SYDNEY GATEWAY

A Joint Venture Project

JOHN HOLLAND SEYMOUR WHYTE

Site Establishment Management Plan

Sydney Gateway Road Project

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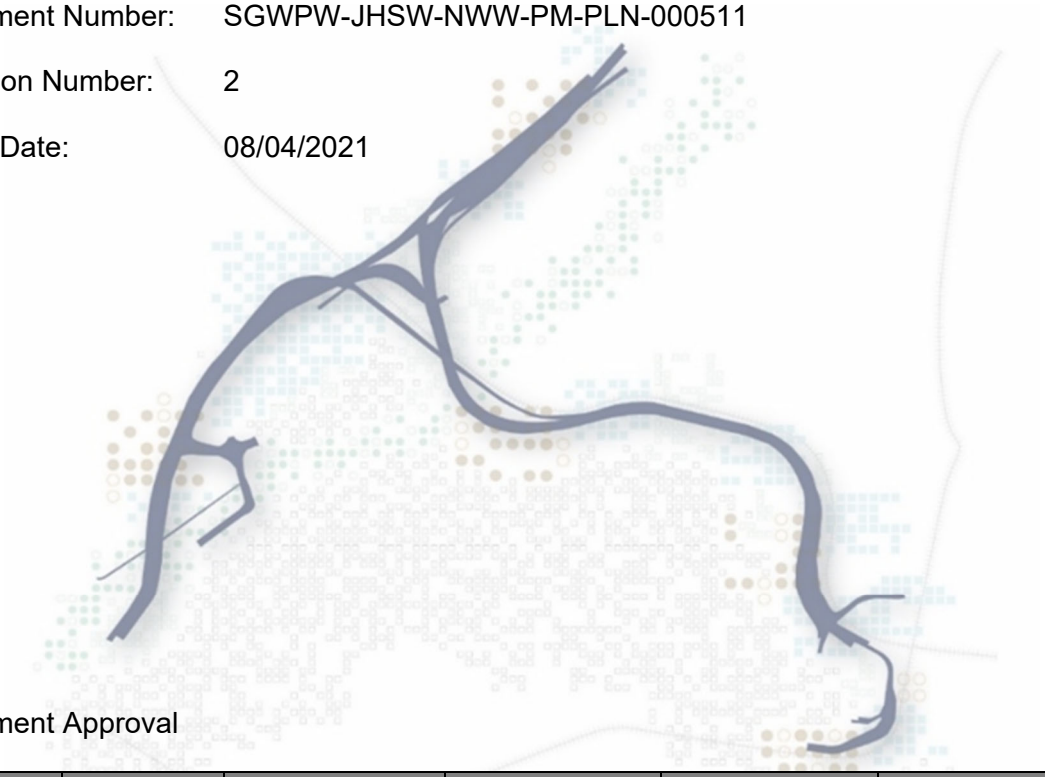

Document Approval

Revision	Date	Prepared by	Reviewed by	Approved by	Remarks
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Definitions and Abbreviations

Term/Abbreviation	Definition
BC Act	*Biodiversity Conservation Act 2016*
CEMP	Construction Environmental Management Plan
CNVIS	Construction noise and vibration impact statement
CoA	Conditions of Approval issued by the NSW Minister for Planning and Public Spaces
CSSI	Critical State Significant Infrastructure
CPAS	Construction Parking and Access Strategy
TTMP	Traffic and Transport Management Plan
DPIE	NSW Department of Planning, Infrastructure and Environment
EEC	Endangered Ecological Community
EIS/MDP	Sydney Gateway Road Project Environmental Impact Statement / Draft Major Development Plan
EPA	NSW Environment Protection Authority
EMS	Environmental Management System
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW)
EPL	Environment Protection Licence
ESCP	Erosion and Sediment Control Plan
EWMS	Environmental work method statement
Hold point	A verification point that prevents work from commencing prior to approval from TfNSW
ICNG	Interim Construction Noise Guideline
JHSWJV	John Holland Seymour Whyte Joint Venture
Material harm	This 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).
NVMP	Noise and Vibration Management Plan
PESCP	Progressive Erosion and Sediment Control Plan
PIRMP	Pollution Incident Response Management Plan
POEO Act	*Protection of the Environment Operations Act 1997* (NSW)
Proponent	Transport for New South Wales
Project	Sydney Gateway Road Project
RAP	Remediation Action Plan
SAP	Sensitive Area Plan

Term/Abbreviation	Definition
SEMP	Site Establishment Management Plan (this document)
SWMP	Soil and Water Management Plan
TCP	Traffic Control Plan
TfNSW	Transport for NSW
UMM	Updated Mitigation Measures

1.0 Introduction

1.1 Context

This Site Establishment Management Plan (SEMP) relates to the Sydney Gateway Road Project (the Project) and has been prepared in accordance with Minister's Condition of Approval (CoA) A15.

The SEMP has been prepared to address the requirements of:

- TfNSW QA Specification G36, G38 and G40,
- The Conditions of Approval granted to the Project on 27 August 2020,
- Environmental Impact Statement / Major Development Plan of the Sydney Gateway Road Project (2019) (the Project EIS/MDP)
- The Sydney Gatway Project Response to Submissions Report
- Updated mitigation measures (UMM), and
- All other applicable guidelines and legislation.

2.0 Background and project description

2.1 Project background

The Project EIS/MDP assessed the impacts of construction and operation of the Project. The EIS/MDP included a description of the construction ancillary facilities, within Chapter 8.4, and assessed the potential impacts in Chapters 8 – 26.

A total of five major ancillary facilities were identified and described in the EIS/MDP as being required to deliver the Project. The EIS/MDP also noted that smaller satellite facilities and other facilities may be identified for the Project. Combined, these sites are essential to deliver the Project and include activities such as earthworks, laydown and workforce amenities.

2.2 Project description

The Project is located about eight kilometres south of the Sydney central business district, in the suburbs of Tempe, St Peters and Mascot. It sits within the boundaries of the Inner West, City of Sydney and Bayside local government areas.

The objectives of the Project are to connect Sydney Airport Terminal 1 (the International Terminal) and Terminals 2/3 (the Domestic Terminals) with each other and with the Sydney motorway network via St Peters interchange. The Project aims to facilitate the movement of traffic towards Port Botany via General Holmes Drive, and will provide three main routes for traffic:

- Between the Sydney motorway network and Terminal 1, and towards the M5 motorway and the Princes Highway.
- Between the Sydney motorway network and Terminals 2/3, and towards General Holmes Drive, Port Botany and Southern Cross Drive.
- Between Terminal 1 and Terminals 2/3.

The Project also aims to provide improved access to Sydney Airport land located on both sides of Alexandra Canal and across the Botany Rail Line.

- The key features of the Project are illustrated in Figure 2, which include:
- Road links to provide access between the Sydney motorway network and Sydney Airport's terminals, consisting of the following components:
- St Peters interchange connection – a new elevated section of road extending from St Peters interchange to the Botany Rail Line, including an overpass over Canal Road.

- Terminal 1 connection – a new section of road connecting Terminal 1 with the St Peters interchange connection, including a bridge over Alexandra Canal and an overpass over the Botany Rail Line.
- Qantas Drive upgrade and extension – widening and upgrading Qantas Drive to connect Terminals 2/3 with the St Peters interchange connection, including a high-level bridge over Alexandra Canal.
- Terminal links – two new sections of road connecting Terminal 1 and Terminals 2/3, including a bridge over Alexandra Canal.
- Terminals 2/3 access – a new elevated viaduct and overpass connecting Terminals 2/3 with the upgraded Qantas Drive.
- Road links to provide access to Sydney Airport land:
  - A new section of road and an overpass connecting Sydney Airport's northern lands on either side of the Botany Rail line (the northern lands access).
  - A new section of road, including a signalised intersection with the Terminal 1 connection and a bridge, connecting Sydney Airport's existing and proposed freight facilities on either side of Alexandra Canal (the freight terminal access).
- An active transport link, about 1.5 kilometres long and located along the western side of Alexandra Canal, to maintain connections between Sydney Airport, Mascot and the Sydney central business district.
- Intersection upgrades and/or modifications.
- Construction of operational ancillary infrastructure including maintenance bays, new and upgraded drainage infrastructure, signage and lighting, retaining walls, noise barriers, flood mitigation basin, emplacement mounds, utility works and landscaping.

Figure 1: Overview of the Project

2.3 Scope

The scope of this SEMP is to describe the environmental management practices and procedures which will be implemented for the establishment of the construction ancillary facilities.

A total of five ancillary facilities (C1-C5) were identified and described in the EIS/MDP as being required to deliver the Project. These sites are essential to deliver the Project and include activities such as earthworks support, laydown and workforce amenities.

This SEMP considers the establishment of the ancillary facility C3, as described in Section 5.1 of this Plan, which is to be constructed on State land. Where ancillary facilities are established and operated on Commonwealth land, this requirement does not apply as Commonwealth processes will be in force.

Figure 2: Ancillary facilities identified in the EIS/MDP

3.0 Purpose and Objectives

3.1 Purpose

The purpose of this Plan is to outline the environmental management practices and procedures to be followed during establishment of major ancillary facilities. This plan must be approved by the Secretary of the Department of Planning, Infrastructure and Environment (DPIE) prior to commencing establishment activities. Details of site establishment activities and potential environmental impacts are summarised in Section 5. Management of these potential environmental impacts are summarised in Annexure B and will be undertaken in accordance with this SEMP.

Definitions relevant to the SEMP included in the SSI 9737 Instrument of Approval are provided in Table 1 below.

Table 1: Definitions under SSI 9737

Term	Definition
Construction ancillary facility	A temporary facility for construction of the CSSI including an office and amenities compound, construction compound, material crushing and screening plant, materials storage compound, maintenance workshop, testing laboratory, but excluding concrete batching. *Note: Where a CEMP has been approved by the Planning Secretary and it includes a stockpile management protocol, a temporary material stockpile located within the construction boundary is not an ancillary facility.*
Site Establishment Works	Low impact work undertaken to establish a construction ancillary facility. However, site establishment work does not include piling (except for piling required for the erection of noise barriers around construction ancillary facilities).

3.2 Services/ Utilities

Site establishment works will require essential services including power, water, communication and sewer to each of the site ancillary facilities. JHSWJV will connect to existing services at the nearest suitable location in consultation with the service providers. In the event existing services cannot be utilised, or require to be supplemented, pump out sewer systems and/or generators would be used.

Protection, adjustment or removal of existing utility assets to enable site establishment activities will be undertaken during site establishment. Utilities required to be installed prior to CEMP approval would meet the definition of ‘low impact’ works as defined within the CoA.

3.3 Environmental performance outcomes and program for monitoring

The following performance outcomes in Table 2 have been established for the activity to meet CoA A15(d)(i) of the approval. These are derived from those listed in Chapter 27.4 of the EIS/MDP.

