners of the lands of Hornsby Shire, the Darug and Guringai people.

From: Thomas Dean [mailto:tdean@adcoconstruct.com.au]
Sent: Thursday, 20 December 2018 9:28 AM
To: Amirtha Vaseeharan
Cc: Malcolm Dorn; Dean Israel
Subject: RE: Waitara Public School temporary site entry

Hi Armirtha,

Thank you very much for your time on the phone.

Further to Dean's (ADCO) email below, please forward on all details (refer to attached) to your Traffic Department for their assessment.

We are hoping to construct the temporary driveway early January 2019 pending approvals.

Please advise the process of gaining approval for these temporary works?

Thank you.

Thomas Dean
Contracts Administrator

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W www.adcoconstruct.com.au

From: Dean Israel
Sent: Monday, 17 December 2018 1:29 PM
To: avaseeharan@hornsby.nsw.gov.au
Cc: Malcolm Dorn <MalcolmD@adcoconstruct.com.au>; Thomas Dean <tdean@adcoconstruct.com.au>
Subject: Waitara Public School temporary site entry
Importance: High

Good Afternoon Armirtha,

As per my phone messages over the last few days we are inquiring about a temporary driveway required for the soon to commence Waitara Pubic School Upgrade on the Corner of Edgeworth David Avenue and Myra Street.

In order for the new School works to proceed we need to create a temporary driveway off Myra Street into the school property for construction vehicles. Refer attached proposed traffic management plan and photo showing approximate location.

On completion of the project (12 months), ADCO would return the footpath and guttering back to its original design, the driveway is temporary only for the construction works.

Can you please call myself or my colleague Malcolm Dorn 0411 525 835 to discuss the process in gaining approval for this. Thank for your time.

Dean Israel
Project Manager

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Dean Israel

From: Dean Israel
Sent: Wednesday, 3 April 2019 1:06 PM
To: Mohammed.Ifran@rms.nsw.gov.au
Cc: Andreas Pashiou
Subject: Waitara Public School SSD Condition B22
Attachments: B22 Construction Traffic and Pedestrian Management plan ADCO-150-TMP v2.4.pdf

Good Afternoon Mohammed,

Appreciate you may not be the right person to receive this but in accordance with condition B22 of the State Significant Development (SSD 8574), we provide a copy of the council approved TMP for the project to RMS.

Dean Israel
Project Manager

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Dean Israel

From: Dean Israel
Sent: Friday, 8 March 2019 11:54 AM
To: 'Seb Howe'
Cc: Sean Moore; Andreas Pashiou; Rosie Majer
Subject: Waitara SSD Condition B33
Attachments: ADCO-150-TMP v2.1.pdf; Hornsby Shire Council Automated Response

Seb,

In regards to condition B33 I contacted the RMS Traffic Centre yesterday and was transferred finally ending up with the Road Occupancy Department. After explaining the project and the SSD condition to a number of people I was then directed back to Hornsby Council where I spoke to the head of Traffic Ruddock Zerzycki. He was well aware of our project and the previous approval given by council for construction vehicles to enter and exit the site via Myra Street. He simply suggested for me to send an email (see below) as a means of demonstrating "consultation". Please confirm this satisfies condition B33.

Dean Israel
Project Manager

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From: Dean Israel
Sent: Thursday, 7 March 2019 9:47 AM
To: 'hsc@hornsby.nsw.gov.au' <hsc@hornsby.nsw.gov.au>
Subject: Att Traffic Branch Waitara Public School Project TMP

Dear Rudduck Zerzycki,

As discussed we write to confirm ADCO will manage all construction traffic entering and exiting the site in accordance with the attached TMP previously approved by Amirtha Vaseeharan 17 January 2019.

Dean Israel
Project Manager

ADCO Constructions Pty Ltd
Level 2, 7-9 West Street, North Sydney NSW 2060
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W www.adcoconstruct.com.au

Annexure 2

Construction Noise and Vibration Management Sub-Plan

MATTHEW PALAVIDIS
VICTOR FATTORETTO
MATTHEW SHIELDS

Waitara Public School

Construction Noise and Vibration Management Sub-Plan

SYDNEY
9 Sarah St
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Project ID	20181559.3
Document Title	Construction Noise and Vibration Management
Attention To	ADCO Constructions Pty Ltd

Revision	Date	Document Reference	Prepared By	Checked By	Approved By
0	20/03/2019	20181559.3/2003A/R0/AW	AW		TT

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1 INTRODUCTION

Acoustic Logic Consultancy has been engaged to prepare a Noise and Vibration Management Sub-Plan for Waitara Public School to satisfy consent conditions for SSD 8574. This report addresses conditions B20(c), B23, C5-8, C10 & C15-21.

The issues which will be addressed in this report are:

- Identification of the noise and vibration standards which will be applicable to this project.
- Identification of potentially impacted nearby development.
- Identify likely sources of noise and vibration generation and predicted noise levels at nearby development.
- Formulation of a strategy to comply with the standards identified and mitigation treatments in the event that compliance is not achievable.

2 SITE DESCRIPTION

We note that this report does not address early works or demolition which has already been completed on the site. This assessment applies only to the excavation and construction works associated with new school development. Refer to Figures 1 & 2 for detail.

The development involves the construction a new four storey school building and associated works including tree removal, provision of additional car parking spaces and landscaping. Excavation and construction works anticipated are as follows:

- Bulk excavation of soil with 35 tonne excavator. All site vehicles are proposed to enter the site from Myra Street, as indicated in Figure 2.
- Bored piling of foundations in shale subsoil. Piling is currently scheduled to extend for approximately 8 days.
- Use of electric/mobile cranes;
- Erection of building structure (powered hand tools for formwork, concrete pump, vibrators). Concrete pumping is generally planned to be located centrally within the site, as indicated in Figure 2. Generally, two concrete pours are expected for each level of the building.
- Façade/roof construction (powered hand tools)
- Landscaping (front end loaders etc).
- Internal fit out of school buildings.
- A 2.4m high hoarding is proposed to be erected to all boundaries of the site which adjoin the operational portions of Waitara Public School.

In accordance with Condition C5, hours of work are as follows:

- Monday to Friday: 7am – 5pm
- Saturday: 8am – 1pm
- Sundays or Public Holidays: No work.

2.1 RECEIVER LOCATIONS

Sensitive receiver locations are presented in Figure 1 and detailed below. These locations will be used as a basis for this assessment.

- **R1**: Residential dwellings at the rear of the school to the south and east, at 2-10 Ingalara Avenue and 34 & 39 Highlands Avenue.
- **R2**: Residential dwellings to the south of the site, at 36-46 Myra Street.
- **R3**: Residential dwellings to the west of the site, at 37-57 Myra Street.
- **R4**: Residential dwellings to the north of the site, at 81-93 Edgeworth David Avenue & 2A Jubilee Street
- **C1**: Childcare centre to the north of the site, at 67 Edgeworth David Avenue.

Additionally, Waitara Public School adjoining the site will remain in operation during the works.

Project Site

Residential Receivers

Childcare Centre

Unattended Noise Monitor

Figure 1 – Project Site, Noise Receivers and Measurement Locations

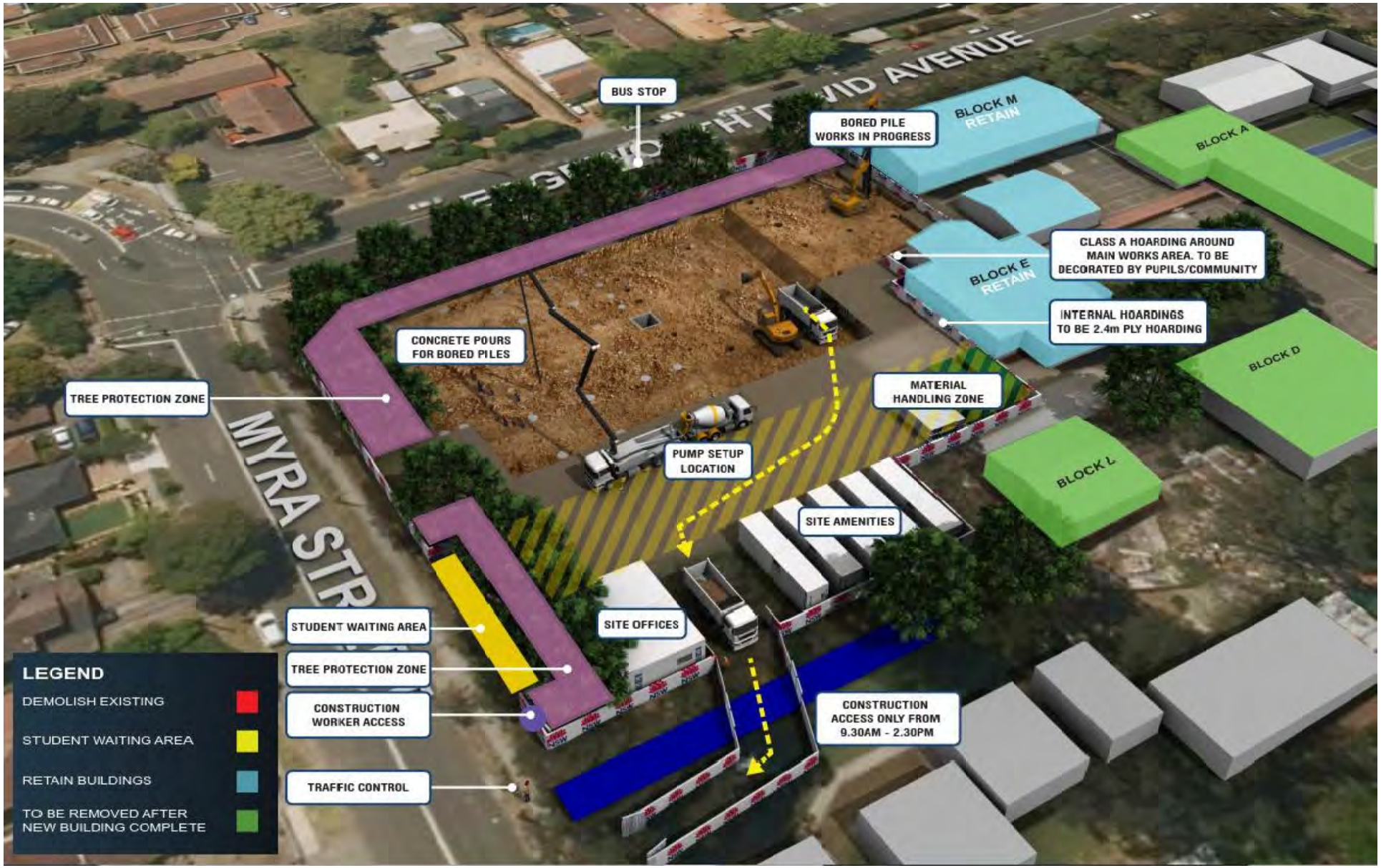


Figure 2 – Site Plan and Proposed Location of Major Plant During Excavation and Structural Works

3 BACKGROUND NOISE MEASUREMENT

Long term unattended and attended background noise measurements were undertaken by GHD at project approval stage (*Waitara Public School Acoustic Report,* Revision 2, December 2017) and are presented in the table below.

Table 1 – Measured Background Noise Levels, dB(A) L_{90}

LOCATION	PERIOD/TIME	BACKGROUND NOISE LEVEL dB(A) L_{90}
Monitoring Location 1 Myra Street (R2-4, C1)	Day (7am to 6pm)	50
Monitoring Location 2 Rear of Site (R1)	Day (7am to 6pm)	42

4 CONSENT CONDITIONS

4.1 CONSTRUCTION ENVIRONMENT MANAGEMENT PLAN

B20. *The Applicant must prepare a Construction Environmental Management Plan (CEMP) and it must include, but not be limited to, the following:*

...

(c) Construction Noise and Vibration Management Sub-Plan (see condition B23)

B23. *The Construction Noise and Vibration Management Sub-Plan must address, but not be limited to, the following:*

(a) be prepared by a suitably qualified and experienced noise expert;

(b) describe procedures for achieving the noise management levels in EPA's Interim Construction Noise Guideline (DECC, 2009);

(c) describe the measures to be implemented to manage high noise generating works such as piling, in close proximity to sensitive receivers;

(d) include strategies that have been developed with the community for managing high noise generating works;

(e) describe the community consultation undertaken to develop the strategies in condition B23(d); and

(f) include a complaints management system that would be implemented for the duration of the construction.

4.2 CONSTRUCTION HOURS

C5. *Construction, including the delivery of materials to and from the site, may only be carried out between the following hours:*

(a) between 7am and 6pm, Mondays to Fridays inclusive; and

(b) between 8am and 1pm, Saturdays.

No work may be carried out on Sundays or public holidays.

C6. *Activities may be undertaken outside of the hours in condition C5 if required:*

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

(b) in an emergency to avoid the loss of life, damage to property or to prevent environmental harm; or

(c) where the works are inaudible at the nearest sensitive receivers; or

(d) where a variation is approved in advance in writing by the Planning Secretary or her nominee if appropriate justification is provided for the works.

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

C8. *Rock breaking, rock hammering, sheet piling, pile driving and similar activities may only be carried out between the following hours:*

(a) 9am to 12pm, Monday to Friday;

(b) 2pm to 5pm Monday to Friday; and

(c) 9am to 12pm, Saturday.

4.3 CONSTRUCTION TRAFFIC

C10*. All construction vehicles (excluding worker vehicles) are to be contained wholly within the site, except if located in an approved on-street work zone, and vehicles must enter the site before stopping, unless directed by traffic control.*

4.4 CONSTRUCTION NOISE LIMITS

C15. *The development must be constructed to achieve the construction noise management levels detailed in the Interim Construction Noise Guideline (DECC, 2009). All feasible and reasonable noise mitigation measures must be implemented and any activities that could exceed the construction noise management levels must be identified and managed in accordance with the management and mitigation measures identified in the approved Construction Noise and Vibration Management Plan.*

C16. *The Applicant must ensure construction vehicles (including concrete agitator trucks) do not arrive at the site or surrounding residential precincts outside of the construction hours of work outlined under condition C5.*

C17. *The Applicant must implement, where practicable and without compromising the safety of construction staff or members of the public, the use audible movement alarms of a type that would minimise noise impacts on surrounding noise sensitive receivers.*

C18. *Any noise generated during construction of the development must not be offensive noise within the meaning of the Protection of the Environment Operations Act 1997 or exceed approved noise limits for the site.*

4.5 VIBRATION CRITERIA

C19. *Vibration caused by construction at any residence or structure outside the site must be limited to:*

(a) for structural damage, the latest version of DIN 4150-3 (1992-02) Structural vibration - Effects of vibration on structures (German Institute for Standardisation, 1999); and

(b) for human exposure, the acceptable vibration values set out in the Environmental Noise Management Assessing Vibration: a technical guideline (DEC, 2006) (as may be updated or replaced from time to time).

C20. *Vibratory compactors must not be used closer than 30 metres from residential buildings unless vibration monitoring confirms compliance with the vibration criteria specified in condition C19*

C21. *The limits in conditions C19 and C20 apply unless otherwise outlined in a Construction Noise and Vibration Management Plan, approved as part of the CEMP required by condition B23 of this consent.*

5 NOISE AND VIBRATION CRITERIA

5.1 EPA INTERIM CONSTRUCTION NOISE GUIDELINE

The EPA Interim Construction Noise Guideline (ICNG) assessment requires:

- Determination of noise generation goals (based on ambient noise monitoring).
- Review of operational noise levels at nearby development.
- If necessary, recommendation of noise controls strategies in the event that compliance with noise emission goals is not possible.

EPA guidelines adopt differing strategies for noise control depending on the predicted noise level at the nearest residences:

- *"Noise affected" level*. Where construction noise is predicted to exceed the "noise effected" level at a nearby residence, the proponent should take reasonable/feasible work practices to ensure compliance with the "noise effected level". For residential properties, the "noise effected" level occurs when construction noise exceeds ambient levels by more than 10dB(A)$L_{eq(15min)}$.
- "*Highly noise affected level*". Where noise emissions are such that nearby properties are "highly noise effected", noise controls such as respite periods should be considered. For residential properties, the "highly noise effected" level occurs when construction noise exceeds 75dB(A)$L_{eq(15min)}$ at nearby residences.

In addition to the above goals for residential receivers, the ICNG nominates a Management Level of 45dB(A) $L_{eq(15min)}$ internally for School Classrooms. There is no specific criteria nominated in the ICNG for construction noise management to childcare centres, and as such guidance must be taken from other guidelines and policies. We note the following;

- The Association of Australian Acoustical Consultants (AAAC) recommends that external noise levels within outdoor play areas of childcare centres not exceed 55 dB(A) $L_{eq(1hour)}$;
- As such, it is reasonable to consider an external noise level of 55 dB(A) $L_{eq(15min)}$ as an appropriate noise management level for the existing child care centre located to the north of the site.

A summary of relevant construction noise management levels is presented below.

Table 2 – Noise Management Levels - Residential

Location	"Noise Affected" Level - dB(A)$L_{eq(15min)}$	"Highly Noise Affected" Level - dB(A)$L_{eq(15min)}$
R2-R4 Myra Street & Edgeworth David Avenue	60	75
R1 Rear of Site	52	75

Table 3 – Noise Management Levels – Other Receivers

Location	Noise Management Level - dB(A)$L_{eq(15min)}$
School Receivers	45 internally
Childcare Receiver	55 externally

If noise levels exceed the criteria identified in the tables above, reasonable and feasible noise management techniques will be reviewed.

5.2 VIBRATION

As required by consent conditions C19, vibration caused by construction at any residence or structure outside the subject site will be assessed with reference to:

- For structural damage vibration, German Standard DIN 4150-3 *Structural Vibration: Effects of Vibration on Structures; and*
- For human exposure to vibration, the acceptable vibration values set out in the Environmental Noise Management Assessing Vibration: a technical guideline (DEC, 2006)..

5.2.1 Structure Borne Vibrations (Building Damage Criteria)

German Standard DIN 4150-3 (1999-02) provides vibration velocity guideline levels for use in evaluating the effects of vibration on structures. The criteria presented in DIN 4150-3 (1999-02) are presented in Table 4.

It is noted that the peak velocity is the value of the maximum of any of the three orthogonal component particle velocities as measured at the foundation, and the maximum levels measured in the x- and y-horizontal directions in the plane of the floor of the uppermost storey.

Table 4 – DIN 4150-3 (1999-02) Safe Limits for Building Vibration

	TYPE OF STRUCTURE	PEAK PARTICLE VELOCITY (mms^{-1})			
		At Foundation at a Frequency of			**Plane of Floor of Uppermost Storey**
		< 10Hz	**10Hz to 50Hz**	**50Hz to 100Hz**	**All Frequencies**
1	Buildings used in commercial purposes, industrial buildings and buildings of similar design	20	20 to 40	40 to 50	40
2	Dwellings and buildings of similar design and/or use	5	5 to 15	15 to 20	15
3	Structures that because of their particular sensitivity to vibration, do not correspond to those listed in Lines 1 or 2 and have intrinsic value (e.g. buildings that are under a preservation order)	3	3 to 8	8 to 10	8

The surrounding educational buildings would be considered a Type 1 structure, whilst residences would be considered a Type 2 structure.

5.2.2 Assessing Amenity

The NSW EPA document "*Assessing Vibration: A Technical Guideline*" provides procedures for assessing tactile vibration and regenerated noise within potentially affected buildings and is used in the assessment of vibration impact on amenity.

Relevant criteria are presented below.

Table 5 – EPA Recommended Vibration Criteria

		RMS acceleration (m/s^2)		RMS velocity (mm/s)		Peak velocity (mm/s)	
Place	Time	Preferred	Maximum	Preferred	Maximum	Preferred	Maximum
Continuous Vibration							
Residences	Daytime	0.01	0.02	0.2	0.4	0.28	0.56
Offices		0.02	0.04	0.4	0.8	0.56	1.1
Workshops		0.04	0.08	0.8	1.6	1.1	2.2
Impulsive Vibration							
Residences	Daytime	0.3	0.6	6.0	12.0	8.6	17.0
Offices		0.64	1.28	13.0	26.0	18.0	36.0
Workshops		0.64	1.28	13.0	26.0	18.0	36.0

6 ACTIVITIES TO BE CONDUCTED AND THE ASSOCIATED NOISE SOURCES

Typically, the most significant sources of noise or vibration generated during a construction project will be demolition, excavation, civil works (compaction, asphalting) and piling.