Table 2: Environmental objectives and targets

No.	Performance outcome (as identified in Chapter 27.4 of the EIS/MDP)	How addressed
1	Transport and traffic • Impacts on traffic and transport are minimised. • Safe access to properties is maintained. • Access to Sydney Airport is maintained. • The project is integrated with existing and future local and regional transport infrastructure and planning strategies. • Motorist, pedestrian and cyclist safety is maintained or improved.	Implement the environmental safeguards MMTT1 – MMTT12 as applicable to the site establishment works
2	Noise and vibration - amenity • The project minimises impacts on the local community by controlling noise and vibration. • Feasible and reasonable mitigation measures are implemented to minimise the noise and vibration impacts on sensitive receivers.	Implement the environmental safeguards MMNV1 – MMNV12 as applicable to the site establishment works
3	Noise and vibration - structural • The Project minimise impacts on structures by controlling vibration through construction planning. • Feasible and reasonable mitigation measures are implemented to minimise the structural vibration impacts. • Vibration intensive construction work is managed to avoid or minimise adverse impacts on the structural integrity of buildings and heritage items.	
4	Place making and urban design • The project provides a sense of arrival and contributes positively to the surrounding urban environment. • Connectivity within the community is enhanced through pedestrian and cyclist access. • Vegetation is retained where feasible and reasonable. • Trees removed as part of the project are replaced in accordance with the tree management strategy	Implement the environmental safeguard MMB1-MMB3 as applicable to the site establishment works
5	Visual amenity • The project is designed to have regard to the surrounding landscape and visual environment and to minimise the potential for visual impacts • The Project is visually integrated with its surroundings, where possible.	Implement the environmental safeguards MMU1-MMU4 as applicable to the site establishment works

No.	Performance outcome (as identified in Chapter 27.4 of the EIS/MDP)	How addressed
6	Socio-economic, land use and property • The Project minimises impacts on the local community, community infrastructure, and businesses. • Impacts to existing land use and properties are minimised. • The Project is appropriately integrated with adjoining land uses and access to private properties is maintained. • The Project is appropriately integrated with local and regional land use planning strategies. • Construction of the Project has a positive impact on the local and greater Sydney economy.	Implement the environmental safeguards MMSE1 & MML3 as applicable to the site establishment works
70	Heritage • Aboriginal heritage objects with the potential to be impacted by the Project are salvaged and retained. • Key Aboriginal heritage values are incorporated into the final urban design and landscaping outcomes. • The design is sympathetic to the historic significance of Sydney Airport and the heritage significance of surrounding listed heritage items, and where practicable, avoids and minimises impacts on heritage. • Visual impacts on heritage items are mitigated through individually tailored landscape treatments. • Impacts on heritage are managed in accordance with relevant legislation, including the EP&A Act, the *Heritage Act 1977* (NSW), Airports (Environment Protection) Regulation 1997 and relevant guidelines.	Implement the environmental safeguards MMH1 & MMH2as applicable to the site establishment works
8	Biodiversity • The Project is designed to minimise impacts on biodiversity. Where practicable, the design minimises the need to clear vegetation. • Potential impacts on biodiversity are managed in accordance with relevant legislation, including the EP&A Act, BC Act, EPBC Act and the *Biosecurity Act 2015* (NSW).	Implement the environmental safeguard MMB1-MMB3 as applicable to the site establishment works
9	Flooding • Construction is undertaken in a manner that minimises the potential for adverse flooding impacts, through staging of works and implementation of mitigation measures. • Construction compounds and work sites are designed such that flows are not significantly impeded. • The Project maintains or reduces flood levels within and adjacent to the Project site.	Implement the environmental safeguard MMF1 as applicable to the site establishment works

No.	Performance outcome (as identified in Chapter 27.4 of the EIS/MDP)	How addressed
10	Water - hydrology • The Project avoids long term impacts on surface water and groundwater hydrology. • Opportunities to reuse water resources during construction are considered during the design process. • The use of water during construction is minimised.	Implement the environmental safeguards MMSW1-MMSW7 as applicable to the site establishment works
11	Water - quality • Impacts to water quality during construction and operation are minimised. • Erosion and sediment controls during construction are implemented in accordance with the Blue Book. • The Project protects or contributes to achieving the water quality objectives, during construction and operation by establishing discharge criteria that protect the environmental values of the receiving waters.	
12	Soils • Site-specific soil characteristics are taken into consideration during detailed design and construction. • Soils excavated from potential acid sulfate areas are subject to the provisions of an acid sulfate soil management plan. Once acid sulfate soils have been treated, depending on the results of testing, they are either reused on site or disposed of at an appropriate facility. • Existing contamination is managed in accordance with relevant regulatory requirements. • Any spoil for off-site disposal is assessed, classified, managed and disposed of in accordance with the *Waste Classification Guidelines* (NSW EPA, 2014a).	Implement the environmental safeguards MMSW1-MMSW7 & MMC1-MMC5 as applicable to the site establishment works
13	Air quality • Potential air quality/dust impacts from the construction of the Project are minimised and managed. • Odour impacts are minimised through the implementation of the former Tempe landfill odour management plan. • Dust and exhaust emissions of plant and equipment are controlled from construction activities. • Adverse impacts on existing air quality are minimised.	Implement the environmental safeguards MMAQ1-MMAQ20 as applicable to the site establishment works
14	Health and safety • Potential air quality/dust impacts, traffic impacts and noise and vibration impacts from construction of the Project are minimised and managed.	Implement the environmental safeguards MMHSH1-MMHSH2 as applicable to the site establishment works

No.	Performance outcome (as identified in Chapter 27.4 of the EIS/MDP)	How addressed
	• Utilities are managed in consultation with utility providers to minimise impacts on the community and Sydney Airport. • Traffic management during construction is implemented to minimise the risk to public safety. • The majority of potential impacts on amenity and community wellbeing, and access and connectivity during construction is temporary and short term. • Safe and efficient road user movements is achieved through the Project design and care is taken to minimise incidents and crashes during construction.	
15	Waste • The preferred waste management hierarchy of avoidance, minimisation, reuse, recycling and disposal is implemented. • Measures to minimise waste, manage waste and conserve resources throughout the construction of the Project are implemented. • Construction staff have an increased level of understanding and awareness of waste and resource use management issues. • Uncontaminated spoil is recycled or reused either on or off site. • Reuse of waste is managed in accordance with relevant NSW EPA requirements. • Waste is disposed of at appropriately licensed facilities.	Implement the environmental safeguards MMW1-MMW4 as applicable to the site establishment works

4.0 Environmental Requirements

4.1 Relevant legislation

Key NSW legislation relevant to the activity includes:

- Protection of the Environment Operations Act 1997 (POEO Act) and regulations.
- Environmental Planning and Assessment Act 1979 (EP&A Act).
- Contaminated Lands Management Act 1997 (CLM Act).
- Biodiversity Conservation Act 2016.
- Heritage Act 1977.
- Biosecurity Act 2015.
- Roads Act 1993.
- Water Act 1912, and
- Water Management Act 2000.
- Airports (Protection of Airspace) Regulations 1996

4.2 Conditions of approval

The approval pathway for Major Ancillary facilities identified in the EIS/MDP will commence following approval of this SEMP (as per CoA A15) and prior to approval of the CEMP. The SEMP will be submitted to DPIE for review and approval.

Condition A15 of SSI 9737 (NSW) requires the Proponent (TfNSW) to develop a Site Establishment Management Plan (SEMP) prior to the establishment of major ancillary facilities (as defined under Table 1) on NSW land.

Table 3 provides an overview of compliance with a comprehensive list of all conditions of relevance is included in Annexure A.

Table 3: Site Establishment Management Plan requirement as per Condition A15.

CoA	Requirement	How addressed	Reference
A15	Before establishment of a major construction ancillary facility (i.e. excluding minor construction ancillary facility(s) established under Condition A17), the Proponent must prepare a Site Establishment Management Plan which outlines the environmental management practices and procedures to be implemented for the establishment of the construction ancillary facility(s). The Site Establishment Management Plan must be prepared in consultation with the relevant councils and EESG, Heritage Council, DPIE Water, Sydney Water and Pipeline Operators as applicable. The Plan must be submitted to the Planning Secretary for approval one (1) month before the establishment of any major construction ancillary facility(s). The Plan must be endorsed by the ER before it is submitted to the Planning Secretary. The Site Establishment Management Plan must detail the management of the establishment of the major construction ancillary facility(s) and include:	This document describes how JHSWJV propose to meet this requirement during the establishment of major ancillary facilities. It will be submitted for approval, in accordance with this condition.	This Plan
A15(a)	a description of activities to be undertaken during establishment of the facility	Section 5 describes site establishment activities to be undertaken .	Section 5

CoA	Requirement	How addressed	Reference
	(including scheduling and duration of works to be undertaken at the site);		Table 6
A15(b)	figures illustrating the proposed site layout;	Annexure C provides the indicative site layout plans for the nominated major ancillary facilities.	Annexure C
A15(c)	a program for ongoing analysis of the key environmental risks arising from the site establishment activities described in subsection (a) of this condition, including an initial risk assessment undertaken prior to the commencement of site establishment works;	A risk assessment has been prepared for this specific activity. JHSWs Safety, Quality and Environment (SQE) Risk Assessment procedure will be implemented for ongoing analysis of key risks from these works. Monitoring is also discussed in Section 9	Section 6 Section 9
A15(d)	details of how the site establishment activities described in subsection (a) of this condition will be carried out to: (i) meet the performance outcomes stated in the documents listed in the documents listed in Condition A1, and (ii) manage the risks identified in the risk analysis undertaken in subsection (c) of this condition; and	The performance outcomes presented in Table 3 and are derived from, the environmental performance outcomes listed in Chapter 27.4 of the EIS/MDP. The Project has also established a program for monitoring to ensure the performance outcomes have been met. The risks outlined in Section 6 will be managed in accordance with measures outlined in Annexure B.	Table 3 Section 7
A15(e)	a program for monitoring the performance outcomes, including a program for construction noise monitoring consistent with the requirements of Condition C15.	Section 9 outlines the program for monitoring the performance outcomes.	Section 9
A15	Nothing in this condition prevents the Proponent from preparing individual Site Establishment Management Plans for each major construction ancillary facility.	Noted	Noted

Where ancillary facilities are established and operated on Commonwealth land, this requirement does not apply as Commonwealth processes will be in force.

As such, this document only considers the establishment of the ancillary facility C3 which is to be constructed on State land. Notwithstanding, where applicable state conditions apply (for example use of local roads as per CoA E52 at compound C2), they are assessed accordingly.

Operation will be undertaken in accordance with the Construction Environmental Management Plan (CEMP) and associated sub-plans to meet CoA A16.

4.3 Updated mitigation measures

The UMMs identified in the Sydney Gateway Road Project Response to Submissions Report for establishment of ancillary facilities are included in Annexure A. The Project-wide consolidated management measures are provided in Annexure B.

4.4 Additional approvals, licences, permits and requirements

An Environmental Protection License (EPL) will be obtained for the Project as it will trigger a scheduled activity listed in Schedule 1 (Clause 35: road construction) of the POEO Act. This licence will include premises boundaries that will incorporate ancillary facilities, including the site establishment works at the sites as required.

Other requirements for site establishment works may include the following:

- Road Occupancy Licences (ROLs) and associated Traffic Control Plans (TCPs)/ Vehicle Movement Plans (VMPs).
- Utilities agreements.
- Crane permits.
- Clearing permits.