We note that demolition work and site establishment has largely been completed as part of an early works package and is not part of this assessment.

Table 5 - Sound Power Levels of the Proposed Equipment

EQUIPMENT /PROCESS	SOUND POWER LEVEL dB(A)*
35 Tonne Excavator (in clay/soil)	110
Bored Piling Rig	110
Concrete Pump	110
Trucks	100
Crane (Electric)	95
Powered Hand Tools	95-100

The noise levels presented in the above table are derived from the following sources, namely:

- Table A1 of Australian Standard 2436-2010.
- Data held by this office from other similar studies.

Noise levels take into account correction factors (for tonality, intermittency where necessary).

7 NOISE AND VIBRATION ASSESSMENT AND RECOMMENDATIONS

7.1 NOISE IMPACT ASSESMENT

The predicted noise levels during excavation and construction will depend on:

- The activity undertaken.
- The distance between the work site and the receiver. For many of the work areas, the distance between the noise source and the receiver will vary depending on which end of the site the work is undertaken. For this reason, the predicted noise levels will be presented as a range.

Predicted noise levels are presented below. Predictions take into account the following:

- Noise reduction as a result of distance.
- Barrier fencing between the site and surrounding receivers (where applicable), primarily being school receivers to the east and residents to the south (R2)
- Depending on the management level adopted, noise emission are predicted to either external areas (property boundaries/building facades) or internal areas. Where noise levels are predicted to internal areas, the NSW EPA Interim Construction Noise Guideline suggests that a reduction from external noise levels to internal spaces of 10 dB(A) is a conservative estimate. This recommended reduction has been used to calculate the internal noise levels at the place of worship adjacent to the site.

Table 6 – Predicted Noise Generation to R1 Residential Receivers East of Site (Address)

Activity	Predicted Level – dB(A) $L_{eq(15min)}$ (External Areas)	Comment
35 Tonne Excavator (in clay/soil)	48-55	Marginally exceeds noise management level of 52 dB(A) when working close to the south-eastern boundary. Refer to Section 7.4 for Recommendations
Bored Piling Rig	48-55	
Concrete Pump	48-55	
Trucks	38-45	Meets noise management level of 52 dB(A)
Crane (Electric)	40	
Powered Hand Tools	38-45	

Table 7 – Predicted Noise Generation to R2 Residential Receivers South of Site

Activity	Predicted Level – dB(A) $L_{eq(15min)}$ (External Areas)	Comment
35 Tonne Excavator (in clay/soil)	52-58	Meets noise management level of 60 dB(A)
Bored Piling Rig	52-58	
Concrete Pump	52-58	
Trucks	42-48 – Generally	Meets noise management level of 60 dB(A)
Crane (Electric)	42	Meets noise management level of 60 dB(A)
Powered Hand Tools	42-48	

Table 8 – Predicted Noise Generation to R3 Residential Receivers West of Site

Activity	Predicted Level – dB(A) $L_{eq(15min)}$ (External Areas)	Comment
35 Tonne Excavator (in clay/soil)	65-72	Exceeds noise management level of 60 dB(A). Refer to Section 7.4 for Recommendations)
Bored Piling Rig	65-72	
Concrete Pump	65-72	
Trucks	55-62	Marginally exceeds noise management level of 60 dB(A) when working close to the western boundary. Refer to Section 7.4 for Recommendations)
Crane (Electric)	53	Meets noise management level of 60 dB(A)
Powered Hand Tools	55-62	Marginally exceeds noise management level of 60 dB(A) when working close to the western boundary. Refer to Section 7.4 for Recommendations)

Table 9 – Predicted Noise Generation to R4 Residential Receivers North of Site

Activity	Predicted Level – dB(A) $L_{eq(15min)}$ (External Areas)	Comment
35 Tonne Excavator (in clay/soil)	58-70	Generally, exceeds noise management level of 60 dB(A). Refer to Section 7.4 for Recommendations)
Bored Piling Rig	58-70	
Concrete Pump	58-70	
Trucks	48-60	Meets noise management level of 60 dB(A)
Crane (Electric)	53	
Powered Hand Tools	48-60	

Table 10 – Predicted Noise Generation to C1 Childcare Centre North of Site

Activity	Predicted Level – dB(A) $L_{eq(15min)}$ (External Areas)	Comment
35 Tonne Excavator (in clay/soil)	60-65	Exceeds noise management level of 55 dB(A). Refer to Section 7.4 for Recommendations)
Bored Piling Rig	60-65	
Concrete Pump	60-65	
Trucks	50-55	Meets noise management level of 55 dB(A)
Crane (Electric)	48	
Powered Hand Tools	50-55	

Table 11 – Predicted Noise Generation to School Receivers Adjacent

Activity	Predicted Level – dB(A) $L_{eq(15min)}$ (Internal Areas – Windows Open)	Comment
35 Tonne Excavator (in clay/soil)	44-56	Generally, exceeds noise management level of 45 dB(A) internally Will be compliant when windows are closed. Refer to Section 7.4 for Recommendations)
Bored Piling Rig	44-56	
Concrete Pump	44-56	
Trucks	34-46	Generally, meets noise management level of 45 dB(A) internally
Crane (Electric)	35	
Powered Hand Tools	34-46	

7.2 DISCUSSION – NOISE

Proposed equipment to be used during the excavation and concreting phase of the development (excavator, bored piling, concrete pump) is expected to exceed noise management limits. Noise impacts to surrounding receivers is expected during this time, however we note the following;

- Only shallow excavation is required to be undertaken, as there are no basement levels proposed for the school. Excavation and piling works are anticipated to last only 2-3 weeks;
- Concrete truck/pumping activities are intended to be scheduled, and as such a notification process will be possible to assist surrounding receivers to manage noise impacts. Additionally, there will be approximately 8-10 concrete pours for the development which will last for 1 day each.
- Further, the proposed location for concrete pumping is central within the site and maximises the possible distance between all surrounding land uses.
- The duration of the excavation and structural works of the development will be of a relatively short duration. Once complete, noise impacts from general construction activities are expected to be reduced.

7.3 DISCUSSION - VIBRATION

Typically, excavation in rock and vibrated piling will be the activities with the greatest potential for generation of vibration.

For this project, excavation and bored piling of building footings will be in soil/shale. Hydraulic hammers and vibrated piling will not be required and therefore the excavation/piling works will not produce vibration levels approaching the criteria set out in section 5.2. Given the distance of the site from nearby buildings, it is unlikely that the vibration criteria detailed in Section 5.2 would be exceeded.

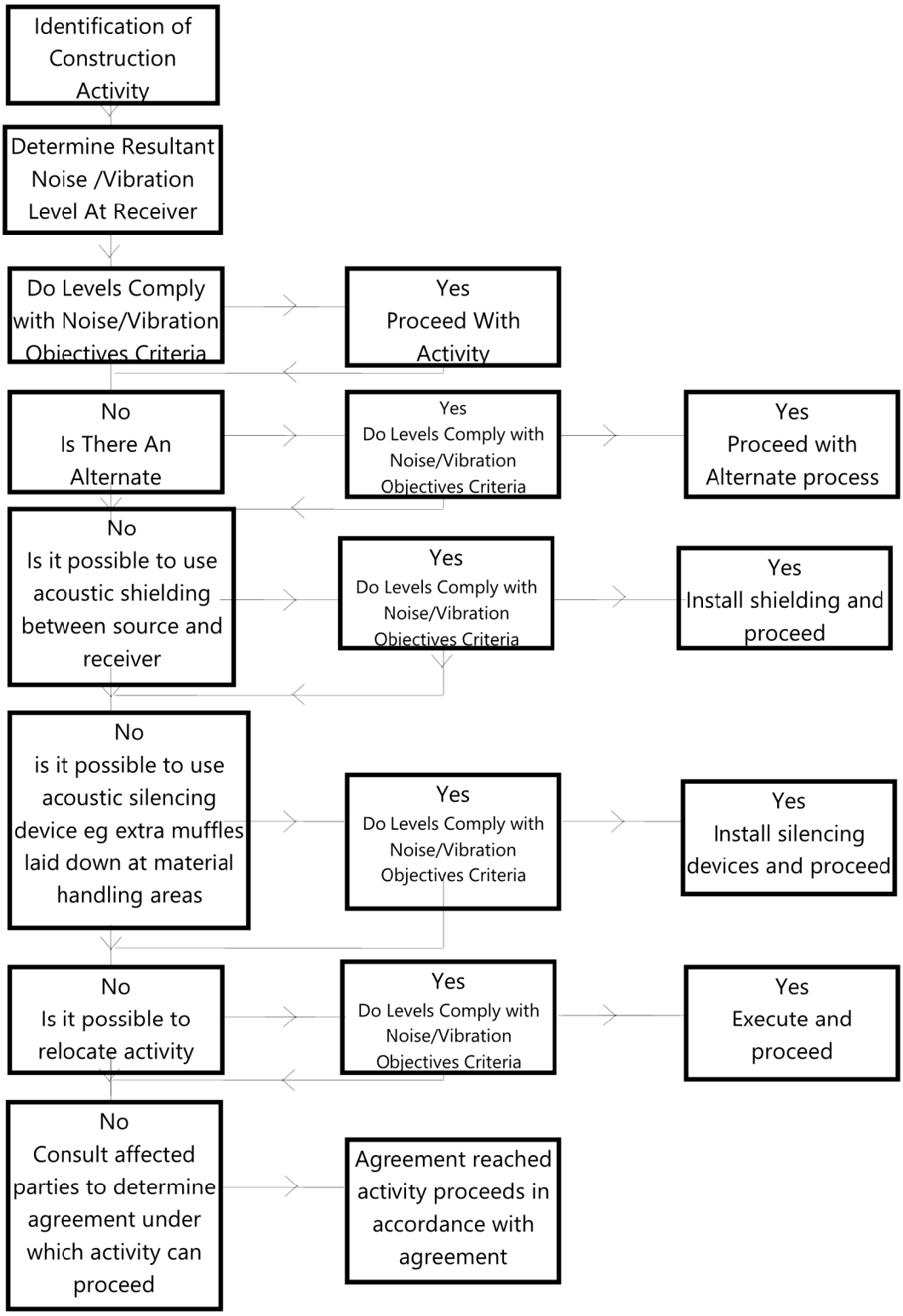
7.4 RECOMMENDATIONS

In light of the above, we recommend:

- Community consultation/notification - Notification (leaflet or similar) of nearby residents (particularly along Myra and Edgeworth David Avenue) is recommended, detailing the duration of excavation works and schedule of planned concrete pours. Although exceedances of the noise management levels is expected at receivers R3 & R4, the relatively short duration of excavation and structural works would not require any further mitigation measures (such site hoardings to the northern and western boundaries of site.
- An open line of communication should be maintained with the school to ensure they are aware of the upcoming construction program in order to organise any sensitive activities (exams etc.)
- Consolation should be undertaken with school to advise on the timing and duration of excavation and dates for concrete pours. Noting that the classrooms are air conditioned, leaving windows closed may be possible during class times when high noise producing plant (excavation/piling/concrete pump) is in use.
- Materials handling/vehicles:
    - Trucks and bobcats to use a non-tonal reversing beacon (subject to OH&S requirements) to minimise potential disturbance of neighbours.
    - Avoid careless dropping of construction materials into empty trucks.
    - Trucks, trailers and concrete trucks (if feasible) should turn off their engines during idling to reduce noise impacts (unless truck ignition needs to remain on during concrete pumping).
- Complaints handling - In the event of complaint, the procedures outlined in Section 9 should be adopted.

8 CONTROL OF CONSTRUCTION NOISE AND VIBRATION – PROCEDURAL STEPS

The flow chart presented below illustrates the process that will be followed in assessing construction activities.



9 ADDITIONAL NOISE AND VIBRATION CONTROL METHODS

In the event of complaints, there are a number of noise mitigation strategies available which can be considered.

The determination of appropriate noise control measures will be dependent on the particular activities and construction appliances. This section provides an outline of available methods.

9.1 SELECTION OF ALTERNATE APPLIANCE OR PROCESS

Where a particular activity or construction appliance is found to generate excessive noise levels, it may be possible to select an alternative approach or appliance. For example; the use of a hydraulic hammer on certain areas of the site may potentially generate high levels of noise. Undertaking this activity using bulldozers, ripping and/or milling machines will result in lower noise levels.

9.2 ACOUSTIC BARRIER

Given the position of adjacent development, it is unlikely that noise screens will provide significant acoustic benefit for commercial or residential receivers, but will provide noticeable improvement for those on ground level.

The placement of barriers at the source is generally only effective for static plant. Equipment which is on the move or working in rough or undulating terrain cannot be effectively attenuated by placing barriers at the source.

Barriers can also be placed between the source and the receiver.

The degree of noise reduction provided by barriers is dependent on the amount by which line of sight can be blocked by the barrier. If the receiver is totally shielded from the noise source reductions of up to 15dB(A) can be effected. Where only partial obstruction of line of sight occurs, noise reductions of 5 to 8dB(A) may be achieved. Where no line of sight is obstructed by the barrier, generally no noise reduction will occur.

As barriers are used to provide shielding and do not act as an enclosure, the material they are constructed from should have a noise reduction performance that is approximately 10dB(A) greater than the maximum reduction provided by the barrier. In this case the use of a material such as 10mm or 15mm thick plywood (radiata plywood) would be acceptable for the barriers.

9.3 MATERIAL HANDLING

The installation of rubber matting over material handling areas can reduce the sound of impacts due to material being dropped by up to 20dB(A).

9.4 TREATMENT OF SPECIFIC EQUIPMENT

In certain cases it may be possible to specially treat a piece of equipment to dramatically reduce the sound levels emitted.

9.5 ESTABLISHMENT OF SITE PRACTICES

This involves the formulation of work practices to reduce noise generation. A more detailed management plan will be developed for this project in accordance to the construction methodology outlining work procedures and methods for minimising noise.

9.6 COMBINATION OF METHODS

In some cases it may be necessary that two or more control measures be implemented to minimise noise.

10 DEALING WITH COMPLAINTS

Should ongoing complaints of excessive noise or vibration criteria occur immediate measures shall be undertaken to investigate the complaint, the cause of the exceedances and identify the required changes to work practices.

If a noise complaint is received the complaint should be recorded. Any complaint form should list:

- The name and address of the complainant (if provided);
- The time and date the complaint was received;
- The nature of the complaint and the time and date the noise was heard;
- The name of the employee who received the complaint;
- Actions taken to investigate the complaint, and a summary of the results of the investigation;
- Required remedial action, if required;
- Validation of the remedial action; and
- Summary of feedback to the complainant.

A permanent register of complaints should be held.

11 CONCLUSION

A noise and vibration assessment has been undertaken of the proposed construction works to be undertaken for Waitara Public School to address consent conditions B20(c), B23, C5-8, C10 & C15-21.

Potential noise and vibration impacts on nearby development have been assessed. Provided that the mitigation techniques recommended in sections 7.4, 8, 9 & 10 of this report are adopted, noise and vibration impacts on the adjacent buildings are expected to be acceptable.

Please contact us should you have any further queries.

Yours faithfully,

Acoustic Logic Consultancy Pty Ltd
Alex Washer

Consultant/Sub-Contractor Details

Name of consultant/sub-contractor:	Acoustic Logic Consultancy Pty Ltd
Contact person (name & telephone no.):	Thomas Taylor 8339 8000
Discipline(s):	…
Services to be provided for the contract:	Acoustic Consulting

Consultant's/Sub-Contractors Relevant Recent Experience

Provide the following details for three current or recently completed commissions the consultant or sub-contractor has carried out for similar work:

Commission Details

Project name:	Royal Shore Hospital ($702m) Auburn Hospital ($145m) Bankstown Sports Club Event Cinemas, Top Ryde Sydney International Convention Centre Sydney Cricket Ground Redevelopment The Towers, Elizabeth Quay, Perth, WA The Royal Atlantis Resort, Dubai

Consultant's Key Personnel

Identify the consultant's key personnel and provide the following information for each.

Name:	Thomas Taylor
Discipline:	Acoustic Engineering
Qualifications:	B. Eng/Law, Associate Director

Name:	Alex Washer
Discipline:	Acoustic Engineering
Qualifications:	B. Eng, Project Engineer

Annexure 3
Construction Waste Management Sub-Plan

PEOPLE WHO BUILD

ADCO

WASTE MANAGEMENT PLAN

PROJECT NAME

WAITARA PUBLIC SCHOOL

PROJECT NO.

3347

PROJECT MANAGER

DEAN ISRAEL

PROJECT ENGINEER

ANDREAS PASHIOU

REPORT DATE

5.APR.2019

WASTE MANAGEMENT PLAN

GENERAL

PRINCIPAL CONTRACTOR FOR THIS PROJECT

ADCO Constructions Pty Ltd

Level 2, 7 – 9 West Street

NORTH SYDNEY

NSW 2060

A.B.N. 46 001 044 391

P: (02) 8437 5000

E: sydney@adcoconstruct.com.au

AUTHORISATION OF THIS PLAN

APPROVED BY	POSITION	SIGNATURE
Dean Israel	Project Manager	
Phil Provenzano	State EHSQ Manager	

Rev No.	Issue date	Description
VO	05/04/2019	For SSD 8574 condition B24

PROJECT PERSONNEL SIGN OFF

WASTE MANAGEMENT PLAN

We, the undersigned, confirm that we have read and understood the contents of this document and agree to implement the requirements of this Plan on this project site:

NAME	POSITION	SIGNATURE	DATE

PLAN AMENDMENT –TOOLBOX TALK AND INDUCTION EVIDENCE

The Site Manager is required to confirm that the following consultation mechanisms have been completed/amended to discuss/implement/communicate changes to this Project Management Plan.

TOOLBOX TALK		INDUCTION SCRIPT	
Date completed		Date updated	

INDEX

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WASTE CONTRACTOR/S 6

WASTE MATERIAL 6,7,8

WASTE MANAGEMENT TARGETS 9

WASTE MANAGEMENT PLAN

INTRODUCTION

PURPOSE OF THIS PLAN

This Management Plan has been produced for the following purposes:

- Compliance to legislation.
- Compliance with SSD Consent 8574 condition B24
- Establishment of objectives for the project.
- Identification of risks and the control measures to be used to mitigate such risks.
- Subcontractor management requirements.
- Other EHS management requirements as required for this project.

PROJECT WASTE MANAGEMENT

ON SITE MANAGEMENT

General	/ Waste products will be recycled wherever possible. / Waste bins will be provided and emptied regularly to ensure that the site is kept clean. / General construction waste will be stored in skip bins at a nominated area on site. / Waste that is unsuitable for recycling will be disposed of to an approved landfill site. / No burning of rubbish, wood or other materials is allowed on site. / Tipping dockets will be obtained and a register of removed materials maintained.
Solids and liquids	/ Disposal of solid and liquid waste will be by an approved contractor to an approved location. / Liquid waste will be stored in impervious bunded containers at a nominated location on site.
Concrete	/ A concrete wash out area will be nominated on site. / Concrete washout will be recycled where possible and used on site to stabilise access or for fill material.
Contaminated	/ Contaminated materials identified on site will be managed on site and disposed of off-site by a licensed contractor. / Contaminated soil is to be loaded directly into trucks and removed to an approved landfill site. / Contaminated materials will be managed and disposed of by a licensed contractor.
Stockpiles	/ Stockpiles will be in areas approved by the Site Manager. / Stockpiles will be managed to prevent pollution.
Sewer	/ All waste from ablution blocks and lunch sheds will be connected to the main sewer system by a licensed contractor. / All waste from portable ablution blocks will be disposed of by a licensed liquid waste transporter to an approved facility.