4.5 Guidelines

The main guidelines, specifications for policy documents relevant to this plan include:

- Roads and Maritime Services (now TfNSW) QA Specifications G36 – Environmental Protection (Management System) (G36).
- Roads and Maritime Services Specification (now TfNSW) D&C G38 – Soil and Water Management (G38).
- Roads and Maritime Services Specification (now TfNSW) D&C G40 – Clearing and Grubbing (G40).
- Managing Urban Stormwater: Soils and Construction. Volume 2D: Main Road Construction, DECC (2008).
- Managing Urban Stormwater: Soils and Construction. Volume 1: 'Blue Book', Landcom (2004).
- Roads and Maritime Construction Noise and Vibration Guidelines (Roads and Maritime 2016).
- NSW Interim Construction Noise Guideline (ICNG), Department of Environment and Climate Change 2009.
- NSW Assessing Vibration – a Technical Guideline (AVTG), Department of Environment and Conservation 2006.
- British Standard BS 6472-2008, 'Evaluation of human exposure to vibration in buildings 1- 80Hz).
- British Standard 7385: Part 2-1993 'Evaluation and Measurement for Vibration in Buildings'.
- German DIN 4150-1999 Structural vibration Part 3: 1999 Effects of Vibration on Structures (DIN 1999).

5.0 Site Establishment Approach

5.1 Proposed major ancillary site

A combination of major and minor ancillary facilities will be used to support the Project. The proposed major ancillary facility C3 depicted in the EIS/MDP would be utilised to support the Project.

Table 4: Major Ancillary Facility – State Land

Site	Location	Description / function
C3	Former Tempe Tip site Swamp Road, Tempe **State Land**	Ancillary facility for staff and workforce west of the ARTC corridor function: • Manage the Tempe Tip site and remediation • Construct the Project through the Tempe Tip site including new Link Road and emplacement mound(s) • Construct the new Active Transport Link • Construct Terminal Bridge Connection Bridge and the Freight Terminal Bridge • Carry out Airport Drive modifications and tie-ins in front of the Sydney Airport Joint User Hydrant Installation facility (this facility is located on Commonwealth land) • Relocate the temporary dog park. • Upgrade the Leachate Treatment Plant

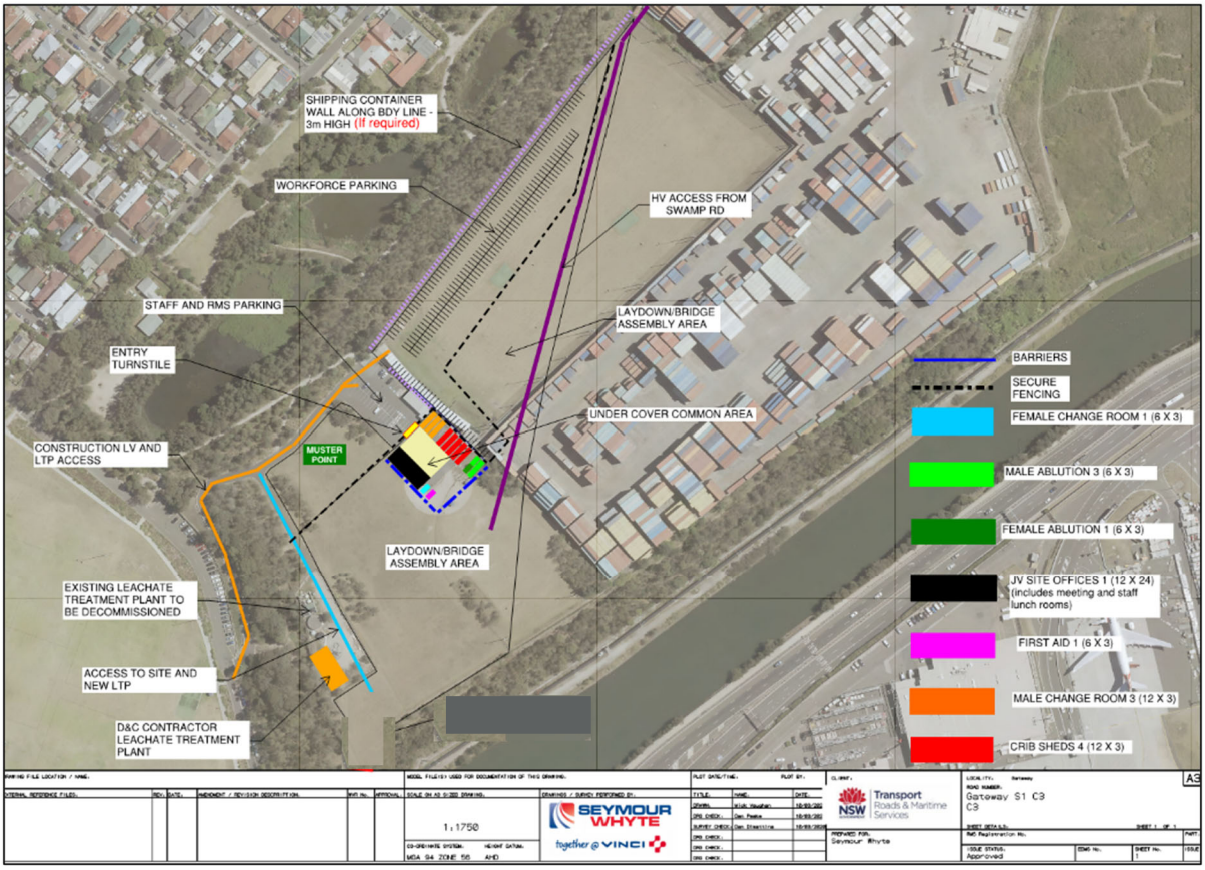


Figure 3: C3 ancillary facility

5.2 Site Establishment activities

Proposed activities which would be undertaken as part of this plan are detailed in Table 5.

Table 5: Site establishment activities

Activity	Description	Indicative Plant

Site preparation works including early works site ancillary facilities	• Provision of site security including:
	  ○ temporary fencing panels and perimeter fencing.
	  ○ Project specific boundary screening installation (where applicable.
	• Provision of minimum WHS requirements to enable long-term ancillary facility installation and other early works, including:
	  ○ Toilet facilities.
	  ○ Offices.
	  ○ Lunchrooms.
	  ○ First aid facilities.
	• Signage and pedestrian diversions.
	  ○ Installation of traffic barriers for delineation
		• Tool truck
		• Hand tools
		• Grinders
		• Generators
		• Hi-Ab
		• Franna Crane

Site survey and site investigation works	• Ground penetrating radar (GPR) or electromagnetic ground investigation. • Utility investigation for connection of site buildings to main utilities by potholing with a vacuum truck. • Environmental surveys and monitoring.	• GPR • Vacuum Truck • Drill rig • Tool truck • Hand Tools • Generators • Plate Compactors

Initial environmental controls	• Erosion and sediment controls in accordance with site erosion and control plans which may include controls such as:
	  ○ Diversion of water flows, including on-site, up and downstream.
	  ○ Controls such as sandbags, sediment fencing.
	• Delineation of sensitive areas and installation of temporary fencing/hoardings.
	• Implementation of wheel wash facilities or rumble grids.
		• Excavator (<14 tonne)
		• Vacuum Truck
		• Bogie Truck
		• Tool Truck
		• Hand Tools
		• Generators

Surface preparation	• Clearing and grubbing of overgrown vegetated areas on site, the hinder laydown areas or building location (grasses and existing capping to be retained and built upon). • Site levelling, grading and compaction which will involve the use of vibratory rollers. • Stockpiling of materials associated with the activity, including stabilisation where a stockpile is not actively worked beyond 28 days.	• Excavator (<14 tonne • Skid Steer • EWP • Chain saw • Mulchers • Rollers • Bogie Truck • Power Tools • Generators • Water Cart
Hardstand and site access	• Formalisation of access and egress points. • Implementing hardstand for car parking by building upon existing surface level. • Spray sealing of hard stand areas, which will involve the use of vibratory rollers. • Internal haul roads installed which will involve the use of bitumen milling or profiling equipment. •	• Excavator • Skid Steer • Rollers • Bogie Truck • Power Tools • Generators • Concrete Truck • Plate Compactors • Water cart
Demolition of non-heritage Structures (Driving range building)	• Removal of hazardous materials (if required) • Internal strip out. • Structure disassembly and demolition which will involve the use of a jackhammer.	• Excavator with hydraulic hammer • EWP • Bogie Truck • Power Tools • Generators

		• Plate Compactors • Water Cart • Demo Saw • Grinders
Utilities	• Installation of services to the site including. Water, sewer, power, internet, and security systems • Where possible, connection of site utilities (water, sewer, and power) to existing infrastructure (this will be managed in accordance with the Utilities contingency management plan). • This work will involve the use of power saws for cutting road pavement and concrete and jackhammers to remove concrete / rock in excavations. • No excavation will be undertaken within the former Tempe Landfill area that has the potential to penetrate the capping layer.	• Excavator with hydraulic hammer • EWP • Vacuum Truck • Bogie Truck • Hand Tools • Grinders • Generators • Plate Compactors • Water Cart • Road Saw
Installation of offices and workshops	• Layout, e.g. Blockwork and foundations, completed for office installation. • Installation of office buildings and shipping containers. • Installation of staff amenities. • Mechanical workshop structures and areas which will involve the use of power saws for cutting timber.	• Franna Crane • Slew Crane <100t • EWP • Concrete Truck • Hand Tools • Power Saw • Grinders • Generators • Water Cart
Fit out, commissioning and install of remaining site infrastructure including	• Chemical and hazardous material storage. • Designated stockpile/laydown areas. • Office furniture fit out. • Formalisation of on-site car parking (line marking etc). • Site lighting installed which will involve the use of power saws for cutting steel work. • Commissioning of equipment. • Trial use of laydown/storage areas to confirm adequacy of controls, movement of plant and equipment and safety systems. • Storage/stocking of site for future operations.	• Franna Crane • EWP • Concrete Truck • Hand Tools • Power Saw • Grinders • Generators • Water Cart

5.3 Indicative program

An indicative program for the nominated compound on State land is detailed below in Table 6. These figures show the start and end durations for activities.

Key site establishment works are scheduled to commence in April 2021 (subject to approval of this Plan), noting that some site investigations and survey works are planned to commence in March 2021. Site establishment activities will be undertaken in accordance with this SEMP until the CEMP is approved. Once the CEMP is approved the Project will enter the construction phase and the site establishment phase will be concluded. Subsequently, any remaining works for the purpose of establishing the ancillary facilities will be undertaken under the approved CEMP.

Table 6: Indicative Program for Compound C3 - Former Tempe Tip site Swamp Road, Tempe

C3 - Former Tempe Tip site Swamp Road, Tempe	Program (months)								Duration (weeks)
	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	
Site survey and site investigation works									12
Environmental controls*									1
Site preparation works									2
Surface preparation*									2
Hardstand and site access*									2
Demolition of non-heritage structures*									3
Utilities*									2
Installation of offices, workshops and water treatment plants*									3
Fit out, commissioning and install of remaining site infrastructure*									2

*This activity will involve high noise intensive works intermittently (such as jack hammering)

5.4 Construction hours

Condition of Approval E14 and E15 set standard working hours for the project:

- 7am – 6pm Monday to Friday, inclusive;
- 8am – 6pm Saturday; and
- At no time on Sundays or public holidays.

Further, except as permitted by an EPL or Out-of-Hours Work Protocol (where an EPL does not apply), highly noise intensive works that result in an exceedance of the applicable NML at the same receiver must only be undertaken:

a) between the hours of 8:00 am to 6:00 pm Monday to Friday;
b) between the hours of 8:00 am to 1 :00 pm Saturday; and
c) if continuously, then not exceeding three (3) hours, with a minimum cessation of work of not less than one (1) hour.

'Continuously' includes any period during which there is less than one (1) hour between ceasing and recommencing any of the highly noise intensive works.

Site establishment activities broadly, would be undertaken within these times. Notwithstanding, due to the operational constraints (for example Sydney Airport or road network restrictions) it may not be possible to complete works during this time and out of hours (OOH) works would be undertaken. Any works outside of standard hours will be carried out in accordance with the requirements of the

Project EPL or Project Out of Hours Works Protocol identified in CoA E18.

The following activities are anticipated to be required for site establishment outside standard construction hours. Whilst indicative, it should be noted that operational constraints, whether or unforeseen circumstances may require program changes however processes to comply with CoAs E16 and E18 would be applied.

Table 7: Indicative out of hours works for C3 compound

Activity	Indicative Duration
Oversized deliveries Project wide (arrival to site only, unloading during standard hours)	Intermittent for the life of establishment activities
Installation and cranage of structures /equipment (eg demountables) which may impact OLS or Sydney Airport operations	Intermittent for the life of establishment activities
Tie-in and cutover of new utility to connections to site compounds (if any disruptions to customer services are required i.e. potable water connections)	Up to five nights

6.0 Environmental Risk Management

6.1 Risk Assessment

The initial risk assessment for site establishment works is outlined in Table 12 below, it identifies the key site establishment activities, potential environmental impacts and risk ratings for that activity.

The activity specific site controls outlined have been developed to comply with the requirements from the Transport for New South Wales Environmental Specifications, Minister's Conditions of Approval (CoA) and Updated Management Measures (UMMs). Management measures may include physical controls, procedures, forms, checklists, monitoring requirements, permits, etc.

A revised risk rating, assuming the controls nominated within the environmental management plans are implemented, is also included in the table. The risk rating is based on the likelihood and the consequence of the event occurring as detailed in Table 8 to Table 11.

Further risk review during delivery of the works will be managed through the John Holland's Safety, Quality and Environment (SQE) Risk Assessment procedure which involves preparing a series of progressively more in-depth risk assessments and method statements for project activities including

- Project Workplace Risk Assessment (WRA) strategic risk assessment conducted by all Projects to gauge SQE risks and optimise their management by applying the 'hierarchy of controls'. Must be informed by Pre-Tender and Contract Award SQE Reviews. Must engage relevant subject matter experts
- Activity Method Statement (AMS); a method statement and risk assessment for individual work elements in the WRA, details the specific methodology to be employed, the associated SQE risks and their controls. Must be informed by the WRA, must engage relevant subject matter experts and Client Representative
- Task Risk Assessment (TRA); a method statement and risk assessment for individual tasks in the AMS, details the specific methodology to be employed, the associated SQE risks and their controls. Must be informed by the AMS and be facilitated by supervision with the participation of the workforce. Must be completed prior to work commencing.

Table 8: Likelihood criteria

Likelihood Rating	Probability	Qualitative Assessment	Recurrence Timeframe
ALMOST CERTAIN	≥ 90%	Almost certain to occur during the Project / contract life	Less than "Monthly"
LIKELY	51% to 89%	Considered likely to occur during the Project / contract life	"Monthly" to "Yearly"
POSSIBLE	30% to 50%	Considered a possible occurrence during the Project / contract life	Between 2 and 5 years
UNLIKELY	5% to 29%	Considered unlikely to occur during the Project / contract life	Between 5 and 20 years
RARE/REMOTE	< 5%	Considered a rare occurrence to happen during the Project / contract life	Greater than every 20 years

Table 9: Consequence risk criteria

Consequence Risk					
Rating	1	2	3	4	5
Workplace Health and Safety	* First aid injury, and/or * Minor safe working issues	* Medical treatment, and/or * Moderate safe working breach likely to impact on operations	* Serious medical / hospital treatment resulting in need alternate working or resulting in lost time injury, and/or * Significant safe working breach with actual impact on operations	* Serious or permanent Injury, and/or * Significant safe working beach with immediate impact on operations on one or more worksites	* 1 or more fatalities, and/or * Major breach of safe working with immediate and extensive impact on one or more worksites
Budget ($AUD)	<$<enter> (<1%) over Project budget	$<enter> to $<enter> (1% to 5%) over Project budget	$<enter> to $<enter> (3% to 5%) over Project budget	$<enter> to $<enter> (5% to 10%) over Project budget	>$ <enter> (>10%) over Project budget
Time Schedule (Target Program)	< <enter> days / weeks / months (<1% of program) over the critical path program	<enter> to <enter> days / weeks / months (1% to 2% of program) over the critical path program	<enter> to <enter> days / weeks / months (2% to 3% of program) over the critical path program	<enter> to <enter> days / weeks / months (3% to 5% of program) over the critical path program	><enter> days / weeks / months (>5% program) over the critical path program
Environment & Natural Resources	* Low severity environmental impact(s) or impact on natural resources availability that are promptly reversible and affected area is within the site boundary	* Nuisance or low severity environmental impact(s) or impact on natural resources availability that are promptly reversible and affected area is outside the site boundary	* Moderate severity environmental impact(s) or impact on natural resources availability where the affected area is within the site boundary	Moderate severity environmental impact(s) or impact on natural resources availability where the affected area is outside the site boundary	High severity environmental impact(s) or impact on natural resources availability at local scale significance
Quality	* Rework Costs less than or equal to 20K	* Rework Costs less than or equal to 100K but greater than 20K	* Rework Costs less than or equal to 250K but greater than 100K	* Rework Costs less than or equal to 5% contract value but greater than 250K	Rework Costs greater than 5% of contract value
Reputation / Community / Media	* Public concern restricted to local complaints * Lack of contribution to the community	* Minor, adverse local public or media attention and complaints * Employees warned only * Minor change in community amenity values	* Attention from media and/ or heightened concern by local community * Stakeholder action will disrupt planned Project activities * Disciplinary action may be taken * Temporary reduced community access to	* Significant adverse national media / public / NGO attention * Considerable and prolonged adverse community impact and dissatisfaction publicity expressed * Stakeholder action will delay achievement of major elements	* Serious public or media outcry with international coverage * Significant adverse community impact & condemnation * Stakeholder action will prevent achievement of the Project objectives * Reduced

Consequence Risk					
			services or employment	of the Project * Permanently reduced community access to services or employment	cohesion of community
Governance / Legal / Regulatory	* Very minor technical breach of regulation or policy or code of ethics. No fine / penalty	* Minor legal issues, non-compliances and breaches of regulation, policy or code of ethics * Enforceable Undertaking	* Moderate breach of regulation, policy or code with investigation or report to authority * Moderate legal proceedings initiated * Several Improvement Notices	* Significant breach of regulation, policy or code with fine or other regulatory action. Significant litigation / legal action * Shut down of part of a Project due to regulatory breach * Prohibition Notice	* Major breach of regulation, policy or code with fine * Major litigation * Major investigation by regulatory body * Prosecution / Accreditation loss
Management Impact	* Impact of event absorbed through normal activity	* Will require some local management attention over several days	* Significant event that can be managed with careful attention, will take some Project managers much time for several weeks * Local operation of contingency plan	* Major event that requires the implementation of crisis and contingency plans at a Project level, regional area or support function (DRP) * Will require the involvement of senior managers and will take up the time of Project managers for several weeks	* Critical event or disaster with significant impact on John Holland that requires considerable senior management time to handle over several months * Full implementation of a John Holland's crisis management plan for days to weeks

Table 10: Overall risk rating

		CONSEQUENCE				
	RATING	1	2	3	4	5
LIKELIHOOD	ALMOST CERTAIN	D	C	B	A	A
	LIKELY	D	D	C	B	A
	POSSIBLE	E	D	C	C	B
	UNLIKELY	E	E	D	C	B
	RARE/REMOTE	E	E	D	D	C

Table 11: Risk rating definition

Risk Abbreviation	Risk Rating
A	Catastrophic
B	Critical
C	Moderate
D	Minor
E	Marginal/Negligible

Table 12: Site establishment initial risk assessment

Key establishment activities (note: items may not occur in sequence order)	Key potential impacts	Risk level prior to mitigation	Mitigation measures	Risk level following mitigation
Site preparation works: • Provision of site security such as ATF fencing panels, signage • Provision of minimum WHS requirements including: o Toilet facilities o Offices o Lunch rooms • Survey and site investigation works including: o Ground penetrating radar or electromagnetic ground investigation o Phase 2 contamination investigation	Generation of dust as a nuisance to the community	D	• Activities with potential to generate dust will be modified or ceased during unfavourable weather • Storage of materials with the potential to result in dust will be minimised and managed appropriately (e.g. Stockpiles will be covered) • Access roads will be maintained and managed to reduce dust generation • During high wind and/or dry conditions, programming of dust generating activities will be considered to reduce impacts to sensitive receivers	E
	Sediment tracking of mud on public roads	D	• Site exit points will be fitted with hardstand material, wheel washes and/or rumble grids as soon as possible to limit the amount of material transported off site • Streetsweepers will be used to manage sediment tracking	E
	Inappropriate disposal of waste (including demolition, vegetation and hazardous/ special waste) or disposal at an unlicensed waste facility	B	• All on site personnel will undergo a site induction that will detail waste and resource management measures • Additional targeted toolbox talks will be given on waste disposal from time to time • HAZMAT surveys will be undertaken and removal of asbestos will be undertaken prior to demolition activities • Suitably licensed waste contractors will be used for the collection and transport of all non-domestic, retail commercial wastes and unsuitable fill material for either offsite processing and/or disposal to an appropriately licensed facility. Receipts for waste transfer and disposal will be checked to ensure all details are correct and retained for audit purposes • Site inspections undertaken on a regular basis to ensure disposal practices are being adhered to.	C
	Complete or partial loss of an unexpected heritage item while undertaking site establishment works.	B	• Any excavations, intrusive works or other operations that have the potential to impact areas of known heritage, cultural or archaeological items must not be undertaken • Any item of potential Aboriginal archaeological/cultural heritage conservation significance, or human remains discovered during the site establishment works will be managed in accordance with the TfNSW Standard Management Procedure – Unexpected Heritage Items March 2015) undertaken as required	C