WASTE MANAGEMENT PLAN

WASTE CONTRACTOR/S	During the construction of the project, removal and recycling of waste will be provided by BINGO.	
	Waste removed from site will be transported to an approved waste or recycling facility. All waste removed from site will be tracked through waste documents and/or monthly waste reports provided by the contractor.	
WASTE MATERIAL	Concrete and masonry product	/ Concrete waste generated during demolition will be recycled / Concrete wash out will be used for access paths and road where possible. All other concrete waste will be placed in designated skips on site. / Excess concrete will be returned to the supplier. / Masonry recovered during demolition will be recycled where possible by the demolition contractor. / Masonry off cuts from construction may be reused on site for temporary access ways or placed in designated skip bins for recycling.
	General waste	/ All general waste generated on site including food scraps will be placed in the bins provided in the amenities buildings. / Such waste will be removed from site by an approved contractor.

Excavated material	/ Normal excavation methods will be used by the approved contractor. / Work areas will have identification barriers to prevent unauthorised access. All personnel will be required to follow the safety management plan while conducting excavations works. / Any contaminated soil to be removed will be tested prior to removal directly to waiting trucks. Contaminated material will be transported by the most direct route to an approved treatment/landfill facility. / The transport of all materials from the site will conform to the requirements of the EPA, Local Councils, RTA and other relevant authorities. / Where contaminated material is to be stockpiled the area is to be designated by the approved consultant or site manager. Protective barriers are to be in place to warn and protect workers on site. / Trucks removing material from site will have the loads securely covered to prevent spillage. Drivers are required to ensure that no materials are tracked onto the road. All traffic leaving the site is to use the designated wash down bay to remove mud, dust and other debris. / Materials to be removed from site may include: - General waste including organic material, concrete and other hard waste - Imported fill material - Topsoil - Landfill waste - General fill - Unsuitable material - Contaminated material
Green waste	/ Green waste generated as a result of tree felling, mulching or top soil removal will be: / Removed from site and transported to an accredited waste facility. Or / If requested by the school, wood chips will be used as mulch in existing landscaped areas.
Glass, paper, plastic and cardboard	/ During the construction of the project, such products will be placed in designated bins for recycling.
Plasterboard	/ During the construction of the project, such products will be placed in designated bins for recycling.
Polystyrene	/ During the construction of the project, such products will be placed in designated bins for recycling.

Steel and aluminium	/ Where practicable, such products recovered during the demolition process will be recycled. During the construction of the project, such products will be placed in designated bins for recycling.
Timber	/ Timber recovered during the demolition process will be assessed on site by the demolition contractor and recycled where possible / Timber will be used and cut in the most economical fashion where ever possible. / Timbers for formwork, temporary structures and handrails will be reused and maintained at full lengths wherever possible. / Rainforest timbers and Australian high conservation timbers will not be used on this project.

HAZARDOUS MATERIALS

RISK	1.3 REMOVAL OR DISTURBANCE OF ACM INCLUDING OTHER HAZARDOUS MATERIALS			
Project Risk Description	Asbestos Containing Material (Friable, Non-Friable, Unexpected Finds) Asbestos within demolition structure/building			
SHE System Procedures	Risk Management	Asbestos Management		
CAUTION!	Note: Risks and controls identified are **not conclusive** as individual subcontractors must provide additional risk assessments / SWMS's applicable to their scope and activities. Identified controls should be used in the development of SWMS's by subcontractors as these are ADCO minimal requirements.			

IR	Potential Risks	Actions and Controls	RR
H	∇ Potential long-term health impact to workers and others through incorrect work practices ∇ Cross contamination through poor work practices during the remediation process ∇ EPA fines for mismanagement of contamination ∇ Airborne contaminants and emission of fibres to the air	∇ Safe systems of work must be documented in SWMS and / or Safe Work Procedures. ∇ Persons undertaking works must be competent. ∇ Supervision to be provided during works. ∇ Safety Control in line with "Hierarchy of Controls" ∇ Asbestos Licenced contractor. ∇ Regulatory notifications issued. ∇ Asbestos Removal Plan provided to ADCO Management. ∇ Asbestos Assessor engaged to undertake inspections, air monitoring and provide clearance certificates. ∇ Adherence to EPA and WHS legislation, codes etc for Asbestos Work/Management. ∇ All workers informed of the hazards and controls in relation to ACM or contamination. ∇ Decontamination methods implemented and suitable to prevent cross contamination.	M

			∇ Air monitoring undertaken and reports provided to ADCO Management. ∇ Approved waste facility to be used for all ACM material. ∇ Copy of tipping dockets to be provided to ADCO Management. ∇ Any unexpected finds to be reported to ADCO Management immediately. ∇ ADCO Management to arrange assessment, removal and disposal of unexpected finds. ∇ ADCO Work Permit required for activity.	

ESTIMATED WASTE MANAGEMENT QUANTITIES AND TARGETS :

Based on data collected from previous and similar projects the following table provides a list of estimated targets for waste products generated on this project:

MATERIAL TYPE	ESTIMATED QTY (CUM)	ESTIMATED PERCENTAGE OF TOTAL WASTE	
		Recycled %	Landfill %
Brick / Concrete / Stone	800.00	36.12%	0.00%
Soil / Clay	25.00	1.13%	0.00%
Metal / Steel	300.00	13.54%	0.00%
Timber / Green Waste	675.00	30.47%	0.00%
Cardboard / Paper	20.00	0.90%	0.00%
Plaster / Gyprock	70.00	3.16%	0.00%
Waste to Landfill	275.00	0.00%	12.42%
Foodscraps	50.00	0.00%	2.26%
Total Est Waste	**2,215**	**85%**	**15%**

Annexure 4
Construction Soil and Water Management Sub-Plan

EDGEWORTH DAVID AVENUE

MYRA STREET

PROPOSED STOCKPILE LOCATION

PROVIDE ENTRY/ EXIT STABALISED SITE ACCESS WITH VEHICLE SHAKER GRID

PROPOSED MESH & GRAVEL INLET FILTERS

OSD TANK TO BE USED FOR SEDIMENT BASIN. OUTLET TO BE BLOCKED AND PUMP ON STANDBY TO CONTROL DISCHARGE FLOWS FROM THE BASIN TO LESS THAN THE PRE-DEVELOPED FLOWS DURING THE 1, 20 AND 100 YEAR STORM EVENTS. DISCHARGE TO BE SPREAD OVER STABILISED GROUND AND SPREAD IN A CONTROLLED MANNER.

SEDIMENTATION FENCE

LEGEND

- PROPOSED SEDIMENTATION FENCE
- PROPOSED CATCH DRAIN
- PROPOSED HAYBALE FILTER
- PROPOSED VEHICLE SHAKER GRID
- PROPOSED STABILISED SITE ACCESS
- PROPOSED STOCKPILE LOCATION
- PROPOSED MESH & GRAVEL INLET FILTER

CONSTRUCTION SOIL AND WATER MANAGEMENT PLAN/ SEDIMENT & EROSION CONTROL NOTES

- ALL SEDIMENT CONTROL DEVICES ARE TO BE CONSTRUCTED, PLACED AND MAINTAINED IN ACCORDANCE WITH HORNSBY SHIRE COUNCIL SPECIFICATIONS AND LANDCOM'S "SOIL AND CONSTRUCTION" MANUAL.
- ALL PERIMETER & SILTATION CONTROL MEASURES ARE TO BE PLACED PRIOR TO, OR AS THE FIRST STEP IN EARTH WORKS AND/OR CLEARING.
- THE SEDIMENT & EROSION CONTROL PLAN MAY REQUIRE FUTURE ADJUSTMENT TO REFLECT CONSTRUCTION STAGING. IT IS ALSO THE CONTRACTORS RESPONSIBILTY TO PREPARE THEIR OWN SEDIMENT AND EROSION CONTROL PLAN WHICH SUITS THE DESIGNED CONSTRUCTION STAGING.
- FILTRATION BUFFER ZONES ARE TO BE FENCED OFF AND ACCESS PROHIBITED TO ALL PLANT AND MACHINERY.
- ALL TEMPORARY EARTH BERMS, DIVERSIONS & SILT DAM EMBANKMENTS ARE TO BE MACHINE COMPACTED, SEEDED & MULCHED FOR TEMPORARY VEGETATION COVER AS SOON AS THEY HAVE BEEN FORMED.
- ALL SEDIMENT TRAPPING STRUCTURES AND DEVICES ARE TO BE INSPECTED AFTER STORMS FOR STRUCTURAL DAMAGE OR CLOGGING. TRAPPED MATERIAL IS TO BE REMOVED TO A SAFE LOCATION.
- ALL TOPSOIL IS TO BE STOCKPILED ON SITE FOR REUSE (AWAY FROM TREES AND DRAINAGE LINES). MEASURES SHALL BE APPLIED TO PREVENT EROSION OF THE STOCKPILES.
- ALL EARTHWORK AREAS SHALL BE ROLLED EACH EVENING TO SEAL THE EARTHWORKS.
- ALL FILLS ARE TO BE LEFT WITH A LIP AT THE TOP OF THE SLOPE AT THE END. ALL CUT AND FILL SLOPES ARE TO BE SEEDED AND STRAW MULCHED WITHIN 14 DAYS OF COMPLETION OF FORMATION U.N.O. BY LANDSCAPE ARCHITECTS.
- UPON COMPLETION OF ALL EARTHWORKS OR AS DIRECTED BY COUNCIL SOIL CONSERVATION TREATMENTS SHALL BE APPLIED SO AS TO RENDER AREAS THAT HAVE BEEN DISTURBED, EROSION PROOF WITHIN 14 DAYS.
- EROSION AND SILT PROTECTION MEASURES ARE TO BE MAINTAINED AT ALL TIMES.
- SHORTAGE OF MATERIALS, PLANTS AND EQUIPMENT SHALL BE PLACED ON PAVED AREAS WHEREVER POSSIBLE. WHERE NOT POSSIBLE, SEDIMENT FENCES SHALL BE PLACED DOWNSTREAM OF ANY LOOSE MATERIAL. STOCK PILE SUCH THAT SEDIMENT LADEN RUNOFF IS TRAPPED IN THE EVENT OF WET WEATHER.
- STORMWATER DISCHARGE FROM THE SITE (OFF-SITE FLOWS) SHALL BE IN A CONTROLLED MANNER VIA THE TEMPORARY SEDIMENT BASIN i.e. BLOCKED OUTLET OSD TANK. WATER SHALL BE FLOCCULATED SUCH THAT IT IS CLEAR OF SEDIMENT PRIOR TO DISCHARGE. DISCHARGE SHALL BE TO THE KERB & GUTTER OR EXISTING COUNCIL PIT IN THE SOUTH WEST CORNER OF THE SITE.

0 5 10 15 20 25m

SCALE 1:250

SEDIMENT & EROSION CONTROL PLAN

SCALE 1:250@A1

FOR CONSTRUCTION

SURVEY INFORMATION
SURVEYED BY
C.M.S. SURVEYORS Pty Ltd
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM41898 RL185.074

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
C	ISSUED FOR CONSTRUCTION	MS	IA	10.04.2019
B	ISSUED FOR CONSTRUCTION	KSR	IA	13.03.2019
A	ISSUED FOR CONSTRUCTION	KSR	IA	23.01.2019
01	ISSUED FOR INFORMATION ONLY	KSR	IA	18.10.2018

Client: ADCO CONSTRUCTION PTY LTD
Architect: NBRS ARCHITECTURE

Level 5,
79 Victoria Avenue
Chatswood NSW 2067

Telephone +61 2 9417 8400
Facsimile +61 2 9417 8337
Email email@hhconsult.com.au
Web www.henryandhymas.com.au

henry&hymas

Project: WAITARA PUBLIC SCHOOL REDEVELOPMENT
68 EDGEWORTH DAVID AVE WAHROONGA

Title: SEDIMENT AND EROSION CONTROL PLAN

Drawn	Designed	Date
K.S.Rom	I.Ahmed	JULY 2018
Checked	Approved	Scale
A.Francis	A.Francis	1:250@A1

Drawing number: 18380_CC_SE01
Revision: C

H&H Consulting Engineers Pty Ltd *(trading as Henry & Hymas)*

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henry&hymas

10 April 2019

Our Ref: 18380-C6/af

ADCO Constructions
7-9 West Street
NORTH SYDNEY NSW 2073

Attention: Mr Dean Israel

Dear Sir,

RE: **PROPOSED WAITARA PUBLIC SCHOOL REDEVELOPMENT**

SUBJECT PREMISES: **68 EDGEWORTH DAVID AVENUE, WAHROONGA, NSW**
CERTIFICATE OF DESIGN

Pursuant to the provisions of the **Clause A2.2 of the Building Code of Australia**, I hereby certify that the above design is in accordance with best engineering practice and in our opinion meets the requirements of the Environmental Planning and Assessment Regulations of the Building Code of Australia and relevant Australian Standards. In particular, the design is in accordance with the following:

- AS2890.1:2004 – 'Parking facilities' – Part 1: Off- street car parking
- AS2890.2:2002 - Parking facilities' Part 2: Off-street commercial vehicle facilities
- AS3500.3:2003 Plumbing and Drainage – Part 3: Stormwater Drainage
- Managing Urban Stormwater (2004) by Landcom
- Hornsby Shire Council Development Control Plan 2013
- SSD No 8574 Consents B25 (b) In relation to describing all erosion and sediment controls. This is shown on the drawing 18380_CC_SE01.
- SSD No 8574 Consents B25 (c) In relation to describing how the construction works will be managed in wet-weather events. This is shown on the drawing 18380_CC_SE01.
- SSD No 8574 Consents B25 (d) In relation to details of all off-site flows. This is shown on the drawing 18380_CC_SE01.
- SSD No 8574 Consents B25 (e) In relation to control stormwater and flood flows for small and large sized events. This is shown on the drawing 18380_CC_SE01.

henry&hymas

- SSD No 8574 Consent B31- In relation to the stormwater management system. This includes the system capacity is designed in accordance with Australian Rainfall and Runoff (ARR 2016).

I am an appropriately qualified and experienced person in this field and as such have the capacity to certify on behalf of Henry & Hymas Consulting Engineers Pty Ltd that the design and performance of the design systems, in our opinion comply with the above and are detailed on the following drawings:

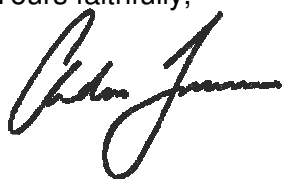
Drawing Name:	Revision Number
18380_CC_C000 COVER SHEET, DRAWING SCHEDULE, NOTES & LOCALITY SKETCH	A
18380_CC_C100 SITE PLAN	H
18380_CC_C200 STORMWATER MISCELLANEOUS DETAILS & PIT LID SCHEDULE	C
18380_CC_C201 OSD TANK SECTION AND DETAILS	F
18380_CC_C400 STORMWATER PITS SET OUT PLAN	A
18380_CC_C500 PAVEMENT PLAN	C
18380_CC_C501 PAVEMENT JOINTING DETAILS & NOTES	B
18380_CC_SE01 SEDIMENT & EROSION CONTROL PLAN	C
18380_CC_SE02 SEDIMENT & EROSION CONTROL TYPICAL SECTIONS & DETAILS	A
18380_CC_BE01 BULK EARTHWORKS CUT & FILL PLAN	B

H & H Consulting Engineers Pty Ltd possesses indemnity insurance to the satisfaction of the Client. However, this certificate shall not be construed in any way to relieve any other party of their responsibilities.

Designer: Andrew Francis

Qualifications: B.E. (Civil)
Employer: H & H Consulting Engineers Pty Ltd
Address: Level 5, 79 Victoria Ave CHATSWOOD
Business Tel. No: 9417 8400 Fax No: 9417 8337

Yours faithfully,



ANDREW FRANCIS
For, and on behalf of,
H & H Consulting Engineers Pty Ltd

Annexure 4.1

Email correspondence ADCO Constructions to Hornsby Shire Council dated 11 April 2018

Please note; this email along with phone calls made to Hornsby Shire Council are included to satisfy the need for council consultation (SSD Condition B25(a)) in the review of the Construction Soil and Water Management Sub plan. No request was received from Council to amend the plan.

Dean Israel

From: Dean Israel
Sent: Thursday, 11 April 2019 8:06 AM
To: hsc@hornsby.nsw.gov.au
Cc: Andreas Pashiou; Imran Ahmed; Andrew Francis
Subject: Att General Manager - Waitara Public School Redevelopment SSD Condition B25 Construction Water and Soil Management Plan
Attachments: Cond B25 - CSWMP rev C.pdf; Cond B25 - CSWMP Certificate.pdf

In accordance with **condition B25 of the State Significant Development Consent (SSD 8574**) for the redevelopment of the Waitara Public School we provide attached a copy of the Construction Soil and Water Management Plan and the associated design certificate from our civil engineer.

Should you have any queries please contact the undersigned on 0413777152

Dean Israel
Project Manager

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Annexure 5

Biodiversity Management Sub-Plan

Waitara Public School

Bushland Management Plan

Final

By Ecological Consultants Australia Pty Ltd TA

Kingfisher Urban Ecology and Wetlands

About this document

Copyright Statement©

Statement of Authorship

This study and report was undertaken by Ecological Consultants Australia at Studio 1/33 Avalon Parade, Avalon. The author of the report is Geraldene Dalby-Ball with qualifications BSc. majoring in Ecology and Botany with over 20 years' experience.

Limitations Statement

Information presented in this report is based on an objective study undertaken in response to the brief provided by the client. Any opinions expressed in this report are the professional, objective opinions of the authors and are not intended to advocate any particular proposal or pre-determined position.

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Signed: Geraldene Dalby-Ball – Director of Ecological Consultants Australia

Executive Summary

Introduction - BMP

The BMP fulfils the condition B26 of the DA consent.

Bushland Zone:

The site contains an area of Critically Endangered Sydney Turpentine Ironbark Forest (STIF).

- The area is in the north east corner and is ~ 2000m^2. Flora is reasonably diversity with canopy, mid and ground species. Abundance of canopy is appropriate however no natural recruitment was observed.
- Trees from this site stock have to be planted or natural regeneration facilitated to a level where its success is guaranteed.
- Bushland Zone is impacted by unrestricted access. Access is to be restricted to facilitate regeneration.
- A central access to the platform ca be retained.
- Alternative 'nature-play' areas are required and these can be included in areas that currently have trees and no understory. At least 3000m^2 is available for this.
- No mulch is to be used in this area. Only natural accumulation of fallen leaves.
- Logs to be introduced to this area to be from on-site trees only.

School open areas

Canopy trees to have planting of Lomandra or equivalent, around the bases to at least 1m radius from trunk.

Nature play areas to be incorporated into these open soil areas to take the pressure off the Bushland Zone and facilitate children connection with nature.

Landscaped Gardens

Garden beds outside class room have high potential to be re-created as habitat gardens. Further advice from an ecologist/Bushregerator/eco-landscaper with knowledge in this would be expected to give detailed into this in consultation with the students / school.

- Weed removal and landscaping can enhance the riparian zone buffer.
- Weeds are currently habitat and landscaping includes shrub species to replace that type of habitat.
- Arborist report recommendations to be applied.

Development and Tree pruning / removals

The current development and any future development is to include ecologist or certified wildlife care person on-siteduring works. Whiel ther are currently few tree hollows the tree hollow development will occur as trees continue to mature. Any future 'dead-wooding' for safety reasons is to be accompanied by replacement habitat being installed.

Hollows are currently uncommon and nest boxes (x 6) are recommend to bring habitat into the trees on-site.

Monitoring and reporting is required – as per Section 4 of this BMP.

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1 Introduction and Scope

Ecological Consultants Australia (ECA) has been contracted by ADCO Constructions Pty Ltd to provide a Bushland Management Plan for STIF within the school grounds.