Key establishment activities (note: items may not occur in sequence order)	Key potential impacts	Risk level prior to mitigation	Mitigation measures	Risk level following mitigation
	Noise and vibration impacts to sensitive receivers	C	• Erection of temporary noise walls where required, other mitigation measures to be implemented until noise walls are installed; • Community updates will be provided throughout the site establishment works • Minimise out of hours works where practicable • Noise mitigation measures identified in the CNVIS to be implemented	D
	Generation of odours due to waste or contaminated soil	D	• Staging works to minimise public exposure • Application of water and or/odour suppressants as required.	E
	Traffic and parking impacts on local roads due to site access arrangements	B	• Scheduling deliveries outside of peak traffic • Minimise construction vehicle parking on public roads by parking on site where parking is available • Queuing and idling of construction vehicles in residential streets to be minimised • Measurements identified in the Traffic Control Plan (TCP) will be implemented for each ancillary facility/construction compound which requires direct access/egress onto the local/arterial road network	D
	Contamination of soil or water due to a spill or leak from plant/equipment	B	• Hazardous substance handling and use will be conducted away from drainage or stormwater lines and, wherever possible, within defined bunds • Any refuelling undertaken on site will be undertaken in designated areas only, outside riparian areas and well away from drainage or stormwater inlets • Any spills or leakages will be immediately contained and absorbed • Spill kits will be placed at all site locations • Hardstand areas will be placed in workshops to avoid spills leaching into soil	D
	Potential clearing of vegetation outside the Project boundary or beyond the Project approval	C	• Daily pre-start outlining the vegetation areas to be cleared • All site personnel to undertake a site induction outlining that no vegetation or tree removal will be undertaken without prior approval	E
	Spreading of noxious weeds via personnel, plant, equipment, topsoil	C	• Targeted toolbox talks regarding the location and treatment of weeds	E
Site establishment works: • Site access and environmental controls including: o Erosion and sediment	Potential clearing of vegetation outside the Project boundary or beyond the Project approval	C	• All personnel working on-site must be inducted • Delineation of the Project footprint prior to clearing	E

Key establishment activities (note: items may not occur in sequence order)	Key potential impacts	Risk level prior to mitigation	Mitigation measures	Risk level following mitigation
controls, including installation of rip rap and drainage sump at entry o Further site investigations (utility and geotechnical) o Treatment of contaminated materials (if required) o Delineation of sensitive areas and temporary fencing o Noise walls installed o Signage and pedestrian diversions o Installation of traffic barriers o Installation of site perimeter fencing and gates (formalisation of access and egress points)	Generation of dust as a nuisance to the community	C	• Activities with potential to generate dust will be modified or ceased during unfavourable weather • Storage of materials with the potential to result in dust will be minimised and managed appropriately (e.g. Stockpiles will be covered) • Access roads will be maintained and managed to reduce dust generation • During high wind and/or dry conditions, programming of dust generating activities will be considered to reduce impacts to sensitive receivers • Adequate dust suppression will be applied during all demolition works	E
	Sediment tracking of mud on public roads	D	• Site exit points will be fitted with hardstand material, wheel washes and/or rumble grids as soon as possible to limit the amount of material transported off site • Streetsweepers will be used to manage sediment tracking	E
	Erosion and sedimentation impacting downstream waterways due to exposed land, inadequate controls or control failure	C	• Erosion and sediment control plans will be prepared for all work and implemented before and during disturbance. All plans will be approved by an Environmental Advisor • All on site personnel will undergo a site induction and ongoing toolbox talks that will detail erosion and sediment control management measures • A soil conservation specialist will be engaged if relevant to provide advice regarding erosion and sediment control • Hardstand areas and surrounding public roads will be cleaned as required using methods such as brooms, bobcat attachments or street sweepers	E
	Inappropriate disposal of waste (including demolition, vegetation and hazardous/ special waste) or disposal at an unlicensed waste facility	B	• All on site personnel working on-site will undergo a site induction that will detail waste and resource management measures • Additional targeted toolbox talks will be given on waste disposal from time to time • HAZMAT surveys will be undertaken and removal of asbestos will be undertaken prior to demolition activities • Suitably licensed waste contractors will be used for the collection and transport of all non-domestic, retail and commercial wastes for either offsite processing and/or disposal to an appropriately licensed facility. Receipts for waste transfer and disposal will be checked to ensure all details are correct and retained for audit purposes	C
• Utilities and ground works: o Demolition of non-heritage structures o Clearing and grubbing o Site levelling, grading and compaction (including fill importation) o Protection of existing services o Removal of redundant utilities o Installation of services to the site e.g. Water, sewer, power, communications o Site layout eg. Blockwork and foundations completed for				
	Missed opportunities to maximise the beneficial re-use of waste	C	• All recyclable solid wastes (paper/ cardboard/ plastic/ glass/timber/metals/fluorescent lighting/printer cartridges/ICT equipment) will be segregated for recycling purposes and volumes to be reported. Wherever possible, packaging should be avoided or minimised to prevent unnecessarily waste.	D
	Complete or partial loss of an unexpected heritage item while undertaking site establishment works.	B	• Any excavations, intrusive works or other operations that have the potential to impact areas of known heritage, cultural or archaeological items must not be undertaken • Any item of potential Aboriginal archaeological/cultural heritage conservation significance, or human remains discovered during the site establishment works will be managed in accordance with the TfNSW Standard Management Procedure – Unexpected Heritage Items March 2015) undertaken as required	C
	Noise and vibration impacts to sensitive receivers	C	• Erection of temporary noise walls where required, other mitigation measures to be implemented until noise walls are installed. • Community updates will be provided throughout the site establishment works • Minimise out of hours works where practicable • Noise mitigation measures identified in the CNVIS to be implemented	D

Key establishment activities (note: items may not occur in sequence order)	Key potential impacts	Risk level prior to mitigation	Mitigation measures	Risk level following mitigation
office installation o Sealing of hard stand areas (excluding acoustic sheds) o Internal haul roads installed o Minor stockpiling of materials	Generation of odours due to waste or contaminated soil	D	• Staging works to minimise public exposure • Application of water and or/odour suppressants as required	E
	Traffic and parking impacts on local roads due to site access arrangements	B	• Designated haul routes for heavy vehicles • Scheduling deliveries outside of peak traffic • Minimise construction vehicle parking on public roads by parking on site where parking is available. • Queuing and idling of construction vehicles in residential streets to be minimised • Measurements identified in the Traffic Control Plan (TCP) will be implemented for each ancillary facility/construction compound which requires direct access/egress onto the local/arterial road network.	D
• Installation of offices, workshops and water treatment plants: o Installation of office blocks and shipping containers o Staff amenities o Mechanical workshop structures and areas o Water treatment plant and water tank including fit out including excavation and concrete works o Crane movements for heavy objects including site offices	Spreading of noxious weeds via personnel, plant, equipment, topsoil	C	• Targeted toolbox talks regarding the location and treatment of weeds	E
	Contamination of soil or water due to a spill or leak from plant/equipment	B	• Hazardous substance handling and use will be conducted away from drainage or stormwater lines and, wherever possible, within defined bunds • Any refuelling undertaken on site will be undertaken in designated areas only, outside riparian areas and well away from drainage or stormwater inlets • Any spills or leakages will be immediately contained and absorbed • Spill kits will be placed at all site locations • Hardstand areas will be placed in workshops to avoid spills leaching into soil	D
Fit out, commissioning and install of remaining site infrastructure including: • Fuel storage • Asphalting of internal haul roads as required, formalising roads and external connections	Generation of dust as a nuisance to the community	C	• Activities with potential to generate dust will be modified or ceased during unfavourable weather • Storage of materials with the potential to result in dust will be minimised and managed appropriately (e.g. Stockpiles will be covered) • Access roads will be maintained and managed to reduce dust generation • During high wind and/or dry conditions, programming of dust generating activities will be considered to reduce impacts to sensitive receivers	E
	Sediment tracking of mud on public roads	D	• Site exit points will be fitted with hardstand material, wheel washes and/or rumble grids as soon as possible to limit the amount of material transported off site • Streetsweepers will be used to manage sediment tracking	E

Key establishment activities (note: items may not occur in sequence order)	Key potential impacts	Risk level prior to mitigation	Mitigation measures	Risk level following mitigation
• Chemical and hazardous material storage • Designated stockpile/laydown areas • Office furniture fit out • Formalisation of on- site car parking (line marking etc) • Site lighting installed • Connection of utilities	Inappropriate disposal of waste (including demolition, vegetation and hazardous/ special waste) or disposal at an unlicensed waste facility	B	• All on site personnel will undergo a site induction that will detail waste and resource management measures • Additional targeted toolbox talks will be given on waste disposal from time to time • HAZMAT surveys will be undertaken and removal of asbestos will be undertaken prior to demolition activities • Suitably licensed waste contractors will be used for the collection and transport of all non-domestic, retail and commercial wastes for either offsite processing and/or disposal to an appropriately licensed facility. Receipts for waste transfer and disposal will be checked to ensure all details are correct and retained for audit purposes	C
	Missed opportunities to maximise the beneficial re-use of waste	C	• All recyclable solid wastes (paper/cardboard/plastic/ glass/timber/metals/fluorescent lighting/printer cartridges/ICT equipment) will be segregated for recycling purposes and volumes to be reported. Wherever possible, packaging should be avoided or minimised to prevent unnecessarily waste	D
	Complete or partial loss of an unexpected heritage item while undertaking site establishment works.	B	• Any excavations, intrusive works or other operations that have the potential to impact areas of known heritage, cultural or archaeological items must not be undertaken • Any item of potential Aboriginal archaeological/cultural heritage conservation significance, or human remains discovered during the site establishment works will be managed in accordance with the TfNSW Standard Management Procedure – Unexpected Heritage Items March 2015) undertaken as required	C
	Noise and vibration impacts to sensitive receivers	C	• Erection of temporary acoustic barriers where required • Community updated will be provided throughout the site establishment works • Minimise out of hours works where practicable • Noise mitigation measures identified in the CNVIS to be implemented	D
	Generation of odours due to waste or contaminated soil	D	• Staging works to minimise public exposure • Application of water and or/odour suppressants as required.	E
	Erosion and sedimentation impacting downstream waterways due to exposed land, inadequate controls or control failure	C	• Erosion and sediment control plans will be prepared for all work and implemented before and during disturbance. All plans will be approved by an Environmental Advisor. • All on site personnel will undergo a site induction and ongoing toolbox talks that will detail erosion and sediment control management measures • A soil conservation specialist will be engaged if relevant to provide advice regarding erosion and sediment control • Hardstand areas and surrounding public roads will be cleaned as required using methods such as brooms, bobcat attachments or street sweepers	E
	Traffic and parking impacts on local roads due to site access arrangements	B	• Designated haul routes for heavy vehicles • Scheduling deliveries outside of peak traffic • Minimise construction vehicle parking on public roads by parking on site where parking is available • Queuing and idling of construction vehicles in residential streets to be minimised • Measurements identified in the Traffic Control Plan (TCP) will be implemented for each ancillary facility/construction compound which requires direct access/egress onto the local/arterial road network	D

Key establishment activities (note: items may not occur in sequence order)	Key potential impacts	Risk level prior to mitigation	Mitigation measures	Risk level following mitigation
	Contamination of soil or water due to a spill or leak from plant/equipment	B	• Hazardous substance handling and use will be conducted away from drainage or stormwater lines and, wherever possible, within defined bunds • Any refuelling undertaken on site will be undertaken in designated areas only, outside riparian areas and well away from drainage or stormwater inlets • Any spills or leakages will be immediately contained and absorbed • Spill kits will be placed at all site locations • Hardstand areas will be placed in workshops to avoid spills leaching into soil	D
	Potential clearing of vegetation outside the Project boundary or beyond the Project approval	C	• Daily pre-start outlining the vegetation areas to be cleared • All site personnel to undertake a site induction outlining that no vegetation or tree removal will be undertaken without prior approval	E
	Spreading of noxious weeds via personnel, plant, equipment, topsoil	C	• Targeted toolbox talks regarding the location and treatment of weeds	E

7.0 Summary of potential environmental impacts

7.1 Traffic and Transport

7.1.1 Parking and Access

Under CoA E54, a road dilapidation report will be prepared by a suitably qualified person for local roads (and associated infrastructure within the road reserve) which would be used by heavy vehicles prior to works commencing.