B26. The Biodiversity Management Sub-Plan (BMSP) must address, but not be limited to, the following:

(a) provide information and maps that define the biodiversity values across the site, including the Sydney Turpentine-Ironbark forest in the north-east corner of the site;

(b) map potential areas for management of threatened and significant species;

(c) measures to minimise the loss of key fauna habitat, including tree hollows;

(d) measures to minimise the impacts on fauna on site, including conducting fauna pre-clearance surveys prior to vegetation clearing, building / structure demolition;

(e) controlling weeds and feral pests;

(f) measures to ensure biodiversity values not intended to be impacted are protected, including barriers and mapping of protected / 'no-go' areas;

(g) procedures for the removal of nests or fauna located in trees to be removed in accordance with the recommendations of the Flora and Fauna Assessment prepared by Niche Environment and Heritage dated 27 August 2018; and

(h) a program to monitor the effectiveness of the measures in the BMSP.

1.1 Legislation and policy – why care for bushland and native trees on site

The BMP considers the legal requirements of caring for the bushland and native canopy trees on site.

Key biodiversity legislation and policy including:

- *Cwlth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).*
- *Environmental Planning and Assessment Act 1979 (EP&A Act).*

The EPA Act requires that the assessing body, in this case local government, consider the impact of the development on the surroundings – with respect to this ecology report the impacts on the environment are assessed. The proposal indicate no significant impact on threatened species, populations or communities.

- *Biodiversity Conservation Act 2016 (BC Act).*

The vegetation on the site is listed as Critically Endangered under the *Biodiversity Conservation Act 2016.*

- *Biosecurity Act (superseding the Noxious Weed Act 1993) (NW Act).*

The Biosecurity Act replaced the Noxious Weeds Act and the objectives of this Act is to manage, and eradicate and Weeds that cause a high level of environmental, economic or social harm. Weeds on site that should be removed have been listed in this VMP.

1.2 Site Inspections

Senior Ecologist Geraldene Dalby-Ball assessed the site twice in March 2019. Weather was fine and sunny during one visit and light rain on another. During site visits, notes and photos were taken of the important vegetation types, flora and fauna present. The whole school site was surveyed. Clearance surveys were completed and this report focuses on the care of the bushland remnant.

1.3 Previous studies

Records from the following databases were collated and reviewed:

- Flora and Fauna report by Ecological (2019)
- (Bionet) New South Wales, Office of Environment and Heritage (OEH).
- NSW Threatened Species Information (OEH) information on STIF.
- VIS – Vegetation Mapping information NSW (SEEDdataPortal)
- Protected Matters Search Tool of the Australian Government Department of the Environment (DoE) for matters protected by the Cwlth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

2 Biodiversity Values across the site

Site Description
The study area is 68 Edgeworth David Avenue, Wahroonga 2076 (see Figure 1.1).

Figure 2.1 Location of the site. Source: Six Maps, 2019.

Figure 2.2 School site. Source: Six Maps, 2019. NB western half is currently cleared

2.1 Biodiversity Values of Trees on-site

The site is cleared lands with isolated canopy trees, mostly around the periphery. Trees appear to be a mix of remnant and planted. Those on the north east side are typical of Turpentine-Ironbark Forest of the Sydney Basin Bioregion (STIF). Turpentine trees are growing along Edgeworth David Ave and show the south western site could have been a transition into more sandstone vegetation communities. Angophoras are dominant here. Plates 1-8 are examples of trees on-site.

Plate 1 – tree protection fencing in place – western part of site

Plate 2 North western street front – native canopy

Plate 3 - Street front of the bushland remnant

Plate 4 - Angophora costata along fence north western end

Plate 5 – Eastern boundary – isolated canopy trees. Tres ot hav Lomandra or Dianella planted around them ~1m diameter. "Bushland to be created for students to 'play-in' including the placement of Habitat logs, rocks and the planting of robust platns including vines.

Plate 6 – Canopy and bushland in NE corner remnant. Tree planting for replacment canopy is needed throughout this area. Species to be from STIF community and of local origin.

Plate 7 - Canopy and bushland in NE corner remnant. Bushregenration supervised by qualifed (Cert III) person. Areas within this zone to be delineated to retain access by students for nature-connection while ahveing areas out-of-bounds to facilitate natural regenraiton and possibly planting.

Plate 8 – Garden beds with low biodiversity value but high potential to have biodiversity value. Logs and native plants to replace Agapanthus. Students can be involved in the 'habitat-garden' designs.

Trees have intrinsic biodiversity values and remnant ones are a source of genetic material that can be used in replanting and linking remnant vegetation. Trees are also habitat for animals, including those that pollinate the native vegetation. One hollow was seen in an Angophora on site. Additional hollows are expected to form with age. Trees are also of sufficient size to effectively hold nest-boxes including those for threatened micro-bats.

2.1 Biodiversity Value of Bushland on-site

The remnant vegetation on-site is partly Turpentine-Ironbark Forest of the Sydney Basin Bioregion (STIF) and is listed as **Critically Endangered at the Commonwealth (EPBC Act) and State Level (Biodiversity Conservation Act 2016).** This community has been identified as an area of focus for rehabilitation by Hornsby shire Council and this BMP assists in the guidance of the vegetation.

While most of the site has isolated canopy trees bushland (STIF) is growing in the north-east corner this <0.3 ha.

This bushland contains a diversity of native vegetation with canopy, mid and ground plants. While it is currently isolated from other patches the genetic diversity will move between patches – see section 2.2 for other patches.

Figure 2.3 STIF on-site NB: areas not highlighted are mostly likely transition forest species. Angophoras are common.

2.1.1 Native plants in bushland

Native shrubs and ground plants are absent from the site with the exception of this bushland zone ion the NE corner. Diversity is relatively high considering the size and impacts within this area. The following images show the diversity of native plants in the remnant.

Blue-berry Ash

Bursaria

She-Oak

Glycine

Native Grass

Pratia

Comelina

Water Gum (planted possibly)

Melaleuca styphloides
Prickly Tea-Tree

Cedar (planted)

Dianella

Wattle

Pittosporum

Hakea

Plants are to be protected and propagated and planted within the school grounds.

2.1.2 Current status

While the diversity is high the abundance (cover) is low. Access within the remnant has resulted in less than 30% being vegetated. Large bare areas dominate. See management section for recommendations.

2.1.3 Trees in the bushland area

Turpentine

Casuarina

Spotted Gum

Scribbly Gum

Tea-tree

2.1.4 Tree formations and other habitat within the bushland remnant

Turpentine

Angophora costata

Different tree species growing in close proximity – benefit each other and the faun that use both rough and smooth bark trees as habitat.	Surface roots of Angophora. Important traditionally within First Peoples culture – the roots connect the generations of peoples.

2.2 Biodiversity Value of the Site in Region

The closest large patch of native bushland occurs at Ku-ring-gai Chase National Park, located approximately two kilometres to the north-east of Waitara Public School. Other patches are with 1km- see pink sections in the figures below. STIF is critically endangered because there is so little of it and remnants and small are disconnected. Figure 2.4 shows how uncommon and spread it is (see pink areas).

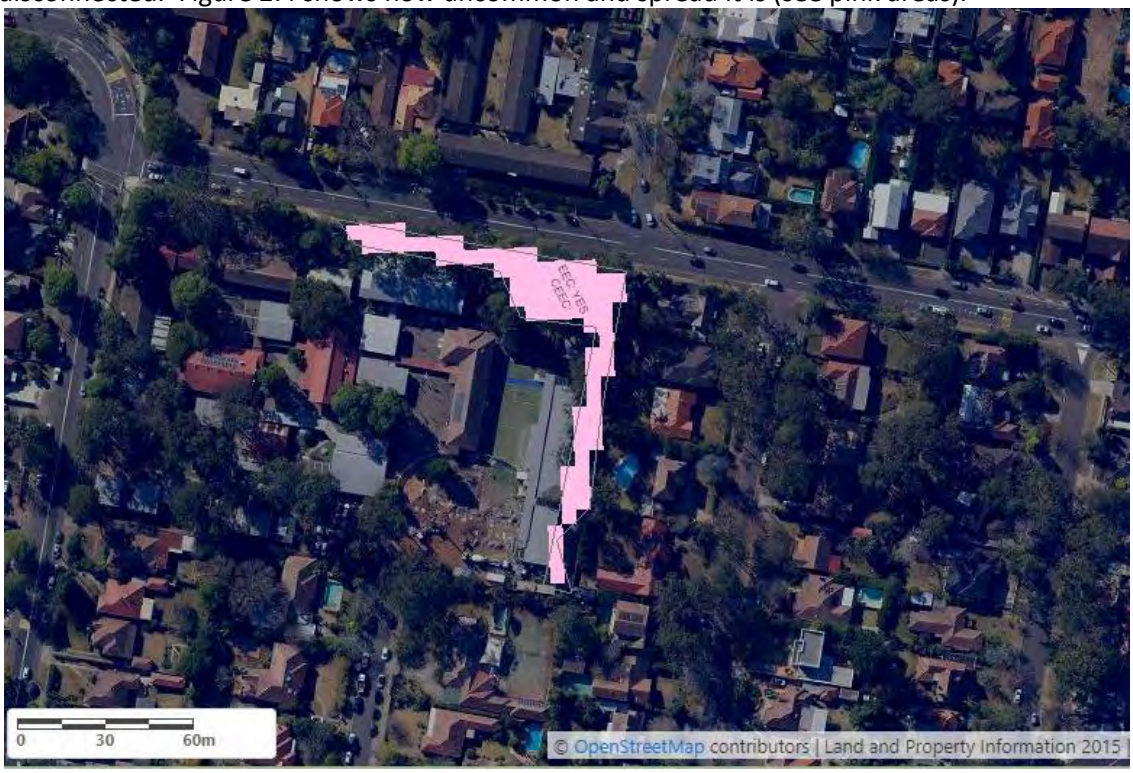


Figure 2.3 Vegetation mapping of Hornsby LGA – focus on STIF. Source: SEEDportal data VIS 4470).

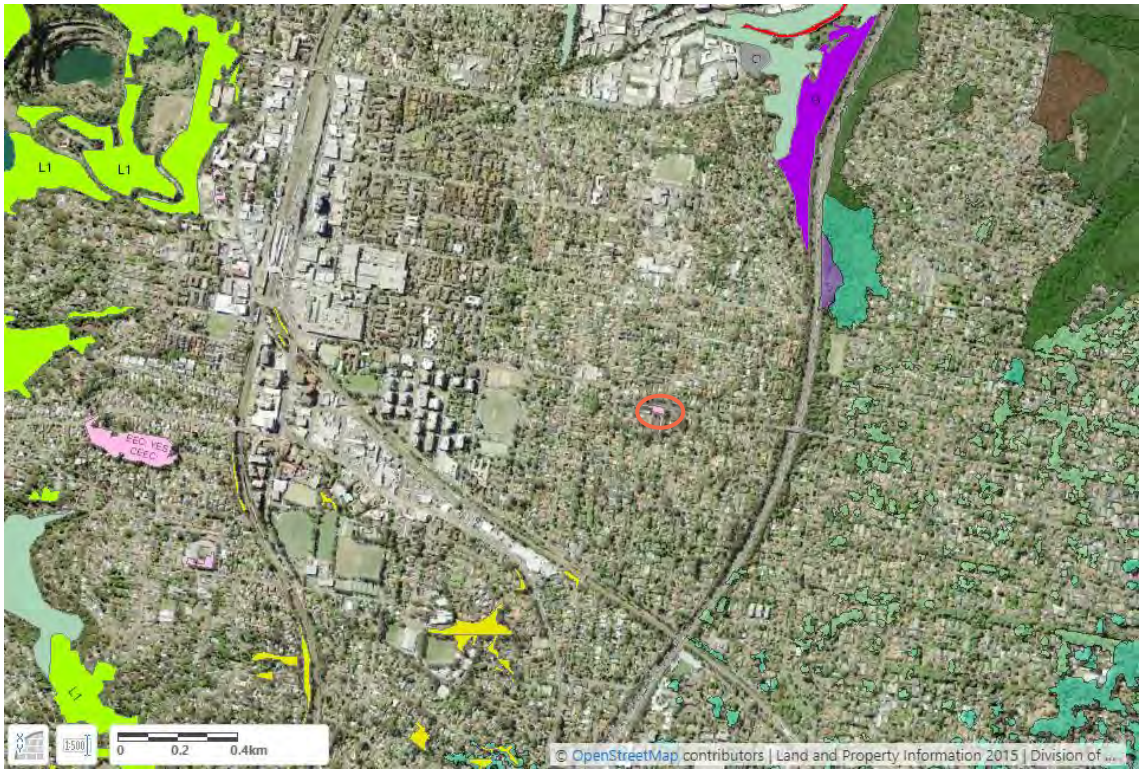


Figure 2.3 Vegetation Map Hornsby LGA 2008 Source: SeedData Portal VIS 4471 NB: orange circle is site.

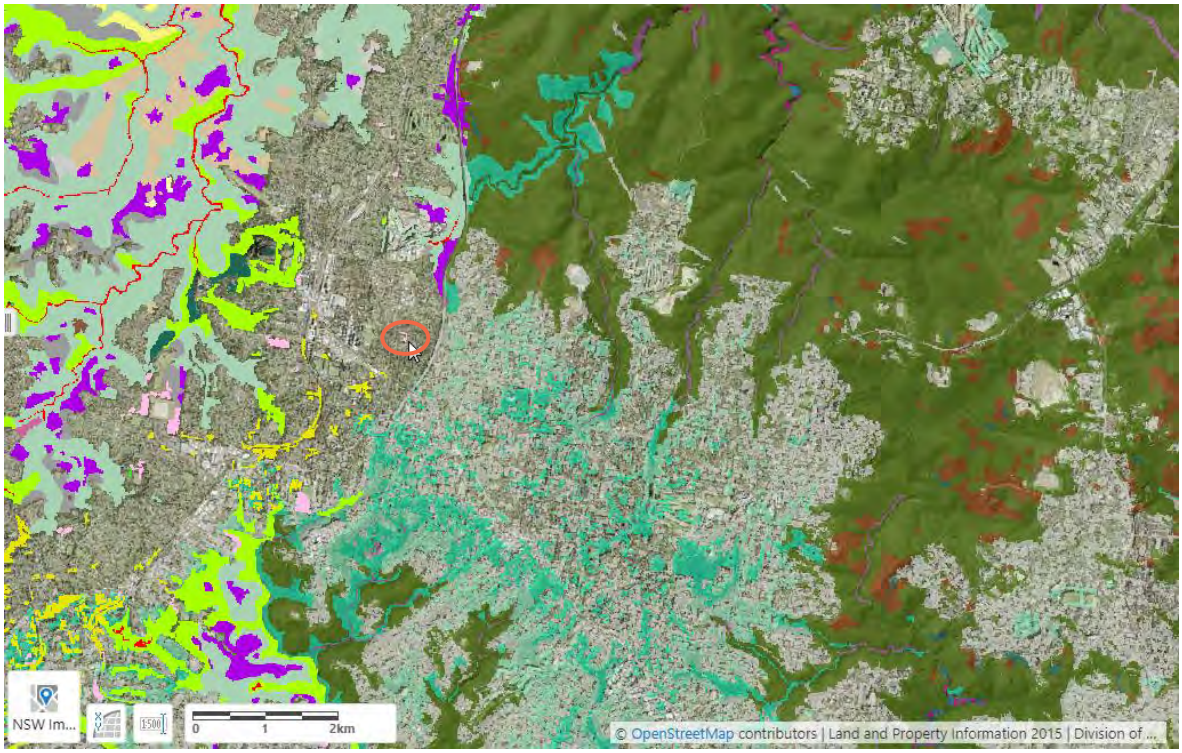


Figure 2.4 Vegetation Map Hornsby LGA 2008 Source: SeedData Portal VIS 4471 NB: orange circle is site.

3 Management

This management section includes measures to ensure biodiversity values are protected and weeds and pests are managed. The school has been identified as zones of biodiversity vales and associated works required. Zones are shown in Figure 3.1

Figure 3.1 Management Zones

Area for planting with STIF – ground and mid cover and facilitating natural regeneration of trees

Bush regeneration and assisted natural regeneration (possibly planting where necessary and approved)

access and play area (including existing platform) within bushland area

Canopy tree protection with based planting and Nature Play creation areas

Garden beds are too small to show on this map – photos have been included in the plan.

Areas not shaded are the subject of current works. The updated BMP (in 2yrs) should add this area.

While the diversity is high the abundance (cover) is low. Access within the remnant has resulted in less than 30% being vegetated. Large bare areas dominate. See management section for recommendations.
This can be rectified with natural (logs from site) delineation of regeneration areas. A whole-school engagement program to let the children and teachers know how special the location is why some areas have to be allowed to grow back.
In conjunction with access restriction other areas are to be planted where the focus can be 'nature-play' where as the focus of this remnant has to be 'conservation' first.

Entrance area to have dense planting locally native STIF species. Plant list and supply to be certifed by ecologist. Area for planting (highlighted) to direct people away from regeneration areas. Signage needed to engage re: regeneration.

Purple areas to be **no-go while regeneration occurs**. This would include **thermal 'weeder'** during school holidays and monitoring of natural regeneration prior to any planting occurring.
The area is NOT to be mulched. **Natural leaf litter is to be allow to accumulate** in these areas (this will still be complaint with fire mgt). Leaf litter could be managed at 5cm deep if the school needed to reduce it.
Logs (from the site) to be included in these areas to facilitate plant protection and minimise access.
Green: Lomandra (local) to be planted **around tree bases** for immediate protection)
Logs (from site) to be used as edging for path and access to platform.

Large logs (from site) to be put around access area. Edge planting to include Bursaria from local stock. Note Bursaria growing in the remnant now. Once edges are protection to occur prior to the active regeneration in 'rehabilitation areas'. Consider soil de-compaction with stiff metal rake followed by application of local leaf-mulch from accumulations within the remnant (~1-2cm deep). Works to be supervised or conducted by Bush Regenerator experienced in STIF regeneration.

3.1.1 Weeds to be Managed

Following images show some of the weed species to be removed. All works to be by, or supervised by a professional bush regenerator. Weed removal techniques are included in the Appendix including Thermal weeding (that will also assist with natural regeneration of native species).

The bushland zone is to achieve the following targets over the next 2 years. Works are to commence by July 2019 and occur at least 1/4ly. Grant funding can assist with any weed management.

At the end of 2 years this plan is to be reviewed and updated to cover the next 5 years of work.

1) Access way delineation and signage in-place as per this report by August 2019.
2) Bushregneration Zone to have 70% of area with ground cover of native plants and / or leaf litter. Of this area there is to be no gaps without native vegetation greater than $2m^2$.
3) The existing diversity is to be retained or improved: at least 2 species of native grasses, 6 native shrub species and four canopy species.

3.1.2 Measure to Protect Biodiversity during Works

Measures to protect biodiversity during works including implementing the following whenever works are conducted and include minimizing loss of fauna habitat including tree hollows and having procedures for relocating fauna out of trees to be removed/pruned – have an ecologist of wildlife carer on site during tree works where there are hollows. Access to the bushland areas would be best restricted to small passageways avoiding native vegetation to prevent soil disturbance in general and in particular, damage to native vegetation.

3.1.3 Trees and Fauna Surveys pre Tree Works (pruning removal), Tree Protection and re-use.

- Where trees are proposed for pruning or removal the following must be undertaken.
- If the trees has hollows it is to be inspected by the person removing the tree/branch. If no evidence of fauna the tree/branch is to be lowered with a crane or pulley system (eg ropes) not dropped.
- Once unground the hollow is to be inspected by ecologist or wildlife carer or bush regenerator.

- If fauna it is to be cared for and released on-site as soon as appropriate.

Habitat hollows are to be resecured on site (preferable to other trees). If not on a tree they are to be used as habitat within the school. Large logs can be used in the play-ground. Edging logs are needed in the bushland area to delineate no-go areas of bush regeneration. Logs from the site are recommended for this.

3.1.4 Tree short and long-term Maintenance

All trees on-site outside the bushland area are to have plantings around the base.
Planting can be with local stock of Lomandra or Dianella (or equivalent) this is to protect trees from maintenance activities and root compaction.
Planting is to fill the space at least 1m from the trunk and be maintained for the life of the tree. Leaf and bark build up is desirable in these areas to provide habitat for invertebrates.
Hollows are currently uncommon and nest boxes (x 6) are recommend to bring habitat into the trees on-site. Hollow development will occur as trees continue to mature. Any future 'dead-wooding' for safety reasons is to be accompanied by replacement habitat being installed.

3.1.5 Bush regeneration and weed management

Weed management within the bush regeneration area must be conducted by, or supervised by a person who is experienced in Bush regeneration and at least has Cert III or equivalent in Bush regeneration.

3.1.1 Weed Removal Techniques

Weed removal proposed for the site will consist of hand removal techniques, manual/mechanical removal using bush regenerator tools and winter thermal (flame) weeding. This approach will reduce the amount of herbicide used and reduce the amount of off-target damage through spot on application. Noting weeds on-site herbicide could be avoided completely. Asparagus Fern is sparse and easy to remove now.

See Appendix for further details on weed techniques.

3.1.1 Native Seed Collection and Propagation

Any native trees or shrubs being removed for the construction works should be checked for seeds during removal works. If seeds are present, they should be collected and used off-site, location to be determined with council. On-going collection and propagation. A license (132c) should be obtained – or council or contractor with the license should develop a seed collection and plant propagation program for the native plants within the bushland remnant. Seed could also be collection, with permission, from nearby STIF and plants propagated for the school grounds

3.1.1 Landscaping

Tremendous opportunities exist for landscaping within the school that both encourages and support biodiversity and engagement of the young people and teachers and parents with nature. It is recommended that a landscaping plan accompanied with an educational program be developed and funded by NSW Dept. of Education.

3.1.2 Fauna habitat

Fauna habitat can be created and enhanced and included in the curriculum studies.

Flowering Eucalypts canopy trees providing foraging resources for the threatened Grey Headed Flying Fox and microbats as well as local birds. Additional canopy trees need to be planted (local stock) as there is no natural recruitment at this stage. The marking off of areas of bushland will assist in facilitating natural regeneration within the bushland zone.

3.1.3 Rocks

Rocks (salvaged from nearby construction works) and terricottta pipes can be placed as habitat gardens withint eh site. These can be planted around and monitored by students as places for small skinks and beetles. In time the school could also become suitable to have habitat for frogs – they would also use habitat like this for over-wintering and sheltering.

3.1.4 Pathogen prevention

To prevent the introduction of pathogens, Bushland Hygiene Protocols outlined in the Appendix should be followed. The site is considered to be an area which may promote the spread of Phytophthora (a group of fungus-like diseases affecting plants) due to its moist soil and proximity to water. It is recommended that Bushland Hygiene Protocols be followed closely.

Phytophthora infected vegetation. (Image by Rasbak, licensed under the Creative Commons Attribution-Share Alike 3.0 Unported, 2.5 Generic, 2.0 Generic and 1.0 Generic license.)

Myrtle Rust generally infects new leaf growth. (Image by John Tann, licensed under the Creative Commons Attribution 2.0 Generic license.)

3.1.5 Vertebrate Pests

Vertebrate pests (cats, dogs, foxes) are considered a significant problem in urban areas such as this. Domestic and feral cats should be discouraged (so that small lizards and birds can thrive on-site). Education with students would greatly assist with getting cats kept indoors.

3.1.6 Threatened Fauna that could benefit from bushland care

Mircobats

Threatened Microbat species (Eastern Freetail-bat, Yellow-bellied Sheathtail Bat, Eastern False Pipistrelle, and Eastern Bentwing-bat) were identified as having potential foraging habitat within the site. Trees may contain marginal foraging habitat for species which feed on insects in or above the canopy. Installation of micro-bat nest boxes and care for canopy trees and mid and ground plants that support insects will assist micro-bats to live on site.

Microbats are mobile but do tend to use and re-use suitable areas and roost trees.

Grey-headed Flying-Fox

The threatened Grey-headed Flying-Fox (*Pteropus poliocephalus*) was identified as having potential foraging habitat within the site.

4 Monitoring

4.1 Bushland Zone

The bushland zone is to achieve the following targets over the next 2 years. Works are to commence by July 2019 and occur at least 1/4ly. A short report is to summarise works in that period. It is noted that grant funding can assist with any costs of the proposed management / monitoring.

At the end of 2 years this plan is to be reviewed and updated to cover the next 5 years of work.

4) Access way delineation and signage in-place as per this report by August 2019.

5) Bushregneration Zone to have 70% of area with ground cover of native plants and / or leaf litter. Of this area there is to be no gaps without native vegetation greater than $2m^2$.

6) The existing diversity is to be retained or improved:

   a. at least 2 species of native grasses,

   b. at least 6 native shrub species and

   c. four canopy species

4.2 Open Landscape Areas

- Canopy Trees to have plantings around them (as per this report)
- 'Nature-play' areas to be created and maintained to take pressure of the bushland zone. All trees to have at least 1m radius of planting within 12 months and this is to be maintained.

4.3 Appendix I – Threatened Species Habitat Preferences

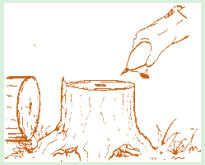
Scientific Name	Common Name	Habitat Preferences
Glossopsitta pusilla	Little Lorikeet	Prefers open Eucalypt forest and woodlands. Primarily feeds within the canopy of Eucalyptus, Angophora and Melaleuca trees. Prefers riparian areas but may visit isolated trees in open or cleared land.
Pteropus poliocephalus	**Grey-headed Flying-fox**	**Occurs within tall sclerophyll forests and woodlands, heath, swamp subtropical and temperate rainforests, and urban areas. Occurs within 20km of a significant food source. May be found close to gullies and water within vegetation with a dense canopy.**
Mormopterus norfolkensis	**Eastern Freetail-bat**	**Prefers to roost in tree hollows buy may roost under flaking bark or in man-made structures. Occurs east of the Great Dividing Range throughout dry sclerophyll forest, woodlands, swamp forest and mangrove forests.**
Chalinolobus dwyeri	Large-eared Pied Bat	Roosts in caves, cliff crevices, mine shafts and in old nests of the Fairy Martin. Typically inhabits low to mid elevation well-timbered dry open forests and woodlands in close proximity to suitable nesting. Prefers areas containing gullies.
Miniopterus australis	Little Bentwing-bat	Roosts in tree hollows, caves, tunnels, mine shafts, stormwater drains, culverts, bridges and buildings. Forages for insects in the tree canopy in densely vegetated areas. Prefers moist eucalyptus forests, rainforests, vine thickets, wet and dry sclerophyll forests, Melaleuca swamps, dense coastal forests and banksia scrub. Prefers well-timbered areas.
Miniopterus schreibersii oceanensis	**Eastern Bentwing-bat**	**Primarily roosts in caves but will utilise mine shafts, storm-water tunnels, buildings and other man-made structures. Forms colonies within a maternity cave and disperse within a 300km range. Forage in forested areas in the tree canopy.**
Scoteanax rueppellii	**Greater Broad-nosed Bat**	**Roosts in tree hollows but may be found in buildings. Primarily found in gullies and river systems that drain the Great Dividing Range. Occurs in a range of habitats including woodlands to moist or dry eucalypt forest, rainforest with greatest preference for tall wet forests. Forages along creeks and river corridors.**
Lophoictinia isura	Square-tailed Kite	Inhabits dry woodlands and open forests, particularly along timbered watercourses. Specialist hunter of passerines, especially honeyeaters, and most particularly nestlings, and insects in the tree canopy, picking most prey items from the outer foliage.

Note: Species in **bold** have been assumed as having appropriate habitat present on-site.

4.4 Appendix II – Key Weed Removal Methods

Physical removal

Technique	Method	Equipment
Hand Removal 	Seedlings and smaller weed species where appropriate will be pulled out by hand, without risk of injury to workers. The size that this can occur varies throughout the treatment area. Generally, it ranges from post seed to approximately 300mm in height. Rolling and raking is suitable for larger infestations of Wandering Jew. The weed can be raked and stems and plants parts rolled. The clump of weed material can then be bagged and removed from site.	Tools: Gloves, Rakes, Knife and Weed Bags
Crowning 	Plants that possess rhizomes or bulbs might not respond to various removal techniques and may need to be treated with crowning. A knife, mattock or trowel is to be driven into the soil surrounding the bulb or rhizome at an angle of approximately 45 degrees with surrounding soil, so as to cut any roots that may be running off. This is to occur in 360 degrees around the bulb/rhizome. The rhizome or bulb is to be bagged and removed from the site and disposed of at an appropriate waste recycling facility Soil disturbance is to be kept to a minimum when using this technique.	Tools: Knife, mattock, trowel, impervious gloves, and all other required P.P.E.
Cut and Paint Stems 	Weed species deemed unsuitable for hand removal shall be cut. Those that have persistent of vigorous growth will be cut and painted with Roundup® Biactive Herbicide or equivalent. Juvenile and smaller weed species will be cut with secateurs at base of plant, and herbicide applied via applicator bottle. Stem to be cut horizontally as close to the ground as possible, using secateurs, loppers or a pruning saw. Horizontal cuts to be made on top of stem to prevent the herbicide running off the stump. Apply herbicide to the cut stem immediately, within 10-20 seconds, before the plant cells close and the translocation of the herbicide is limited. Herbicide is not to reach sediment or surrounding non-targeting plants.	Tools: loppers, secateurs, pruning saw, herbicide applicator/sprayer, impervious gloves, Roundup® Biactive Herbicide and all other required P.P.E.

Technique	Method	Equipment
Scrape and Painting 	More resilient weed species, where other techniques are less reliable are to be scraped with a knife or chisel and painted with undiluted Roundup® Biactive Herbicide. Works to be carried out by a contractor with a current herbicide license. Weed species will be scraped with a knife or chisel up the length of the trunk, and herbicide applied via applicator bottle. Scrape the trunk from as close to the ground as possible to approximately ¾ of the plants height. Where trunk diameters exceed approximately 5 cm a second scrape shall be made on the other side of the trunk. Apply undiluted herbicide to the cut trunk immediately, within 10-20 seconds, before the plant cells close and the translocation of the herbicide is limited. All care must be taken by the contractor not to spill herbicide onto sediment or surrounding non-targeting plants. Follow up treatment may be required. If plants resprout, scrape and paint the shoots using the same method after sufficient regrowth has occurred.	Tools: knife, chisel, protective clothing, safety glasses herbicide applicator/sprayer, impervious gloves, Roundup® Biactive Herbicide, and all other required P.P.E.
Cut with a Chainsaw and Paint 	Larger size weed species, too large for cutting with hand tools, shall be cut with a chainsaw and painted with undiluted Roundup® Biactive Herbicide. Works to be carried out by a contractor with a current chainsaw and herbicide license. Larger weed species will be cut with a chainsaw at base of plant, and herbicide applied via applicator bottle. Cut the stem horizontally as close to the ground as possible, using the chainsaw. Remove upper branches to reduce bulk of plant. If cutting at the base is impractical, cut higher to get rid of the bulk of the weed, then cut again at the base and apply herbicide. Make cuts horizontal to prevent the herbicide running off the stump. Apply undiluted herbicide to the cut trunk immediately, within 10-20 seconds, before the plant cells close and the translocation of the herbicide is limited. Ensure there is no runoff of poison. All care must be taken by the contractor not to spill herbicide into water, onto sediment, or surrounding non-targeting plants. Follow up treatment will be required. If plants resprout, cut and paint the shoots using the same method.	Tools: chainsaw, ear muffs, protective clothing, safety glasses herbicide applicator/sprayer, impervious gloves, Roundup® Biactive Herbicide, and all other required P.P.E.

Flame Weeding

Thermal (flame) weeding is a method where high temperatures are applied to weeds, causing the plant to die. Thermal weeding is particularly useful in situations where conservation or health considerations are high and weed density is low such as waterways where herbicide use is not permitted.
While flame weeding is not suited to most streetscapes due to the fire hazard nor can it be used on materials such as soft fall and similar playground equipment it is noted that 'flame' weeding in waterways allows weed management in areas where herbicides are not permitted.
Also for native vegetation areas thermal weeding, with a flame weeder, has been shown to stimulate germination of native plants while killing the seeds of annual weeds such as Devils Pitchfork, *Bidens pilosa*.

Flame weeding should be undertaken outside of the fire seasons. Flame weeding allows for the mimicking of a burn in areas where a control burn could not be undertaken. See native plants regenerating after flame weeding.

Photos: Dragonfly Environmental

Appendix III – Bushland Hygiene Protocols for Phytophthora (Hornsby Council Recommendations)

- Always assume that the area you are about to work in is free of the disease and therefore needs to be protected against infection.
- And, always assume that the activity you are about to undertake has the potential to introduce the disease.
- Arrive at site with clean shoes, i.e.: no dirt encrusted on them.
- If you arrive with shoes that are encrusted with dirt, they will have to be completely soaked in metho or disinfectant and allow a few minutes to completely soak in. NEVER scrape untreated dirt off your shoes onto the ground.
- Before you move onto the site spray the bottom of your shoes with 70 % metho. Bleach solution (1% strength) or household/commercial disinfectant (as per label) are also suitable.
- Check all tools and equipment that comes in contact with soil are clean before entering the area (they should have been cleaned on site at the end of the previous work session). If there is any dirt on them, spray them with 70% metho.
- Clean all tools at the end of each work session while still on site ensuring this is done away from drainage lines and adjacent work areas. Knock or brush off encrusted dirt and completely spray with 70 % metho. Replace in storage/transport containers.
- Preferably compost all weed material on site.
- Never drag vegetation with exposed roots and soil through bushland.
- When removing weeds from site, remove as much soil as possible from them in the immediate work area and carefully place vegetative material into plastic bags.
- Try not to get the bag itself dirty; don't put it on/in a muddy area.
- Always work from the lower part of a slope to the upper part.
- Always work in areas known to be free of the pathogen before working in infected areas.
- Minimise activities wherever possible when the soil is very wet.
- Vehicles should not be driven off track or into reserves (unless vehicle decontamination is carried out before and after entering a single work site)
- Only accredited supplies of plants/mulch to be used.

Kit should contain: 1 bucket, 1 scrubbing brush, 1 spray bottle (metho 70% solution), 1 bottle tap water, 1 bottle methylated spirits.

Facts about Phytophthora

Phytophthora cinnamomi (Phytophthora) is a microscopic, soil borne, water-mould that has been implicated in the death of remnant trees and other plants in Australian bushland. Phytophthora is not native to Australia. It is believed to have been introduced sometime after European settlement. Phytophthora is a national problem and is listed as a key threatening process under the Commonwealth's Environmental Protection and Biodiversity Conservation Act 1999.

Symptoms including Dieback

"Dieback" simply means dying or dead plants. There are many causes of dieback; Phytophthora is just one of them. Often dieback is the result of a combination of factors such as; changed drainage patterns and nutrient loads (e.g.: increased stormwater run-off) or changed soil conditions (e.g.: dumped fill or excavation of/near root zone). Plants that are stressed are more vulnerable to Phytophthora.

Initial symptoms of Phytophthora include; wilting, yellowing and retention of dried foliage, loss of canopy and dieback. Infected roots blacken and rot and are therefore unable to take-up water and nutrients. Severely infected plants will eventually die. Symptoms can be more obvious in summer when plants may be stressed by drought. If you suspect that Phytophthora is on your site, please contact the Bushcare team to collect a soil sample to be lab tested. This is usually done in the warmer months where conditions are optimum for the disease.

Infection

There is no way of visually telling if Phytophthora is present in the soil as its structures and spores are microscopic (invisible to the naked eye). Phytophthora requires moist soil conditions and warm temperatures for infection, growth and reproduction. Spores travel through moist soil and attach to plant roots. Once Phytophthora has infected a host plant it can grow inside plant root tissue independent of external soil moisture conditions. After infection, Phytophthora grows through the root destroying the tissue which is then unable to absorb water and nutrients.

Appendix IV– Commonwealth Government Protected Matters Search

A Protected Matters Search was conducted.

Report Generation ID: UJN71L Coordinates: -33.70792, 151.11136

The search listed seven Threatened Ecological Communities, four frogs, and eight mammals (see Appendix I)

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Name	Status	Type of Presence
Blue Gum High Forest of the Sydney Basin Bioregion	Critically Endangered	Community likely to occur within area
Castlereagh Scribbly Gum and Agnes Banks Woodlands of the Sydney Basin Bioregion	Endangered	Community may occur within area
Coastal Upland Swamps in the Sydney Basin Bioregion	Endangered	Community may occur within area
Cooks River/Castlereagh Ironbark Forest of the Sydney Basin Bioregion	Critically Endangered	Community may occur within area
Shale Sandstone Transition Forest of the Sydney Basin Bioregion	Critically Endangered	Community may occur within area
Turpentine-Ironbark Forest of the Sydney Basin Bioregion	Critically Endangered	Community likely to occur within area
Western Sydney Dry Rainforest and Moist Woodland on Shale	Critically Endangered	Community may occur within area

Frogs		
Heleioporus australiacus Giant Burrowing Frog [1973]	Vulnerable	Species or species habitat likely to occur within area
Litoria aurea Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat known to occur within area
Litoria littlejohni Littlejohn's Tree Frog, Heath Frog [64733]	Vulnerable	Species or species habitat may occur within area
Mixophyes balbus Stuttering Frog, Southern Barred Frog (in Victoria) [1942]	Vulnerable	Species or species habitat likely to occur within area
Mammals		
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat known to occur within area
Isoodon obesulus obesulus Southern Brown Bandicoot (eastern), Southern Brown Bandicoot (south-eastern) [68050]	Endangered	Species or species habitat likely to occur within area
Petauroides volans Greater Glider [254]	Vulnerable	Species or species habitat likely to occur within area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat likely to occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat known to occur within area
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area

State (NSW) Threatened Species within 10km

A total of 326 fauna species have been recorded within 10km of the study site according to BioNet records since 1993. Of these, 39 species are currently listed as vulnerable or endangered under state and/or commonwealth legislation. The vulnerable and endangered species to focus on-site searches for can be seen in Table 4 below, this is based on likelihood of occurrence.

NB: species whose habitat doesn't occur on site have been omitted from this list – those with marginal habitat have been retained on the list.

Threatened fauna observed in previous ecological surveys within a 10km radius since 1993. Source: NSW OEH Bionet 2019.