Any new or modified local roads, parking, pedestrian and cycle infrastructure will be designed to meet relevant design, engineering and safety guidelines, including Austroads Guide to Traffic Management (in accordance with CoA E59). An independent Road Safety Audit will be undertaken to ensure the safety performance is aligned with the relevant design, engineering and safety guidelines, including Austroads Guide to Traffic Management (in accordance with CoA E60). Site access points will only be implemented once the road safety audit is complete and any identified actions have been implemented. Additionally, site access points will only be installed once documentation with road safety analysis has been approved by the NSW Transport Management Centre.

To minimise the impacts of on-street parking by site establishment construction workers, on-site worker parking will be available during the site establishment phase at ancillary facility C3. Impacts will be minimised through construction traffic management measures until specific parking facilities are established as described in Annexure B.

Removal of four off-street parking facilities will occur as part of the compound establishment. As this is not classified as on-street parking, the project Parking and Access Strategy under CoA E57 is not triggered for site establishment works.

The proposed site access for both light and heavy vehicles are identified in Table 13 during establishment activities.

Local roads have also been identified in Table 13 which would be used by heavy vehicles. It should be noted that whilst these compounds are not located on State land, they will be accessed from such and these requirements are therefore triggered.

A spotter will be used to assist heavy vehicle movements where required with access/egress at entry/exit gates occurring under traffic control (or similar device). The following measures would be implemented on-site to manage impacts:

- Compression brakes will only be used in emergencies.
- Trucks must give way to pedestrians and other vehicles in the roadway.
- Trucks must watch for vehicles exiting from driveways.

Additional information required under CoA E52 and 53 has been included in the relevant sub-sections in Section 7.1.2.

Table 13: Site access routes during establishment

Ancillary facility	Vehicle type	Site establishment access	Road Type
C1 - Northern Lands Burrows Road, Mascot	Light vehicles	Burrows Road S, St Peters (located at end of cul-de-sac, straight entry, straight exit)	Unclassified
	Heavy vehicles	Burrows Road S, St Peters (located at end of cul-de-sac, straight entry, straight exit)	Unclassified

Ancillary facility	Vehicle type	Site establishment access	Road Type
C2 - Northern Lands Car Park Airport Drive, Mascot	Light vehicles	Airport Dr and North Precinct Road Intersection, (can turn left or right at the signalised intersection depending on if approaching from the West or the East)	Federal Road
	Heavy vehicles	Airport Dr and North Precinct Road Intersection, (can turn left or right at the signalised intersection depending on if approaching from the West or the East)	Federal Road
C3 - Former Tempe Tip site Swamp Road, Tempe	Light vehicles	Approach via Holbeach Ave (from Princes Hwy), turn left at roundabout on to unnamed road along Tempe Reserve, turn at left 3rd street on the left toward former Tempe Golf site Exit via same route, able to turn left or right from Holbeach road on to Princes Hwy	Unclassified
	Light vehicles	Approach via Bellevue St (from Princes Hwy), continue on to Swamp Road and through gate into construction site Depart via Bellevue St, turn left or right on to Princes Hwy at signalised intersection	Unclassified (Bellevue St & Swamp Road) Haulage Route (within construction site)
	Heavy vehicles	Approach via Bellevue St (from Princes Hwy), continue on to Swamp Road and through gate into construction site Depart via Bellevue St, turn left or right on to Princes Hwy at signalised intersection	Unclassified (Bellevue St & Swamp Road) Haulage Route (within construction site)

7.1.2 Local Road impacts

In accordance with CoA E52, spoil haulage and concrete delivery vehicles associated with the construction of the Project, are not permitted to use local roads within 1km of the construction works and construction ancillary facilities, unless approved by the Secretary in accordance with CoA E53. JHSWJV will avoid the use of local roads wherever practicable for the operation of spoil movements, as well as for concrete deliveries associated with the Project construction activities.

The local roads proposed to be used for spoil and concrete delivery during site establishment are presented in Table 14. Consideration of CoA E53 for the identified local roads is included in the following sub-sections.

Table 14: Site access routes during establishment

No.	Location	From	To	Summary
1	Burrows Road	Canal Road	End of cul de sac (access to Visy building)	Required for access to compound C1 using access point A3. on Burrows Road.
2	Bellevue Street	Princes Highway	Swamp Road	Required for access to compound C2 and C3 using access point A7 and A6 on the southern end of Bellevue Street.

Note: A local road is defined for the Project as any road that is not defined as a classified road under the *Roads Act 1993.*

Burrows Road between Canal Road and end of cul de sac (access to Visy building)

Table 17: Burrows Road traffic and pedestrian impact assessment

Condition of Approval E53 requirement where local roads are intended to be used for spoil haulage and concrete delivery.	Mitigation strategies / approach
(a) a swept path analysis;	• Swept paths for 19m semi-trailer plus Truck and Dog provided in Appendix G
(b) demonstrate that the use of local roads will not compromise the safety of pedestrians and cyclists and have minimal amenity impacts on residents residing along the local road(s);	• • Burrows Road between Canal Road and access to Visy building is a local road managed by Inner West Council which terminates at the proposed site access. The land use is industrial with pedestrian facilities on each side of the road. Burrows Road is used by both local and heavy vehicles to access the main arterial roads and service the area. • Parking is typically unrestricted along Burrows Road, with a section of 1P parking and No Stopping signposted on approach to the intersection. No residential properties are located on this route. • Construction vehicles using this section of Burrows Road will not adversely impact the road conditions for pedestrian and/ or cyclists as the road is already being used by a high volume of industrial traffic. • Amenity impacts are expected to be minimal due to the existing land-use and predicted vehicle volumes. In addition, the route would not impact pre-existing pedestrian facilities or vehicular access to private property.
(c) provide details as to the date of completion of the road dilapidation surveys for the subject local roads; and	• A dilapidation survey for all local roads has been completed .
(d) describe the measures that will be implemented to avoid where practicable the use of local roads past schools, aged care facilities and childcare facilities during their peak times of operation.	No schools, aged care facilities and childcare facilities will be impacted by the Project by using this section of Burrows Road.

Bellevue Street between Princes Highway and Swamp Road

Table 18: Bellevue Street traffic and pedestrian impact assessment

Condition of Approval E53 requirement where local roads are intended to be used for spoil haulage and concrete delivery.	Mitigation strategies / approach
(a) a swept path analysis;	• Swept paths for 19m semi-trailer plus Truck and Dog provided in Appendix G
(b) demonstrate that the use of local roads will not compromise the safety of pedestrians and cyclists and have minimal amenity impacts on residents residing along the local road(s);	• Bellevue Street connects Princess Highway to the site. It services a predominately industrial area and is frequently used by heavy haulage trucks to access multiple industrial facilities along the road. Amenity and acoustic impacts are expected to be minimal due to the route running through an industrial precinct and pedestrian and public vehicle access would be maintained. • The existing pedestrian footpath on the northern side terminates 80m east of the intersection and services the properties on this side of the road. There will be no impact on the footpaths as a result of the Project's works in the area with no change to existing arrangements. Informal cycling arrangements would remain unchanged.
(c) provide details as to the date of completion of the road dilapidation surveys for the subject local roads; and	• A dilapidation survey for all local roads has been completed .
(d) describe the measures that will be implemented to avoid where practicable the use of local roads past schools, aged care facilities and childcare facilities during their peak times of operation.	No schools or aged care facilities are located on this route. Notwithstanding, measures proposed for this local road includes: • Driver training and awareness campaign during pre-starts, Project inductions, truck aware campaigns. • Project inducted heavy vehicles will be fitted with telematic devices. • Community engagement including meetings, notifications and consultation. • Construction vehicles will minimise idling, queuing on public roads and movement during peak periods.

7.1.3 Workforce and vehicle movements

Anticipated vehicle movements for the establishment of each ancillary facility are identified in Table 20. Volumes of construction vehicles and personnel numbers during the operation of the ancillary facilities will be addressed in the Traffic and Transport Management Plan under CoA C5(a).

Table 20: Anticipated traffic volumes during site establishment works (per day one way)

Ancillary Facility	Light vehicle movements/day (at peak)	Heavy vehicle movements/day (at peak)
C1 - Northern Lands Burrows Road, Mascot	100	50

C2 - Northern Lands Car Park Airport Drive, Mascot	100	50
C3 - Former Tempe Tip site Swamp Road, Tempe	10	50
C3 - Former Tempe Tip site Holbeach Ave , Tempe	100	0

To manage impacts, environmental safeguards (Annexure B) have been developed to mitigate the effects of site establishment works on local traffic and transport. Key measures include scheduling Project related transport movements to avoid peak traffic, identifying heavy vehicle routes and communicating these with the drivers. With these environmental safeguards in place traffic and transport impacts are anticipated to be minimal.

7.1.4 Public Transport

Public transport will not be impacted by establishment of the ancillary facilities.

7.2 Air Quality

The EIS/MDP identified several site establishment activities that have the potential for dust emissions including:

- Demolition: activities that involves the removal of existing structures.
- Site Levelling: works to raise the ancillary facilities (above flood levels for example) or for the erection of demountable buildings and establishment of site access points.
- Installation of site offices and workshops: the provision of new structures, or modification or refurbishment of existing structures.
- Tracking: the transport of dust and dirt from the site onto the public road network from construction vehicles. These materials may then be deposited and re-suspended by vehicles using the network.

Environmental safeguards have been recommended to mitigate the effects of establishment works on local air quality at the nearest receptors, including carrying out inspections, stabilising disturbed ground and exposed soils, and using water to suppress dust. With these environmental safeguards in place air quality is anticipated to have a minimal impact.

Environmental safeguards for air quality are listed in Annexure B of this SEMP.

7.3 Noise and vibration

Proposed site establishment works may result in potential noise and vibration impacts due to heavy machinery, hammering on hardstands/slabs/plinths, demolition of buildings and disposal of demolition rubble. Minor impacts are expected prior to the installation of hoarding which will be managed through the mitigation measures listed in Annexure B.

A Construction Noise and Vibration Impact Statement (CNVIS) has been developed by Renzo Tonin for site establishment activities which assess impacts from activities at noise sensitive receivers and likely mitigation. This can be found in Annexure H.