Class	Scientific Name	Common Name	NSW Status	Comth. Status	No. of records
Gastropoda	*Pommerhelix duralensis*	Dural Land Snail	E1	E	1

Class	Scientific Name	Common Name	NSW Status	Comth. Status	No. of records
Amphibia	*Litoria aurea*	Green and Golden Bell Frog	E1,P	V	1
Aves	*Calidris ferruginea*	Curlew Sandpiper	E1,P	CE,C,J,K	5
Mammalia	*Isoodon obesulus obesulus*	Southern Brown Bandicoot (eastern)	E1,P	E	105
Aves	*^^Lathamus discolor*	Swift Parrot	E1,P,3	CE	1
Aves	*^^Callocephalon fimbriatum*	Gang-gang Cockatoo population in the Hornsby and Ku-ring-gai Local Government Areas	E2,V,P,3		52
Aves	*Anthochaera phrygia*	Regent Honeyeater	E4A,P	CE	1
Amphibia	*Heleioporus australiacus*	Giant Burrowing Frog	V,P	V	6
Amphibia	*Pseudophryne australis*	Red-crowned Toadlet	V,P		67
Reptilia	*Varanus rosenbergi*	Rosenberg's Goanna	V,P		8
Aves	*Ptilinopus superbus*	Superb Fruit-Dove	V,P		3
Aves	*Ixobrychus flavicollis*	Black Bittern	V,P		1
Aves	*Haliaeetus leucogaster*	White-bellied Sea-Eagle	V,P	C	6
Aves	*Hieraaetus morphnoides*	Little Eagle	V,P		7
Aves	*Limicola falcinellus*	Broad-billed Sandpiper	V,P	C,J,K	1
Aves	*Glossopsitta pusilla*	Little Lorikeet	V,P		5
Aves	*Daphoenositta chrysoptera*	Varied Sittella	V,P		4

Class	Scientific Name	Common Name	NSW Status	Comth. Status	No. of records
Aves	*Artamus cyanopterus cyanopterus*	Dusky Woodswallow	V,P		1
Aves	*Petroica boodang*	Scarlet Robin	V,P		4
Mammalia	*Dasyurus maculatus*	Spotted-tailed Quoll	V,P	E	8
Mammalia	*Phascolarctos cinereus*	Koala	V,P	V	3
Mammalia	*Cercartetus nanus*	Eastern Pygmy-possum	V,P		45
Mammalia	*Pteropus poliocephalus*	Grey-headed Flying-fox	V,P	V	126
Mammalia	*Saccolaimus flaviventris*	Yellow-bellied Sheathtail-bat	V,P		4
Mammalia	*Mormopterus norfolkensis*	Eastern Freetail-bat	V,P		18
Mammalia	*Chalinolobus dwyeri*	Large-eared Pied Bat	V,P	V	2
Mammalia	*Falsistrellus tasmaniensis*	Eastern False Pipistrelle	V,P		3
Mammalia	*Miniopterus australis*	Little Bentwing-bat	V,P		8
Mammalia	*Miniopterus schreibersii oceanensis*	Eastern Bentwing-bat	V,P		66
Mammalia	*Myotis macropus*	Southern Myotis	V,P		4
Mammalia	*Scoteanax rueppellii*	Greater Broad-nosed Bat	V,P		5
Mammalia	*Pseudomys gracilicaudatus*	Eastern Chestnut Mouse	V,P		2
Aves	*^Calyptorhynchus lathami*	Glossy Black-Cockatoo	V,P,2		34

Class	Scientific Name	Common Name	NSW Status	Comth. Status	No. of records
Aves	^^*Lophoictinia isura*	Square-tailed Kite	V,P,3		12
Aves	^^*Callocephalon fimbriatum*	Gang-gang Cockatoo	V,P,3		52
Aves	^^*Polytelis swainsonii*	Superb Parrot	V,P,3	V	1
Aves	^^*Ninox connivens*	Barking Owl	V,P,3		2
Aves	^^*Ninox strenua*	Powerful Owl	V,P,3		265
Aves	^^*Tyto novaehollandiae*	Masked Owl	V,P,3		5

Note: E = Endangered, V = Vulnerable, P = Protected. Species in bold have been identified as having appropriate habitat present on-site.

Threatened flora

BioNet records within 10km of the study site had 24 species currently listed as vulnerable or endangered under state and/or commonwealth legislation, out of a total of 1,267 species. The vulnerable and endangered species to focus on-site searches for can be seen in **Table** below. This is based on likelihood of occurrence.

Threatened flora recorded within a 10km radius since 1993. Source: NSW OEH Bionet 2019.

Family	Scientific Name	Common Name	NSW status	Comm. status	Records
Dilleniaceae	*Hibbertia superans*		E1		1
Fabaceae (Mimosoideae)	*Acacia bynoeana*	Bynoe's Wattle	E1	V	5
Haloragaceae	*Haloragodendron lucasii*		E1	E	68
Myrtaceae	*Syzygium paniculatum*	Magenta Lilly Pilly	E1	V	21
Rubiaceae	*Galium australe*	Tangled Bedstraw	E1		7

Family	Scientific Name	Common Name	NSW status	Comm. status	Records
Grammitidaceae	^^*Grammitis stenophylla*	Narrow-leaf Finger Fern	E1,3		4
Proteaceae	*Persoonia mollis subsp. maxima*		E1,P	E	94
Orchidaceae	^*Genoplesium baueri*	Bauer's Midge Orchid	E1,P,2	E	4
Proteaceae	^^*Persoonia hirsuta*	Hairy Geebung	E1,P,3	E	2
Myrtaceae	*Rhodamnia rubescens*	Scrub Turpentine	E4A		6
Elaeocarpaceae	*Tetratheca glandulosa*		V		177
Ericaceae	*Epacris purpurascens var. purpurascens*		V		41
Fabaceae (Mimosoideae)	*Acacia pubescens*	Downy Wattle	V	V	3
Malvaceae	*Lasiopetalum joyceae*		V	V	10
Myrtaceae	*Darwinia biflora*		V	V	274
Myrtaceae	*Darwinia peduncularis*		V		17
Myrtaceae	*Eucalyptus camfieldii*	Camfield's Stringybark	V	V	12
Myrtaceae	*Eucalyptus nicholii*	Narrow-leaved Black Peppermint	V	V	1
Myrtaceae	*Kunzea rupestris*		V	V	1
Myrtaceae	*Leptospermum deanei*		V	V	11
Myrtaceae	*Melaleuca deanei*	Deane's Paperbark	V	V	57

Family	Scientific Name	Common Name	NSW status	Comm. status	Records
Proteaceae	*Grevillea juniperina subsp. juniperina*	Juniper-leaved Grevillea	V		1
Thymelaeaceae	*Pimelea curviflora var. curviflora*		V	V	4
Myrtaceae	*^^Callistemon linearifolius*	Netted Bottle Brush	V,3		2

Fauna findings from site assessment March 2019

Table 6 provides a list of vertebrate fauna recorded during the site visit.

Fauna recorded on the site.

Class	Scientific Name	Common Name	NSW Status	Comth. Status
		Ants	na	
Reptilia	*Lampropholis delicata*	Dark-flecked Garden Sunskink	P	
Aves	*Trichoglossus haematodus*	Rainbow Lorikeet	P	
Aves	*Manorina melanocephala*	Noisy Miner	P	
Aves	*Cracticus tibicen*	Australian Magpie	P	
Aves	*Strepera graculina*	Pied Currawong	P	

N/A: None of these are listed at a State or Federal level as endangered species.

Expertise of author

Geraldene Dalby-Ball
DIRECTOR

With over 20 years wetland and urban ecology experience, a great passion for what she does, and extensive technical and on-ground knowledge make Geraldene a valuable contribution to any project.

Geraldene has over 8 years local government experience as manager of environment and education for Pittwater Council. Geraldene presented papers on the topic at the NSW Coastal Conference, Sydney CMA and Hawkesbury Nepean forums. Geraldene is a Technical Advisor Sydney Olympic Park Wetland Education and Training (WET) panel.

Geraldene has up to date knowledge of environmental policies and frequently provides input to such works. Geraldene was a key contributor to the recent set of Guidelines commissioned by South East Queensland Healthy Waterways Water Sensitive Urban Design Guidelines. Geraldene's role included significant contributions and review of the Guideline for Maintaining WSUD Assets and the Guideline for Rectifying WSUD Assets.

Geraldene is a frequent contributor to many community and professional workshops on ecological matters particularly relating to environmental management. She is an excellent Project Manager.

Geraldene is a joint author on the popular book Burnum Burnum's Wildthings published by Sainty and Associates. Author of the Saltmarsh Restoration Chapter Estuary Plants of East Coast Australia published by Sainty and Associates (2013). Geraldene's early work included 5 years with Wetland Expert Geoff Sainty of Sainty and Associates. Geraldene is an expert in creating and enhancing urban biodiversity habitat and linking People with Place.

SPECIALISATIONS

- Urban Ecology – and habitat rehabilitation and re-creation.
- Urban waterway management – assessing, designing and supervising rehabilitation works
- Saltmarsh and Wetland re-creation and restoration – assessment, design and monitoring
- Engaging others in the area of environmental care and connection
- Technical Advisor – environmental design, guidelines and policies
- Sound knowledge and practical application of experimental design and statistics
- Project management and supervision
- Grant writing and grant assessment
- Budget estimates and tender selection
- Expert witness in the Land and Environment Court

CAREER SUMMARY

- **Director and Ecologist**, Ecological Consultants Australia. 2014-*present*
- **Director and Ecologist**, Dragonfly Environmental. 1998-*present*
- **Manager** Natural Resources and Education, Pittwater Council 2002-2010
- **Wetland Ecologist** Sainty and Associates 1995-2002

QUALIFICATIONS AND MEMBERSHIPS

- **Bachelor of Science with 1st Class Honors**, Sydney University
- WorkCover WHS General Induction of Construction Industry NSW White Card.
- Senior First Aid Certificate.
- **Practicing member** Ecological Consultants Association of NSW
- **Accredited Biobanking Certifier**

Annexure 6

Unexpected finds protocol – Contamination

UNEXPECTED FINDS GENERAL REQUIREMENTS

Refer also to the attached *Contaminants General Requirements Sheet*

DISCOVERY
Suspect material e.g. Asbestos is uncovered on site. No person is to handle the suspect material.

ADCO NOTIFICATION
Discovery is reported immediately to the ADCO Site Manager or nearest ADCO personnel responsible for the work area. Notification in person, by mobile phone or nurse call system

ASSESSMENT
ADCO Site Management to assess the area and material uncovered and determine the following actions:
a). extent of barricades and signage required
b). Notification to external parties e.g. Client, Authorities and consultants

EXCLUSION ZONE
ADCO Site Management to establish an exclusion zone and install appropriate warning signage. No unauthorised entry allowed.

EXPERT GUIDANCE
ADCO to engage a Licensed Assessor to attend site, inspect the suspect material and carry out testing. Upon receipt of testing results, the Assessor is to prescribe the necessary methodology for the material removal and disposal.

CLEARANCE
If required, a Licensed contractor is to carry out the removal in accordance with the Assessors methodology. Upon completion the Assessor is to reinspect and provide a clearance certificate. The exclusion zone is then lifted and normal works can resume

CLIENT SUBMISSION
On Completion provide the Client (and Planning Secretary) records of test results, clearance certificates, tip dockets and location of material disposal and associated information as requested.

Annexure 7

Unexpected finds protocol – Aboriginal and Non-Aboriginal Heritage

CULTURAL HERITAGE

DESCRIPTION

Cultural heritage is our window to the past.

Heritage includes tangible culture (e.g. buildings, monuments, landscapes, books, works of art, and artefacts), intangible culture (e.g. folklore, traditions, language, and knowledge), and natural heritage (e.g. culturally significant landscapes).

Our heritage is inherited from past generations, maintained by present generations and for the benefit of future generations.

Aboriginal cultural heritage includes physical and spiritual sites, places, objects, stories, oral histories, flora, fauna and documents relating to Aboriginal occupation before and after European contact.

Aboriginal cultural heritage consists of physical (tangible) or non-physical (intangible) elements and includes items made and used in traditional societies (e.g. stone tools, art sites and ceremonial or burial grounds) as well as historical elements (e.g. old mission buildings, massacre sites).

LEGISLATION

In additional to Federal legislation, all State and Territory governments have broad responsibilities for recognising and protecting Australia's heritage. Heritage laws protect, preserve, present, and transmit the Australian's natural, cultural, and historical heritage.

HERITAGE INFORMATION

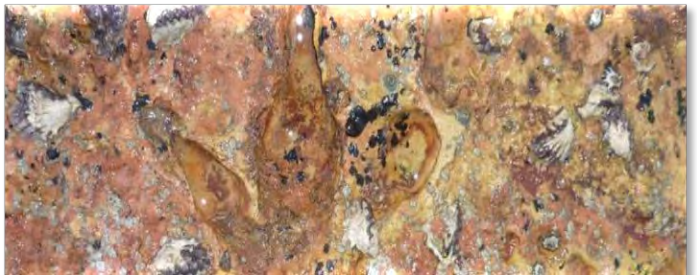
Heritage places are identified and grouped (by type) into so that they can be provided with protection and management to ensure the continuing of heritage values. Heritage places are grouped as follows:

World Heritage sites

World Heritage sites are places that are important to and belong to everyone, irrespective of where they are located. They have universal value that transcends the value they hold for a particular nation and are identified according to the World Heritage Convention.

The World Heritage Convention aims to promote cooperation among nations to protect heritage from around the world that is of such outstanding universal value that its conservation is important for current and future generations.

www.environment.gov.au/heritage/places/world-heritage-list



Dinosaur track, NT

Heritage is **all the things that make up Australia's identity** - our spirit and ingenuity, our historic buildings, and our unique, living landscapes. Our heritage is a **legacy from our past**, a living, integral **part of life today**, and the stories and places we **pass on to future generations**.

National Heritage

The National Heritage List is Australia's list of natural, historic and Indigenous places of outstanding significance to the nation.

www.environment.gov.au/heritage/places/national-heritage-list

Flinders Street Station, VIC

Shearers Shack, SA

Indigenous heritage

Aboriginal and Torres Strait Islander heritage is an important part of Australian heritage as evidence of the occupation of Australia by Aboriginal and Torres Strait Islander people dates back more than 60,000 years.

As well as historically important, Indigenous heritage is of continuing significance, creating and maintaining continuous links with the people and the land. Places that hold great meaning and significance to Indigenous people include:

- places associated with Dreaming stories depicting the laws of the land and how people should behave
- places that are associated with their spirituality
- places where other cultures came into contact with Indigenous people
- places that are significant for more contemporary uses.

www.environment.gov.au/heritage/about/indigenous-heritage

Commonwealth heritage

Commonwealth Heritage comprises natural, Indigenous and historic heritage places on Commonwealth lands and waters or under Australian Government control.

The Commonwealth Heritage List is a list of natural, Indigenous and historic heritage places owned or controlled by the Australian Government.

www.environment.gov.au/heritage/places/commonwealth-heritage-list

Warwick Post Office, QLD

Jervis Bay Botanical Gardens, NSW

SITE MANAGEMENT

Construction activities most likely to cause impacts to heritage buildings or areas include, but are not limited to:

- Flora clearing activities.
- Trenching and excavation work activities (e.g. vibration).
- Dust emissions from general work activities.
- Damage by plant / equipment / substance operation or storage on or near heritage sites.

Potential or actual heritage issues are normally identified during the planning / development approval period of a project and the required controls are generally noted in the Development Approval (DA).

Where heritage management requirements are noted in a DA, the information and controls must be:

- Incorporated into the Project Plan and the Environmental Risk Register.
- (as required) Detailed in a stand-alone Management Plan (e.g. Cultural Heritage Plan).
- Provided to relevant subcontractors for consideration in their pricing and their SWMS.
- Provided to workers through site consultative processes.
- Monitored for compliance during the completion of the project.

MANAGING UNEXPECTED FINDS

An **'unexpected heritage find'** is "any unanticipated archaeological discovery that has not been identified during a previous assessment or is not covered by an existing permit under relevant legislation".

The range of potential archaeological discoveries can include but are not limited to:

- Aboriginal stone artefacts, shell middens, burial sites, engraved rock art, scarred trees.
- Remains of infrastructure including buildings, footings, old kerbing and pavement, former road surfaces, timber and stone culverts, bridge footings and retaining walls.
- Artefact scatters including clustering of broken and complete bottles, glass, ceramics, animal bones and clay pipes.

When a "find" is identified in a work area:

1. All work in the find area must be stopped and the find must be reported to the Site Manager.
2. The Site Manager must establish a 'no-go zone' for at least 10 metres around the find. (e.g. fencing, hi viz mesh, solid barricades) where practical. No interference, including works, ground disturbance is allowed in the zone.
3. The Site Manager must notify the Project Manager.
4. The Project Manager to contact a heritage Adviser and arrange for the Adviser to assess the find.
5. Subject to assessment, work may recommence at a set distance from the item. Existing protective barriers may need to be adjusted.
6. To recommence work in the find area, the Project Manager must obtain written clearance from the Adviser including any additional project/heritage approvals/determinations.
7. Where required, the Project Manager / State SHE Manager will be required to update the Project Risk Register (environmental) to reflect the find and any additional conditions / controls.
8. The Site Manager or S&E Adviser will be required to incorporate any changes to the PMP into: the site induction presentation; (as required) the Traffic Movement Plan and the Pre-Start Meeting.

Annexure 8

SINSW Community Communication Strategy April 2019

NSW GOVERNMENT | Education

April 2019

School Infrastructure NSW

Community Communication Strategy

Waitara Public School

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Document Purpose

This Community Communication Strategy (CCS) has been developed to:

- Successfully consider and manage stakeholder and community expectations as integral to the successful delivery of the project.
- Outline interfaces with other disciplines, including safety, construction, design and environment, to ensure all activities are co-ordinated and drive best practice project outcomes.
- Inform affected stakeholders, such as the local community or road users about construction activities.
- Provide a delivery strategy which enables the open and proactive management of issues and communications.
- Highlight supporting procedures and tools to enable the team to deliver this plan effectively.
- Provide support for the broader communications objectives of School Infrastructure NSW (SINSW), including the promotion of the project and its benefits.

This Community Consultation Strategy (CCS) will be implemented through the design and construction phase of the project, and for 12 months following construction completion.

Plan review

The CCS will be revised regularly to address any changes in the project management process, comments and feedback by relevant stakeholders, and any changes identified as a result of continuous improvement undertakings. This will be done in close consultation with the SINSW Senior Project Director, appointed Project Management Company and/or Contractor and SINSW Community Engagement Manager.

Approval

The CCS is reviewed and approved by the SINSW Senior Project Director, in close consultation with Schools Operations and Performance, with final endorsement from the SINSW Community Engagement Senior Manager before being submitted to the Planning Secretary for approval.

Table 1: List of SSD requirements and where they are addressed

State Significant Developments B13	The community communications strategy addresses this in:
Identify people to be consulted during the design and construction phase	▪ Section 4 ▪ Section 5
Set out procedures and mechanisms for the regular distribution of accessible information about or relevant to the development	▪ Section 6 ▪ Section 7 ▪ Section 8.4
Provide for the formation of community-based forums, if required, that focus on key environmental management issues for the development	▪ Section 4
Set out procedures and mechanisms:	
▪ Through which the community can discuss or provide feedback to the Applicant	▪ Section 4, PRG ▪ Section 6 ▪ Section 8.5
▪ Through which the Applicant will respond to enquiries or feedback from the community; and	▪ Section 8.5
▪ To resolve any issues and mediate any disputes that may arise in relation to construction and operation of the development, including disputes regarding rectification or compensation.	▪ Section 8.5

1. Context

The NSW Government is investing $6 billion over the next four years to deliver more than 170 new and upgraded schools to support communities across NSW. In addition, a record $1.3 billion is being spent on school maintenance over four years. This is the largest investment in public education infrastructure in the history of NSW.

A major project is underway to upgrade Waitara Public School. This upgrade will deliver:

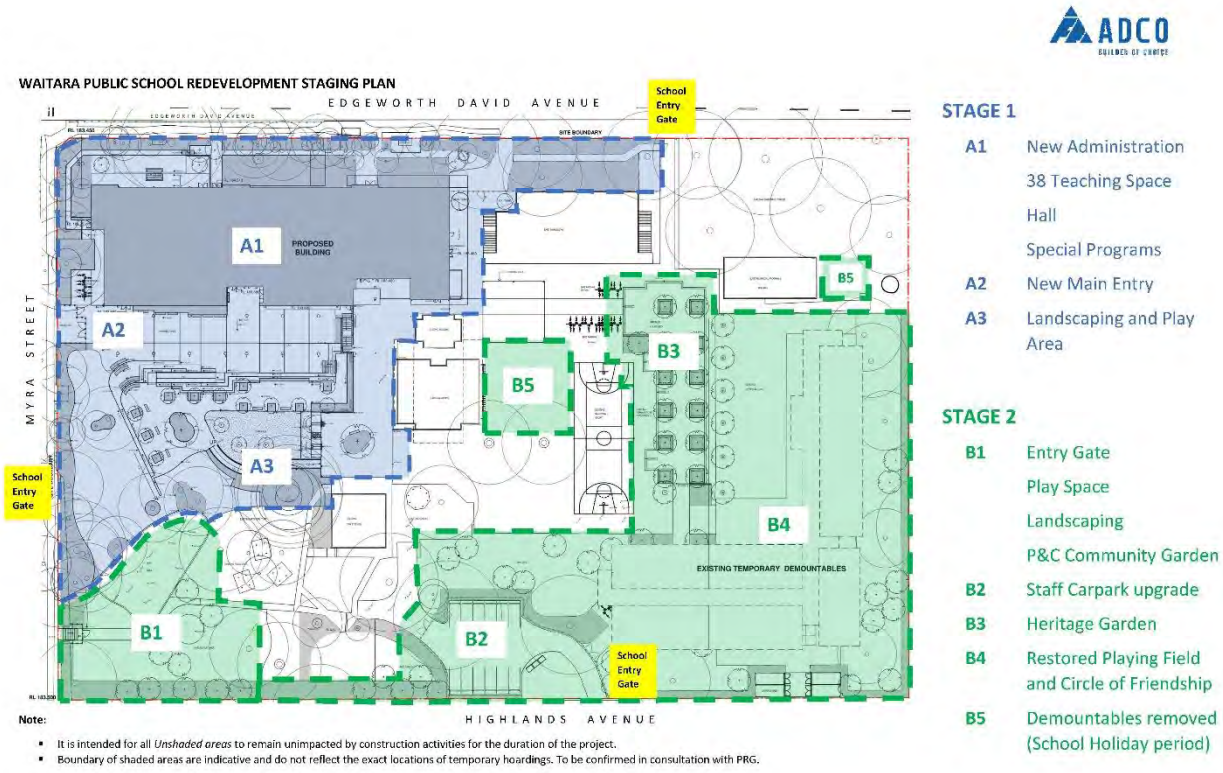
- 38 new permanent teaching spaces
- two existing permanent teaching spaces converted to special programs rooms
- a new hall
- a new canteen
- new staff and administration facilities
- an upgrade to core facilities, such as increased library space distributed within the new building

The project is being delivered in stages to allow the school to continue to operate on the existing site throughout construction, as outlined in Figure 1 below.

Project stages:

- **Stage 1**: New permanent teaching spaces, administration building & library (indicative May 2020)
- **Stage 2:** Demolition of existing administration building, landscaping and removal of demountables (indicative July 2020)

Figure 1 – Waitara Public School project staging



Air-conditioned temporary classrooms were installed on site in mid-2018 and these have been operational since October 2018.

The Waitara Public School upgrade is classified as a State Significant Development, and has been assessed by the Department of Planning and Environment (DPE). Consent was provided on 26/02/19. DPE's web page on the project is here.

2. Community Engagement Objectives

SINSW's mission is to provide school infrastructure solutions by working collaboratively with all our stakeholders to create learning environments across NSW that serve our future needs and make us all proud.

This CCS has been developed to achieve the following community engagement objectives:

- Promote the benefits of the project
- Build key school community stakeholder relationships and maintain goodwill with impacted communities
- Manage community expectations and build trust by delivering on our commitments
- Provide timely information to impacted stakeholders, schools and broader communities
- Address and correct misinformation in the public domain
- Reduce the risk of project delays caused by negative third party intervention
- Leave a positive legacy in each community.

3. Key Messages

Through each phase of the project, the key messages and means of engagement will be regularly reviewed, refined and updated. Information that is currently in the public domain is outlined below.

3.1. High level messaging

The NSW Government is investing $6 billion over the next four years to deliver more than 170 new and upgraded schools to support communities across NSW. In addition, a record $1.3 billion is being spent on school maintenance over four years. This is the largest investment in public education infrastructure in the history of NSW.

3.2. Project messaging

3.2.1. Project status

The State Significant Development Application has been assessed by the Department of Planning & Environment and consent has been provided.

3.2.2. Project benefits

A major project is underway to upgrade Waitara Public School. This upgrade will deliver:

- 38 new permanent teaching spaces
- two existing permanent teaching spaces converted to special programs rooms
- a new hall
- a new canteen
- new staff and administration facilities
- an upgrade to core facilities, such as increased library space distributed within the new building.

The project is being delivered in two stages. Stage 1 is scheduled to be delivered around May 2020 with Stage 2 to commence after this, for completion around July 2020. This staged approach is required to allow the school to continue operating during construction.

3.2.3. High-quality learning environment

The project will provide state-of-the-art classrooms and learning spaces that make use of the latest technology to enhance the learning experience for the next generation of students. Furthermore, the contemporary and sustainable facilities provide an outstanding working environment for school staff.

Flexible learning spaces are adaptable to accommodate small or large groups and facilitate students use of modern technology, while working independently and collaboratively.

3.2.4. Environmental benefits

The new school will be built in accordance with current sustainability principles. SINSW is committed to environmentally conscious construction and maintenance practices.

3.3. Construction phase

3.3.1. Traffic management

The construction contractor has developed a Traffic Management Plan to ensure that vehicle movements are managed with minimal disruption to the local community.

3.3.2. Safety

School Infrastructure NSW is committed to ensuring that work is completed safely and efficiently and with minimal impact to the local community. Prior to construction starting, any hazardous material is required to be removed from the site. This work will be carried out in accordance with regulatory requirements including the provisions of SafeWork NSW.

3.3.3. Noise and dust

Any activity that could exceed approved construction noise management levels will be managed in strict accordance with the Protection of the Environment Operations Act 1997.

Mitigation measures will be in place to manage noise and dust levels, including hoarding to minimise the effects of noise and dust and hosing down as required to ensure the safety of the school and local community.

Construction works, including the delivery of materials to and from the site, will take place between 7am and 6pm Monday to Friday and between 8am and 1pm on Saturdays. No night work is scheduled for this project and no work will occur on Sundays or public holidays.

Rock breaking, rock hammering, sheet piling, pile driving and similar activities may only be carried out between the following hours:

(a) 9am to 12pm, Monday to Friday;

(b) 2pm to 5pm Monday to Friday; and

(c) 9am to 12pm, Saturday.

Activities may be undertaken outside of these hours if required:

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

(b) in an emergency to avoid the loss of life, damage to property or to prevent environmental harm; or

(c) where the works are inaudible at the nearest sensitive receivers; or

(d) where a variation is approved in advance in writing by the Planning Secretary or his nominee if appropriate

justification is provided for the works.

Notification of such activities must be given to affected residents before undertaking the activities or as soon as is practical afterwards.

3.3.4. Disruptive works

Construction work for the upgrade to Waitara Public School is underway. The following activities are planned for the upcoming weeks (*outline works*). You can contact us directly using the details below to discuss any aspect of this work.

3.3.5. Get involved

We are committed to working together with our school communities and other stakeholders to deliver the best possible learning facilities for students. Your feedback is important to us. For more information contact us via the details below.

- Email: schoolinfrastructure@det.nsw.edu.au
- Website: schoolinfrastructure.nsw.gov.au
- Phone: 1300 482 651

3.4. Handover phase

3.4.1. Traffic and access

Construction work on the upgrade to Waitara Public School has been completed. We are now in a position to confirm access provisions for the new school, including pick-up and drop-off arrangements.

3.5. Official school opening

A major upgrade of Waitara Public School was completed today. The project delivered 38 new permanent learning spaces, two special programs rooms, a new hall and canteen, new staff and administration facilities and increased library space.

Thank you for your patience during construction and we are thrilled to deliver this project to the school community.

4. Project Governance

4.1. Project Reference Group

The Department's engagement process strives to engage with key stakeholders from the school community. As part of this process, a Project Reference Group (PRG) is established early in the project with nominated representatives from the school community to ensure input from, and consultation with, impacted stakeholders.

The PRG provides key information from an operational, educational, change and logistics perspective into the planning, through the design and construction phases of the project.

The PRG will receive project briefings and key progress updates on project progress to support its responsibilities in assisting to communicate updates to school staff, parents and stakeholders in the wider local community.

The Project Reference Group will be conducted as two separate groups during the development and delivery of all projects:

(a) Project Reference Group – Planning

A nominated group (limited to 10) will participate in workshops to develop the Educational Principles and Education Rationale which will inform the Functional Design Brief. These workshops are chaired by the SINSW Senior Project Director (or delegate) and may be facilitated by an Education Consultant. This activity will inform the development of the building design.

(b) Project Reference Group – Delivery

The purpose of the group is to seek input and inform design processes and provide operational requirements and information to help minimise the impact of the project on school operations. These workshops are chaired by the Senior Project Director (or delegate) and may be facilitated by the appointed architectural consultant, as required. The PRG will provide key information from an operational and logistics perspective to assist project delivery.

Specifically to communications and engagement related matters, the PRG will also:

- Provide a forum for discussion and exchange of information relating to the planning and delivery of the project
- Identify local issues and concerns to assist the project team with the development of mitigation strategies – to manage and minimise construction and environmental impacts to the school community and local residents
- Provide feedback to the communications and community engagement team on key messages and communications and engagement strategies
- Provide advice on school engagement activities
- Assist to disseminate communications to the school community and other stakeholders.

As per all department led delivery projects, the PRG acts as a consultative forum and not a decision-making forum for the planning and delivery of this school infrastructure.

Figure 2: Project Reference Group (PRG)

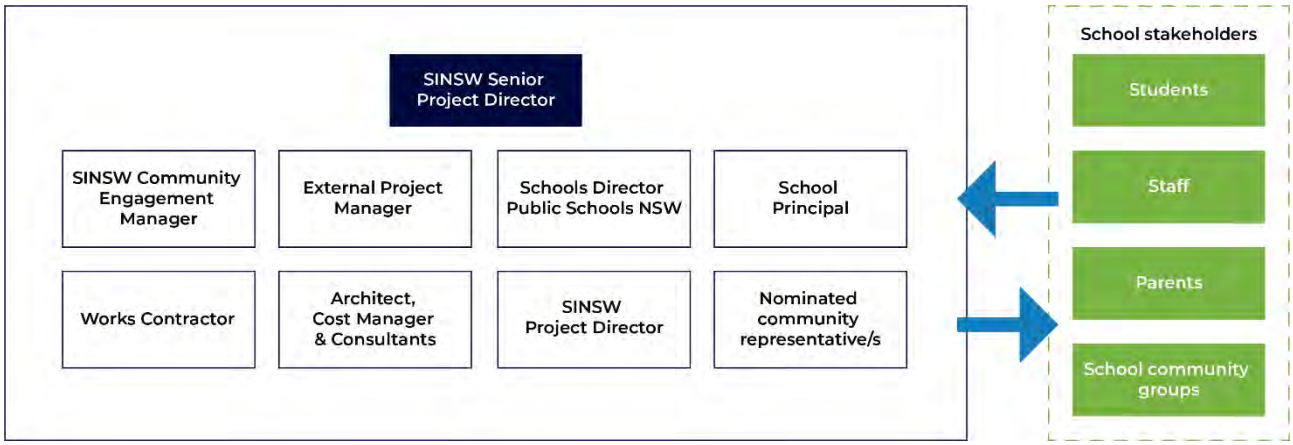
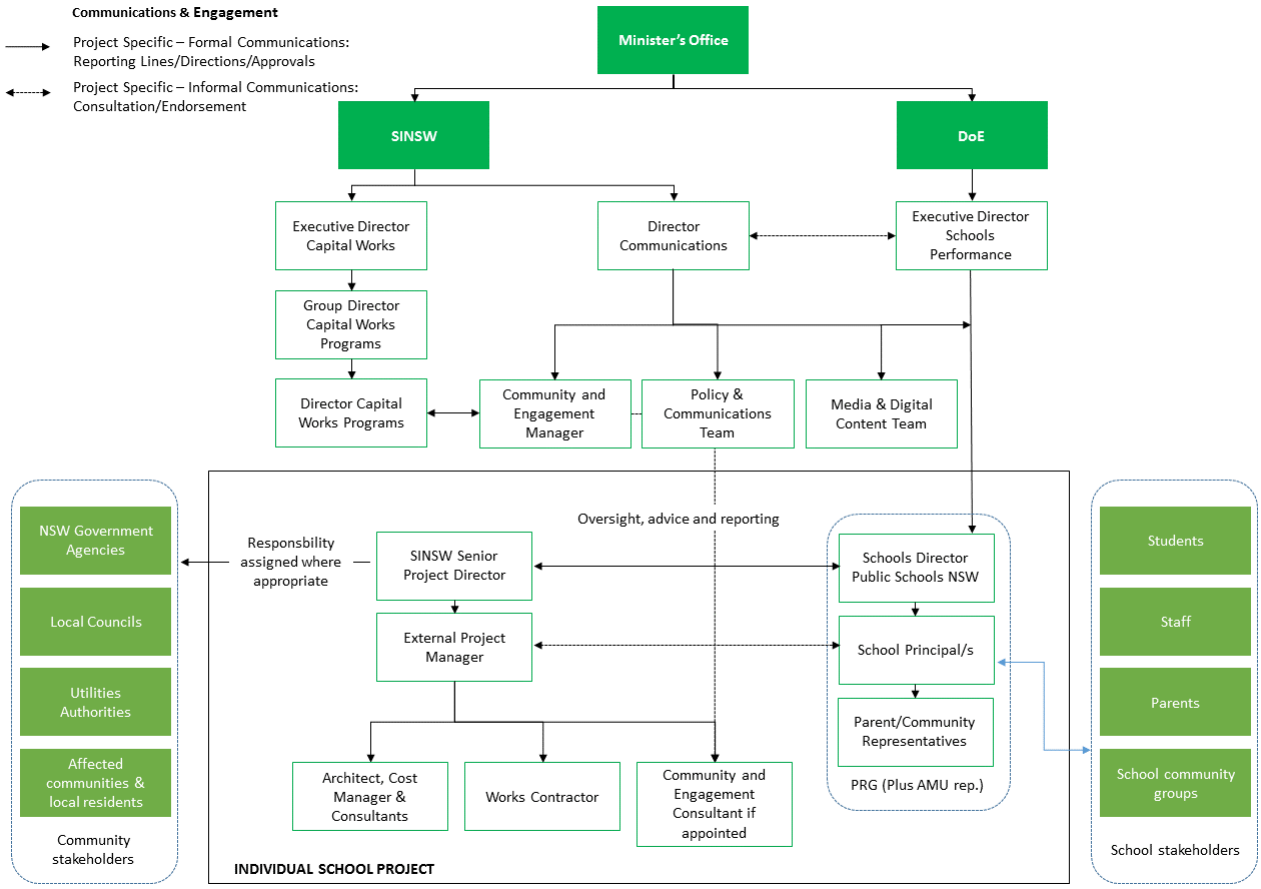


Figure 3 below maps how the department and SINSW will communicate both internally and externally.

Figure 3: SINSW Project Governance



5. Stakeholders

The stakeholder list below summarises who will be consulted during the design and construction phase via ongoing face to face meetings, communications collateral and digital engagement methods.

Table 2: Stakeholders

Stakeholders	Interest and involvement
Local Members of Parliament: ▪ Member for Ku-ring-gai (State) ▪ Member for Bradfield (Federal)	▪ Meeting the economic, social and environmental objectives of state and federal governments ▪ Delivering increased public education capacity on time ▪ Delivering infrastructure which meets expectations ▪ Addressing local issues such as traffic, congestion and public transport solutions
Government agencies and peak bodies: ▪ Transport for NSW ▪ Roads and Maritime Services NSW ▪ Fire and Rescue NSW ▪ NSW Department of Education ▪ NSW Department of Planning and Environment ▪ NSW Environmental Protection Authority ▪ NSW Rural Fire Service ▪ Sydney Water ▪ NSW Heritage Council ▪ NSW Office of Environment and Heritage ▪ NSW Department of Premier and Cabinet	▪ Traffic and congestion on the local road system ▪ Adequate public transport options and access ▪ Ensuring new infrastructure meets standard requirements for safety and fire evacuation ▪ Ensuring the development is compliant ▪ Ensuring the development does not impact heritage items ▪ Easing overcrowding in local schools
Hornsby Shire Council ▪ Councillors ▪ Bureaucrats ▪ Mayor ▪ General Manager	▪ Schedule for construction and opening of school ▪ Plans for enrolled students during the operation of the temporary school ▪ Impacts to the local community including noise, congestion and traffic ▪ Shared use of community spaces ▪ Providing amenities to meet increase population density
School community ▪ Principal ▪ Teachers ▪ Staff ▪ Parents and carers ▪ Students	▪ Safe pedestrian and traffic access to the temporary school during construction ▪ Construction impacts and how these will be minimised ▪ Quality of infrastructure and resources upon project completion ▪ How to access the new school once completed

Stakeholders	Interest and involvement
Local community	▪ Noise and truck movements during construction ▪ Increased traffic and congestion on nearby streets ▪ Local traffic and pedestrian safety ▪ Changed traffic conditions during pick-up and drop-off ▪ Shared use of school facilities and amenities
Nearby public schools ▪ Lindfield East Public School ▪ Killara Public School ▪ Killara High School	▪ Impact on school resources ▪ Impact on current students ▪ Implications for teaching staff ▪ Possible impacts on enrolments
Adjoining affected landowners and businesses ▪ Interflora ▪ Antique Rose Florist ▪ Balmoral Pizzeria ▪ Ta Wan Thai ▪ Jim's Cellars ▪ Waitara Friendly Grocer ▪ Thairiffic ▪ Waitara Kitchen Chinese Cuisine ▪ Paradise Fruit Land, Waitara ▪ Balmara Preschool ▪ Hornsby & District Chamber of Commerce	▪ Noise and truck movements during construction ▪ Increased traffic and congestion on nearby streets ▪ Local traffic and pedestrian safety ▪ Changed traffic conditions during pick-up and drop-off ▪ Shared use of school facilities and amenities ▪ Environmental impacts during construction

6. Engagement Approach

The key consideration in delivering successful outcomes for this project is to make it as easy as possible for anyone with an interest to find out what is going on. In practice, the communications approach across all levels of engagement will involve:

- Using uncomplicated language
- Taking an energetic approach to engagement
- Encouraging and educating whenever necessary
- Engaging broadly including with individuals and groups that fall into harder to reach categories
- Providing a range of opportunities and methods for engagement
- Being transparent
- Explaining the objectives and outcomes of planning and engagement processes.

In addition to engagement with Government Departments and Agencies and Council, two distinct streams of engagement will continue for the project as follows:

- School community for existing schools being upgraded, or surrounding schools for new schools, and
- Broader local community.

This allows:

- School-centric involvement from school communities (including students, parents/caregivers, teachers, admin staff) unencumbered by broader community issues, and
- Broad community involvement unencumbered by school community wants and needs. Broad community stakeholders include local residents, neighbours and local action groups.

6.1. General community input

Members of the general public impacted by the construction phase are able to enquire and complain about environmental impacts via the following channels:

- Information booths and information sessions held at the school or local community meeting place, and advertised at least 7 days before in local newspapers, on our website and via letterbox drops
- 1300 number that is published on all communications material, including project site signage
- School Infrastructure NSW email address that is published on all communications material, including project site signage

Refer to Section 8.5 of this document for detail on our enquiries and complaints process.

A number of tools and techniques will be used to keep stakeholders and the local community involved as summarised in table 3 below.