The CNVIS concludes that the nearest residential receivers to the C3 compound (NCA03- refer Appendix B of the CNVIS for the location map) would experience audible construction noise when typical activities are occurring and a moderately intrusive construction noise when high impact activities are occurring. The remaining residential receivers are likely to comply with their corresponding NMLs. Cumulative impacts have also been modelled to assess the noise levels at the most noise-affected receivers in NCA03 when works are being conducted concurrently in all ancillary facilities with impacts were found to be negligible.

Due to the distance between receivers and works, no structures or building fell within the minimum working distances for both structural damage and human annoyance. To mitigate impacts, activities that result in high noise will be subject to respite periods as outlined in the site establishment noise monitoring program and CoA E15:

Except as permitted by an EPL, highly noise intensive works that result in an exceedance of the applicable NML at the same receiver must only be undertaken:

a) Between the hours of 8:00 am to 6:00 pm Monday to Friday,

b) Between the hours of 8:00 am to 1:00 pm Saturday, and

c) if continuously, then not exceeding three (3) hours, with a minimum cessation of work of not less than one (1) hour.

For the purposes of this condition, 'continuously' includes any period during which there is less than one (1) hour between ceasing and recommencing any of the highly noise intensive works. In addition, the following measures would also be employed:

- Plant and equipment would be selected to reduce impacts and noise verification monitoring undertaken where required.
- Scheduling of works to consider duration and provide appropriate respite periods.
- Siting of plant to take advantage of topography and shielding.
- Use of non-tonal alarms.
- Site induction and toolbox talks to manage worker behaviour.
- Community consultation.

A detailed land use survey has also been undertaken to re-confirm sensitive receivers prior to the site establishment works commencing. Environmental safeguards for noise and vibration are further identified in Annexure B.

7.4 Land use and property

The following land use and property impacts are detailed within the table below and formed part of the approved Project.

Table 21: Approved land use changes

Ancillary Facility	Existing land use	Approved change in land use	Potential impacts
C3 - Former Tempe Tip site Swamp Road, Tempe	Public parking lot, dog park, vacant golf driving range	The ancillary facility (C3) would support construction of the Terminal 1 connection and western bridges work area.	• Increased construction traffic on surrounding roads • Increased noise and vibration during working hours • Relocation of existing dog park to another location • Reduction of public green spaces now used as laydown for bridge construction • Removal of public parking adjacent dog park • Relocation of existing active transport link

Any potential land use and property impacts during site establishment activities would be managed in accordance with the safeguards listed in Annexure B.

7.5 Urban design and visual amenity

7.5.1 Visual screening and light spill

Ancillary facilities will be constructed in a manner that minimises the visual impacts in accordance with CoA A17, E5, E64 and E65. Lighting may be required at night for the purposes of illuminating required office buildings, security, or where works are undertaken in poor light or out of hours.

Lights will be located as far away as possible and orientated away from properties, including sensitive areas such as bedroom windows. If there is no alternative, shields and baffles to help keep light spill to a minimum will be used. All practical and reasonable steps will be taken to mitigate temporary night lighting impacts for adjoining properties as described in the urban design and visual amenity environmental safeguards listed in Annexure B.

7.5.2 Boundary screening

Boundary screening will be installed adjoining or adjacent to residential and/or commercial properties in accordance with CoA A18, A19 and A20. Screening will minimise visual, noise and air quality impacts on adjacent sensitive receivers.

Acoustic barriers are currently not proposed for site establishment. In the event a barrier is required for operations as part of a future CNVIS, these will be deployed in the nominated locations and consideration of constraints noting they may not be possible under CoA. In accordance with CoA A36, the CSSI name and application number would be displayed.

The noise and vibration, air quality, urban design and visual amenity environmental safeguards in Annexure B have been designed to avoid, reduce and manage visual impacts during site establishment.

7.6 Soil and water quality

The EIS/MDP identified the potential for erosion of exposed soils, sedimentation of waterways and exposure of contaminated soils and groundwater during this activity. This would be managed through site mitigation measures including stabilising disturbed ground and exposed soils, water to suppress dust and using appropriate bunding for chemicals and fuels.

If acid sulfate soils are identified, they would be managed in accordance with the Acid Sulfate Soil Manual (Acid Sulfate Soil Management Advisory Committee 1998) which includes procedures for the investigation, handling, treatment and management of such soils. With the implementation of measures in Annexure B, impacts on soil and water quality will be managed and not significantly impact on soils and surface water during works.

7.7 Contamination

In accordance with section 13 of the EIS/MDP there is potential for contamination to be encountered. If not managed correctly, there is potential to:

- Mobilise contaminants, which could affect nearby soils, surface water and groundwater.
- Increase the migration of contaminants into surrounding areas via leaching, overland flow and/or subsurface flow (water and/or vapour) or dust, with the potential to impact on receiving environments, such as Alexandra Canal.
- Increase the risk of exposure to contaminants (direct contact and/or inhalation) by site workers, visitors and the local community.

The risk of disturbing or encountering contaminated material varies depending on the extent and type of contamination and proposed works to be undertaken at each ancillary facility.

7.7.1 Compound C3

Table 22 provides an overview of potential contamination sources and contaminants of concern within this area, including results of previous and recent site investigations.

Table 22: Overview of potential contamination within the former Tempe landfill

Potential source of contamination	Contaminants of potential concern[1]	Outcomes of site investigations
• Site used as a former landfill • Former container storage activities • Historic weed and insect control on vacant areas	• Total recoverable hydrocarbons (TRH) • Polycyclic aromatic hydrocarbons (PAHs) • Asbestos containing materials • Heavy metals • Phenols • Polychlorinated biphenyls (PCBs) • PFAS • Pesticides (organochlorine and organophosphorus pesticides) • Volatile organic compounds • Semi volatile organic compounds • Nutrients (in groundwater) • Landfill gas (carbon monoxide, carbon dioxide, hydrogen sulfide and methane)	**Soil** • Elevated concentrations of contaminants were encountered across the site at varying depths • Hotspots of TRH, PAHs and heavy metals in fill materials were found to exceed relevant criteria • Low levels of PFAS compounds were detected in most soil samples tested. All PFAS concentrations were below the PFAS NEMP health criteria for recreational users and commercial workers • Potential asbestos containing materials were identified **Groundwater** • Concentrations of ammonia and heavy metals exceeded assessment criteria • Low levels of hydrocarbons and PFAS were reported **Other** • Landfill gas concentrations recorded across the assessment area

		• The maximum gas screening value recorded within the site falls into 'characteristic gas situation 2' low risk conditions (NSW EPA, 2012) • High concentrations of methane and carbon dioxide were detected

Note: 1. Contaminants of potential concern are based on previous and current activities undertaken in the assessment area.

The environmental safeguards in Annexure B would be implemented during works to achieve the desired performance outcome, which is to ensure that risks arising from the disturbance of land and disposal of soil are minimised, including disturbance to contaminated areas. In addition, the Unexpected Contaminated Land and Asbestos Finds in Annexure E must also be followed.

7.8 Flooding and drainage

The site is broadly located within the lower reaches of the Cooks River catchment, a sub-catchment of Botany Bay. A small portion of the Project site, near the intersection of Sir Reginald Ansett Drive and Keith Smith Drive, discharges to Mill Stream via the Sydney Airport stormwater system. Mill Stream drains to Botany Bay, which is part of the Georges River catchment.

Both the Cooks River and Georges River catchments have been extensively developed and the rainfall-runoff has been significantly altered. This has resulted in changes to the quantity and speed of runoff within the catchments.

Flood modelling was carried out for the Project as part of the EIS/MDP and considered a range of annual recurrence interval (ARI) design floods, the Probable Maximum Flood (PMF), the impacts predicted due to climate change and situations such as obstruction or modification of existing drainage infrastructure, impacts on existing flood evacuation routes and flood planning areas and changes to flooding regimes.

Site establishment works have the potential to impact local overland flow paths and existing minor drainage paths. Disruption of existing flow paths could occur as a result of:

- Disruption of existing drainage networks during decommissioning, upgrade or replacement of drainage pits and pipes.
- Interruption of overland flow paths by installation of temporary construction ancillary facilities and surface level alterations.
- Sediment entering drainage assets and causing blockages.
- Overloading the capacity of the local drainage system.

Table 23 considers this impact.

Table 23: Overview of potential flood behaviour on C3 Compound

Ancillary Facility	Potential impact of construction on flood behaviour
C3 - Former Tempe Tip site Swamp Road, Tempe	Construction is expected to have a negligible impact on existing flood behaviour in the immediate vicinity of this work area.

Flooding and drainage will be managed in accordance with the flooding and drainage environmental safeguards identified in Annexure B of this SEMP.

7.9 Biodiversity

7.9.1 Flora and Fauna

Any work that may adversely affect or potentially adversely affect threatened species or threatened ecological communities (within the meaning of the Biodiversity Conservation Act 2016) is construction and cannot be undertaken as early works. Section 22 of the EIS/MDP outlines that the proposed ancillary facilities are located in 'Highly disturbed areas with no or limited native vegetation' consisting of scattered or clumped areas of trees to exotic scrub, grassland and weeds, or 'urban exotic/native landscape plantings' consisting of cleared/non-native vegetation.

The vegetation that would be removed provides limited habitat resources for native fauna due to its highly modified nature. Fauna habitat resources that would be removed include foraging and shelter resources for common native fauna typical of urban environments. The Grey-headed Flying Fox may occasionally forage in planted trees on areas identified within the ancillary facilities. However, these trees do not represent critical habitat, and the Project would not have a significant impact on the species.

Migratory woodland species (such as the Rufous Fantail) may occasionally use 'urban exotic/native landscape plantings' but are unlikely to depend on it. The Project would not directly harm marine vegetation or habitat of threatened species, communities or populations. Flora and fauna will be managed in accordance with the biodiversity environmental safeguards in Annexure B of this document.

7.9.2 Trees

The Project will be designed to retain as many trees as possible. Pre-clearance inspections would be undertaken prior to any clearing and trees (as defined under the approval) recorded.

A biodiversity assessment has been carried out as part of the EIS/MDP based on the concept design to identify trees that would be impacted by site establishment and construction. All trees and vegetation to be removed during site establishment works have been captured including trees that would be removed at ancillary facility C3. On-site investigations will be carried out during site establishment to confirm if any trees can be retained. Compensatory tree planting would be included in the Landscape Strategy Report as outlined in CoA E84 and meet the requirements of CoA E83. Biodiversity environmental safeguards are further detailed in Annexure B.

7.10 Groundwater

Site establishment works are proposed above ground and there are no works that would impact the hydrogeological regime. The depth of groundwater within the uncontrolled fill in the former Tempe landfill is recorded at an average of 12 metres below ground surface. No excavation will be undertaken within the former Tempe Landfill area that has the potential to penetrate the capping layer.

7.11 Non-Aboriginal heritage

Ancillary facility C3 has been identified as an area which does not contain non-aboriginal items or any potential for archaeological heritage. Therefore, activities would operate under the TfNSW Standard Management Procedure – Unexpected Heritage Items March 2015. This includes ceasing works and undertaking further assessment, as detailed in Annexure B.

7.12 Aboriginal heritage

The EIS/MDP did not identify any sites or potential sites of Aboriginal heritage within the vicinity of the proposed Ancillary facilities. All sites are located within highly disturbed, urbanised areas, therefore, as a result it is unlikely the site establishment works at the sites

would impact on known areas. the TfNSW Standard Management Procedure – Unexpected Heritage Items March 2015 would be employed for works.