For reference, project high level milestones during the delivery phase include:

- Site establishment/early works
- Commencement of main works construction
- Term prior to project completion
- Project completion
- First day of school following project completion
- Official opening

Table 3: School Infrastructure NSW Communications Tools

Communications Tool	Description of Activity	Frequency
1300 community information line	The free call 1300 482 651 number is published on all communication materials and is manned by SINSW. All enquiries that are received are referred to the appointed C&E Manager and/or Senior Project Director as required and logged in our CRM. Once resolved, a summary of the conversation is updated in the CRM.	Throughout the life of the project and accessible for 12 months post completion
Advertising (print)	Advertising in local newspapers is undertaken with at least 7 days' notice of significant construction activities, major disruptions and opportunities to meet the project team or find out more at a face to face event.	At project milestones or periods of disruption
Call centre scripts	High level, project overview information provided to external organisations who may receive telephone calls enquiring about the project, most namely stakeholder councils.	Throughout the project when specific events occur or issues are raised by stakeholders
Community contact cards	These are business card size with all the SINSW contact information. The project team/ contractors are instructed to hand out contact cards to stakeholders and community members enquiring about the project. Cards are offered to school administration offices as appropriate. Directs all enquiries, comments and complaints through to our 1300 number and School Infrastruture NSW email address.	Throughout the life of the project and available 12 months post completion
CRM database	All projects are created in SINSW's Customer Relationship Management system – Darzin - at project inception. Interactions, decisions and feedback from stakeholders are captured, and monthly reports generated. Any enquiries and complaints are to be raised in the CRM and immediately notified to the Senior Project Director, Project Director and Community Engagement Manager.	Throughout the life of the project and updated for 12 months post completion
Display boards	A0 size full colour information boards to use at info sessions or to be permanently displayed in appropriate places (school admin office for example).	As required
Door knocks	Provide timely notification to nearby residents of upcoming construction works, changes to pedestrian movements, temporary bus stops, expected impacts and proposed mitigation. Provide written information of construction activity and contact details.	As required prior to periods of construction impacts
Face-to-face meetings/briefings	Activities include meeting, briefings and "walking the site" to engage directly with key stakeholders, directly impacted residents and business owners and the wider community.	As required

Communications Tool	Description of Activity	Frequency
FAQs	Set of internally approved answers provided in response to frequently asked questions. Used as part of relevant stakeholder and community communication tools. These are updated as required, and included on the website if appropriate.	Throughout the life of the project
Information booths	Information booths are held locally and staffed by a project team member to answer any questions, concerns or complaints on the project. Info booths are scheduled from the early stages of project delivery through to project completion. Information booths are to be held both at the school/ neighbouring school, as well for the broad community: ▪ School information booths are held at school locations at times that suit parents and caregivers, with frequency to be aligned with project milestones and as required. ▪ Community information booths are usually held at local shopping centres, community centres and places that are easily accessed by the community. They are held at convenient times, such as out of work hours on weekdays and Saturday's. Collateral to be provided include community contact cards, latest project notification or update, with internal FAQs prepared. All liaison to be summarised and loaded in the CRM. Notice of at least 7 days to be provided.	At project milestones and as required
Information sessions (drop in)	Information sessions are a bigger event than an info booth, held at a key milestone or contentious period. We have more information on the project available on display boards/ screens and an information pack handout – including project scope, planning approvals, any impacts on the school community or residents, project timeline, FAQs. Members from the project and communications team will be available to answer questions about the project. These events occur after school hours on a week day (from 3pm – 7pm to cover working parents). All liaison summarised and loaded on the CRM.	As required
Information pack	A 4 page A4 colour, fold out flyer that can include: ▪ Project scope ▪ Project update ▪ FAQs ▪ Contact information ▪ Project timeline To be distributed at info sessions or at other bigger events/ milestones in hard copy and also made available electronically.	As required

Communications Tool	Description of Activity	Frequency
Media releases/events	Media releases are distributed upon media milestones. They promote major project milestones and activities and generate broader community awareness.	Media milestones: ▪ Project announcement ▪ Concept design completed ▪ Planning approval lodged ▪ Planning approval granted ▪ Construction contract tendered ▪ Construction contract awarded ▪ SOD turning opportunity ▪ Handover ▪ Official opening
Newsletters	Available in hard copy and electronic format. A monthly or quarterly newsletter providing updated information on project scope, benefits, construction progress, achievement of project milestones and other project related issues of interest. Similar to an info pack in content, but used as a regular high level update for the community.	As required, related to high level project milestones
Notifications	A4, single or double sided, printed in colour that can include FAQs if required Notifications are distributed under varying templates with different headings to suit different purposes: ▪ **Works notification** are used to communicate specific information/ impacts about a project to a more targeted section of the community. This template doesn't have an image so it can be more appropriately targeted for matters like hazardous material. ▪ **Project update** is used when communicating milestones and higher level information to the wider community i.e. project announcement, concept design/DA lodgement, construction award, completion. Always includes the project summary, information booths/ sessions if scheduled, progress summary and contact info.	As required according to the construction program. Distibuted via letterbox drop to local residents and via the school community at least 5-7 days prior to construction activities or other milestones throughout the life of the project. Specific timings indicated in table 5 – Section 8.
Photography, time-lapse photography and videography	Captures progress of construction works and chronicles particular construction activities. Images to be used in notifications, newsletters and report, on the website and Social Media channels, at information sessions and in presentations. Once the project is complete, SINSW will organise photography of external and internal spaces to be used for a range of communications purposes.	Project completion (actual photography and video of completed project) Prior to project completion - artist impressions, flythrough, site plans and

Communications Tool	Description of Activity	Frequency
		contruction progress images are used
Presentations	Details project information for presentations to stakeholder and community groups.	As required
Priority correspondence	Ministerial (and other) correspondence that is subject to strict response timeframes. Includes correspondence to the Premier, Minister, SINSW and other key stakeholders. SINSW is responsible for drafting responses as requested within the required timeframes.	As required
Project Reference Group	SINSW facilitated Project Reference Group sessions providing information on the design solution, construction activities, project timeframes, key issues and communication and engagement strategies.	Meets every month or as required More information on the PRG is detailed in Section 4
Project signage	A0 sized, durable aluminium signage has been installed at Waitara Public School. Provides high level information including project scope, project image and SINSW contact information. Fixed to external fencing/ entrances etc. that are visible and is updated if any damage occurs.	Throughout the life of the project and installed for 12 months post completion
Site visits	Demonstrate project works and progress and facilitate a maintained level of interest in the project. Includes media visits to promote the reporting of construction progress.	As required
School Infrastructure NSW email address	Provide stakeholders and the community an email address linking direct to the Community Engagement team. Email address (schoolinfrastructure@det.nsw.edu.au) is published on all communications materials.	Throughout the life of the project
School Infrastructure NSW website	A dedicated project page for Waitara Public School is located on the SINSW website - https://www.schoolinfrastructure.nsw.gov.au/projects/w/waitara-public-school.html	Updated at least monthly and is live for at least 12 months post completion of the project
Welcome pack/ thank you pack	At project completion the following flyers are utilised: ▪ **Welcome pack** – project completion for school community - A 2 to 4 page A4 flyer which is provided to the school community on the first day/week they are returning to school when new facilities are opening, or attending a new school. Includes project overview, map outlining access to the school and key locations, FAQs, contact information. ▪ **Thank you pack** – A 2 to 4 page A4 flyer tailored to the local residents to thank them for their patience and support of the project.	Project completion only

7. Engagement Delivery Timeline

The following engagement delivery timeline maps tailored communications tools and activities by key milestone.

Table 4: Engagement timeline

Project Phase / milestone	Target Audiences	Proposed communication tools / activities / purpose as per Table 3	Timing / implementation
Main Construction works, including but not limited to: ▪ Works commenced ▪ Asbestos removal ▪ Remediation (if required) ▪ Key impact periods – noise, dust, traffic	School community Local residents Local Council	Notifications – for school community and residents Door knocks to directly impacted residents Info booths/ sessions Website updates Newsletters Face to face meetings Advertising of events and high disruption	May 2019 to July 2020 (at key construction events as required, as per our notification process in Table 5)
Term prior to completion of Stage 1	School community Local residents	Info session Display boards Info pack Notifications as required Website updates	Term 1, 2020
Completion of Stage 1	School community	Project update	Indicative May 2020
Stage 2 construction commencement	School community Local residents	Notifications – for school community and residents Door knocks to directly impacted residents Info booths/ sessions Website updates Newsletters Face to face meetings Advertising of events and high disruption	Indicative May 2020
Term prior to completion of Stage 2/ project completion	School community Local residents	Info session Display boards Info pack Notifications as required	Term 2, 2020

Project Phase / milestone	Target Audiences	Proposed communication tools / activities / purpose as per Table 3	Timing / implementation
		Website updates	
Project completion and welcome to new school	School community Local residents	Welcome pack Wayfinding Signage Website update Thank you pack (residents) Photography and videography	Term 3, 2020
Opening	All	Media release Official opening ceremony	Late 2020
Post-opening	All	Website remains live Project signage remains installed 1300 phone and email still active, and CRM still maintained for complaints and enquiries.	Late 2021 (at least 12 months post construction completion)

8. Protocols

8.1. Media engagement

SINSW manages all media relations activities, and is responsible for:

- Responding to all media enquiries and instigating all proactive media contact.
- Media interviews and delegation to SINSW media spokespeople who are authorised to speak to the media on behalf of the project
- Informing the Minister's Office and SINSW project team members and communications representatives of all media relations activities in advance and providing the opportunity to participate in events where possible.

8.2. Site visits

SINSW in partnership with Schools Operations and Performance organises and hosts guided project site tours and media briefings as required by the Minister's Office. The Project Team will ensure the required visitor site inductions are undertaken and that all required Personal Protective Equipment (PPE) is worn.

For media site visits and events, SINSW creates, or contributes to, the production of an event pack. This will include an event brief, media release, speaking notes and Q&As.

8.3. Social, online and digital media

SINSW initiates and maintains all social and online media channels. These channels can include Facebook, Twitter, LinkedIn and the website. The SINSW Online Content Team upload to the SINSW website.

8.4. Notification process

Notifications (titled works notifications or project updates as per Table 3) are SINSW's prescribed notification requirement and are the primary mechanism to inform the community and key stakeholders about the impact of school construction on the local area. Notifications provide advance warning of activities and planned disruptions, as per the notice periods in Table 5 below, allowing stakeholders and community members to plan for the impacts and make alternative arrangements where required. Notifications are distributed in person via door knocks, via letterbox drop, via the school and electronically via email.

The C&E Manager advises the project team of the relevant notification requirements and timeframes to be met. The team obtains the information necessary to meet these timeframes by:

- Having oversight of the project delivery program
- Visiting site as required
- Attending and participating in construction meetings, planning meetings, and Risk and Opportunity workshops.

Table 5: Notifications periods

Works activity	Minimum community notification period
Notification to communities following major incident	Same day
Emergency works/unforeseen events	Same day
Contamination management and notification	Within 48 hours
Upcoming works notification (minimum disruption)	5- 7 days
Invitation/notification of community event (e.g. info booth)	5 – 7 days
Notifications regarding traffic changes, parking impacts, road closures, major detours	10 – 14 days
Pedestrian route changes and other impacts	10 – 14 days

Works activity	Minimum community notification period
Notifications regarding operational changes for the school community (school drop-off points, entry and exit points)	10 - 14 days
Major construction impacts (out of hours/ significant noise/ demolition)	10 – 14 days
Major impacts to school community e.g. relocation to temporary school	6 months

8.5. Enquiries and complaints management

SINSW manages enquiries (*called interactions in our CRM, Darzin*), and complaints in a timely and responsive manner.

Prior to project delivery, a complaint could be related to lack of community consultation, design of the project, lack of project progress, etc.

During project delivery, a complaint is defined as in regards to construction impacts – *such as* – safety, dust, noise, traffic, congestion, loss of parking, contamination, loss of amenity, hours of work, property damage, property access, service disruption, conduct or behaviour of construction workers, other environmental impacts, unplanned or uncommunicated disruption to the school.

If a phone call, email or face- to- face complaint is received during construction, they must be logged in our CRM, actively managed, closed out and resolved by SINSW within 24-48 hours.

As per our planning approval conditions, a complaints register is updated monthly and is publicly available on the project's website page on the SINSW website.

If the complainant is not satisfied with SINSW response, and they approach SINSW for rectification, the process will involve a secondary review of their complaint as per the outlined process.

Complaints will be escalated when:

- An activity generates three complaints within a 24-hour period (separate complainants).
- Any construction site receives three different complaints within a 24-hour period.
- A single complainant reports three or more complaints within a three day period.
- A complainant threatens to escalate their issue to the media or government representative.
- The complaint was avoidable
- The complaint relates to a compliance matter.

Complaints will be first escalated to the Senior Manager, Community and Engagement or Director of Communications for SINSW as the designated complaints handling management representatives for our projects. Further escalation will be made to the Executive Director, Office of the Chief Executive to mediate if required.

If a complaint still cannot be resolved by SINSW to the satisfaction of the complainant, we will advise them to contact the NSW Ombudsman - https://www.ombo.nsw.gov.au/complaints.

The below table summarises timeframes for responding to enquiries and complaints, through each correspondence method:

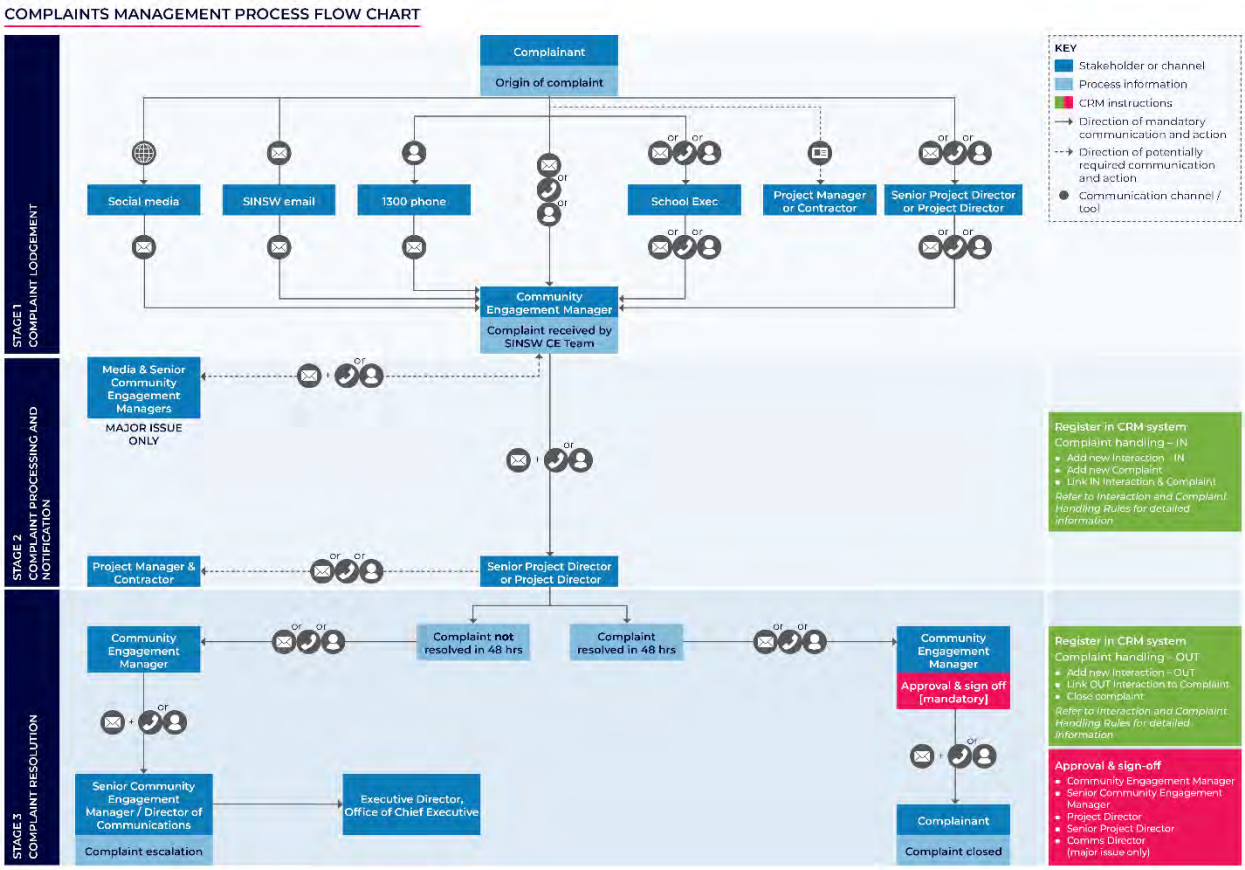
Table 6: Complaint and enquiry response time

Complaint	Acknowledgement times	Response times
Phone call during business hours	At time of call – and agree with caller estimated timeframe for resolution.	Complaint to be closed out within 48 hours. If not possible, continue contact, escalate as required and resolve within 7 business days.
Phone call after hours*	Within two (2) hours of receiving message upon returning to office.	Following acknowledgement, complaint to be closed out within 48 hours. If not possible, continue contact,

Complaint	Acknowledgement times	Response times
		escalate as required and resolve within 7 business days.
Email during business hours	At time of email (automatic response)	Complaint to be closed out within 48 hours. If not possible, continue contact, escalate internally as required and resolve within 7 business days.
Email outside of business hours	At time of email (automatic response)	Complaint to be closed out within 48 hours (once return to business hours). If not possible, continue contact, escalate internally as required and resolve within 7 business days.
Interaction/ Enquiry		
Phone call during business hours	At time of call – and agree with caller estimated timeframe for response.	Interaction to be logged and closed out within 7 business days.
Phone call after hours	Within two (2) hours of receiving message upon returning to office.	Interaction to be logged and closed out within 7 business days.
Email during business hours	At time of email (automatic response)	Interaction to be logged and closed out within 7 business days.
Email outside of business hours	At time of email (automatic response)	Interaction to be logged and closed out within 7 business days.
Letter	N/A	Interaction to be logged and closed out within 10 business days following receipt.

The below diagram outlines our internal process for managing complaints.

Figure 3 - Internal Complaints Process



8.5.1. Disputes involving compensation and rectification

School Infrastructure NSW is committed to working with the school and broader community to address concerns as they arise. Where disputes arise that involve compensation or rectification, the process for resolving community enquiries and complaints will be followed to investigate the dispute. Depending upon the results of the investigation, School Infrastructure NSW may seek legal advice before proceeding.

8.6. Incident management

An incident is an occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance. Material harm is harm that:

(a) involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial; *or*

(b) results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment).

8.6.1. Roles and responsibilities following an incident

In the event of an incident, once emergency services are contacted, the incident must be immediately reported to the SINSW Senior Project Director who will inform:

- SINSW Executive Director
- SINSW C&E Manager
- SINSW Senior Manager, C&E
- SINSW Communications Director

SINSW Communications Director will:

- Lead and manage all communications with the Minister's office in the event of an incident, with assistance as required

- Direct all communications with media to the SINSW Media Manager in the first instance for management
- Notify all other key project stakeholders of an incident.

The school and local community will be notified within 24 hours in the event of an incident, as per our notification timelines in Table 5.

The SINSW Senior Project Director will issue a written incident notification to Department of Planning & Environment (DPE) (compliance@planning.nsw.gov.au) and Local Council immediately following the incident to set out the location and nature of the incident.

This must be followed within seven days following the incident of a written notification to the Department of Planning and Environment (compliance@planning.nsw.gov.au) that:

(a) identifies the development and application number;

(b) provides details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident);

(c) identifies how the incident was detected;

(d) identifies when SINSW became aware of the incident;

(e) identify any actual or potential non-compliance with conditions of consent;

(f) describes what immediate steps were taken in relation to the incident;

(g) identifies further action(s) that will be taken in relation to the incident; and

(h) provides the contact information for further communication regarding the incident (the Senior Project Director).

Within 30 days of the date on which the incident occurred or as otherwise agreed to by the Planning Secretary, SINSW will provide the Planning Secretary and any relevant public authorities (as determined by the Planning Secretary) with a detailed report on the incident addressing all requirements below:

(a) a summary of the incident;

(b) outcomes of an incident investigation, including identification of the cause of the incident;

(c) details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence; and

(d) details of any communication with other stakeholders regarding the incident.

8.7. Reporting process

Throughout the project, data will be recorded on participation levels both face to face and online, a record of engagement tools and activities carried out in addition to queries received and feedback against emerging themes.

Stakeholder and community sentiment will be evaluated throughout to ensure effectiveness of the engagement strategy and to inform future activities.

Reporting will include but not be limited to:

- Stakeholder engagement reporting – numbers of forums, participation levels and a summary of the outcomes Community sentiment reporting – outputs of all community engagement activities, including numbers in attendance at events, participation levels and feedback received against broad themes
- Online activity – through the project website and via social media
- Media monitoring – as part of the proactive media campaign
- Engagement risk register - to be updated regularly.