7.13 Greenhouse gas

Greenhouse gases in relation to the site establishment activities at the site would be minor, and limited to the use of plant, vehicles and electricity use. Resource use and waste minimisation environmental safeguards are included in Annexure B.

7.14 Resource and waste minimisation

Resources would largely be made up of construction materials (concrete, asphalt, steel, fuel etc), water and power. The waste generated would largely be made up of unsuitable fill material and demolition waste. Resource use and waste minimisation environmental safeguards are listed in Annexure B.

7.15 Climate change risk and adaption

Chapter 26 of the EIS/MDP evaluated climate change risk. Potential climate change risk and adaption impacts related to t site establishment works relate to flooding as a result of increased intensity and frequency of extreme rainfall events.

7.16 Hazard and risk

Potential impacts would include accidental spills of fuels and/or chemicals which could result in contamination of soils and/or waterways, mismanagement of contaminated material and gasses from contaminated material. These would be managed by implementing the hazard and risk environmental safeguards listed in Annexure B.

8.0 Management approach

Section 8 of this document sets out the documentation which will be developed for major ancillary facilities and an outline of specific environmental management and mitigation measures to address potential impacts for a range of environmental factors in accordance with Conditions of Approval.

8.1 Environmental Management System

The JHSWJV Environmental Management System manages and controls the environmental aspects of the Project during construction. It also provides the overall framework for the system and procedures to ensure environmental impacts are minimised and legislative and other requirements are fulfilled.

This document has been developed to align with the John Holland EMS, which has been adopted for the Project.

8.2 Sensitive Area Plans

A Sensitive Area Plan (SAP) is an internal document prepared to assist in the planning and management of specific areas. The document details constraints within and adjacent to the site such as vegetation communities, areas of heritage value, sensitive receivers and waterways.

A series of SAPs will be prepared prior to the establishment of ancillary facilities. These SAPs will be included in applicable work packs held by the supervisor, which consist of relevant construction documents to assist supervisors to manage specific packages of work. The SAP provides a simple but effective visual tool to identify key risk areas and to promote ongoing communication to construction personnel throughout the Project.

The SAP's are considered live documents and they will be regularly reviewed to reflect true ground conditions and identify any new environmentally sensitive areas.

8.3 Environmental Work Method Statements

Environmental Work Method Statements (EWMS) will be prepared for major ancillary facility C3 and will incorporate relevant mitigation measures and controls from this document. As a minimum, EWMS' will include:

- Description of the work activity, including any plant and equipment to be used.
- Outline of the sequence of tasks for the activity, including interfaces with other construction activities.
- Identification of any environmental and/or socially sensitive areas, sites or places.
- Identification of potential environmental risks/impacts due to the work activity.

8.4 Progressive Erosion and Sediment Control Plans

Initial erosion and sediment control plans (ESCPs) will be prepared for each major ancillary facility and controls installed prior to commencement of activities. ESCPs are developed in accordance with the Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom 2006) (the Blue Book), Volume 2D Main Roads Construction (DECCW 2008) and site-specific soil data which detail:

- Locations of erosion, sedimentation and water quality control measures proposed to treat stormwater before disposal.
- Clean and dirty water flow paths, critical drainage infrastructure, waterways and site boundaries.

- Layout of the site cleared and protected areas and stockpiling areas.
- Construction period and staging.

These plans will be updated as the Project progresses and site conditions evolve.

These documents would be initially developed by the Project's Soil Conservationist. Updates to the documents would be made by the environmental team in consultation with the Soil Conservationist.

8.5 Traffic Control Plans

Traffic Control Plan's will be prepared for each major ancillary facility in accordance with the AS1742.3-2009 and TfNSW (former RMS) Traffic Control at Worksites Manual Version 4. A Traffic Control Plan (TCP) is a diagram identifying signs and devices in specific locations to allow the public and workers at the work site to be safely separated from traffic, while minimising disruption and risk to road users. A TCP generally details:

- Traffic control signage and traffic flow arrangement.
- Site establishment boundary.
- Speed limits.
- Direction of construction traffic and sometimes reversing arrangements.
- Parking locations for both construction workers and the public.
- ROL conditions (if applicable).

Road Occupancy Licence's (ROL) may be required during ancillary facility establishment may be required to facilitate the delivery of oversized items (such as site sheds) and may also be required to facilitate demolition activities.

Pedestrian and cyclist access will be maintained however some detours may be required to improve safety and amenity of pedestrians and cyclist or the accessibility of trucks entering and exiting ancillary facilities. Alternate routes will aim to minimise inconvenience to pedestrians and cyclists and will be clearly signed and marked. Additionally, the traffic and transport environmental safeguards within Annexure B will be implemented.

8.6 Construction Parking and Access Strategy

It is not anticipated that any on street parking would be removed to establish the C3 ancillary facility and accordingly a Construction Parking and Access Strategy in accordance with CoA E57 is not required.

8.7 Site Contamination Reports

Condition E44 requires the preparation of a Contaminated Sites Investigation Report for sites that are suspected or known to be contaminated. Site Contamination Reports document findings of Phase 1 and Phase 2 contamination assessments. If the site or part of the site establishment sites are identified as requiring remediation, a Remediation Action Plan (RAP) will be prepared and implemented.

On completion of remediation a Site Audit Statement and Site Audit Report will be prepared by an NSW Environment Protection Authority (EPA) Accredited Site Auditor to declare that the site is suitable for purposed as per CoA E46 and E47.

The above investigations are currently being programmed and will occur throughout the site establishment phase. The outcomes of the investigations will be documented at a later stage and prior to excavation (construction) works commencing under the approved CEMP.

An Unexpected Contaminated Land and Asbestos Finds Procedure has been prepared for use at all sites and is included in Annexure E.

8.8 Flood Mitigation Strategy

In accordance with UMM HF8, site facilities will be located outside high flood hazard areas based on a one per cent AEP flood. For site facilities located within the floodplain, a site-specific flood mitigation strategy would identify how risks to personal safety and damage to construction facilities and equipment will be managed.

It is not anticipated that Compound C3 will exacerbate flooding characteristics as a result of the Project. However, should it be identified, appropriate mitigation measures will be included in the relevant EWMS.

Any potential flooding and drainage impacts would be managed in accordance with the Flood Mitigation Strategy and the management and mitigation measures listed in Annexure B.

8.9 Light Spill

Lighting will be required for the site. All practical and reasonable steps to mitigate impacts will be undertaken as required under CoA E5 and E65, and UMM AS11 and LV10. To meet these requirements, site establishment works will incorporate the following aspects:

- Lighting of work areas, ancillary facilities, and work sites will be oriented to minimise glare and light spill impact on adjacent receivers.
- Construction lighting will be selected and located to meet Sydney Airport's restricted lighting zone requirements. For locations where it is not possible to achieve the required intensity levels, works requiring lighting will be undertaken in accordance with the requirements of Sydney Airport Corporation, which may involve restricting the timing of activities outside Sydney Airport's operational hours.
- Construction lighting will comply with section 9.21 of the Manual of Standards (CASA 2017) and the National Airports Safeguarding Framework.

8.10 Boundary Screening Approach

Boundary screening will be installed within ancillary facilities adjoining or adjacent to residential and/or commercial properties in accordance with CoA A18, A19 and A20. The boundary screening will minimise visual, noise and air quality impacts on adjacent sensitive receivers (unless provisions of A19 apply). In accordance with CoA A36, all signage on hoardings surrounding the construction ancillary facilities must include the CSSI name and application number.

8.11 Community engagement

Prior to establishment of ancillary facilities, the community relations team will engage with residential and commercial properties that adjoin or are adjacent to the ancillary facilities. Engagement methods will include door knocking residents impacted by the ancillary facilities, letter box drops and community updates as applicable.

During the site establishment phase, any comments, feedback or complaints relating to noise, air quality and other amenity issues will be addressed in accordance with the Communication Strategy and Complaints Management System.

In accordance with CoA B8, the following avenues will be available throughout the site establishment phase for the public to communicate with the Project:

a) a 24- hour telephone number for the registration of complaints and enquiries about the CSSI;
b) a postal address to which written complaints and enquires may be sent;
c) an email address to which electronic complaints and enquiries may be transmitted; and
d) a mediation system for complaints unable to be resolved.

The telephone number, postal address and email address, as well as relevant information as required by CoA B9 would be detailed on the following link https://v2.communityanalytics.com.au/rms/sydney-gateway

9.0 Environment Monitoring Program

9.1 Noise Monitoring

During site establishment, monitoring of noise levels will be undertaken at the following frequencies:

- At the commencement of activities to confirm noise and vibration levels are consistent predictions and that the management measures that have been implemented.
- Where a change in methodology, plant or equipment is anticipated to result in a significant increase in noise impact.
- Where appropriate in response to a noise related complaint(s).
- As otherwise required by the CNVIS or Out of Hours Works (OOHW) Protocol.
- Following the implementation of mitigation measures or noise attenuation as a result of exceedance of predicted noise levels.

Noise monitoring locations have been determined within the CNVIS (refer Annexure H).

In accordance with the ICNG the duration and amount of noise monitoring will depend on the scale of the activities and extent of expected noise impacts. Where possible, monitoring will be undertaken at the most affected noise sensitive receiver/s location in proximity to the activities.

Noise monitoring locations will consider factors including:

- The location of previous monitoring sites.
- The proximity of the receiver to a Project worksite.
- The sensitivity of the receiver to noise.
- Background noise levels.
- The expected duration of the impact.
- All environmental noise monitoring will be taken with the following meter settings:
    - Time Constant: Fast (i.e. 125 milliseconds)
    - Frequency Weightings: A-weighting
    - Sample period: 15 minutes.

Environmental noise monitoring will be recorded over 15-minute sample intervals, where every 15 minutes the data is to be processed statistically and stored in memory. The minimum range of noise metrics to be stored in the memory for later retrieval include the following A-weighted noise levels: LA90, LAeq, LA10, LA1 and LA (max). For spot checks of noise intensive plant and equipment, duration of monitoring will depend on the source of noise being monitored.

9.2 Vibration Monitoring

There are no buildings/structures within the minimum working distances established for cosmetic damage associated with the site establishment works. As such, no vibration mitigation and management measures are required.

9.3 Traffic Monitoring

Daily inspections will be conducted to ensure that all traffic arrangements are implemented in accordance with the relevant approved Traffic Management Plans/Traffic Guidance Schemes/Road Occupancy Licenses. All safety critical defects will be rectified as soon as possible. Issues will be appropriately recorded and rectified as they are identified. This would include any cumulative impacts identified from the construction and/or operation of other ancillary facility on Commonwealth land.

10.0 Review and Improvement

10.1 Continuous improvement

Continual improvement is achieved through constant measurement and evaluation, audit and review of the effectiveness of this SEMP. This will be through regular compliance activities, such as inspections, observations and monitoring

Environmental controls will be inspected regularly to ensure their ongoing suitability and effectiveness. Monitoring is carried out to establish pre-construction benchmarks, confirm compliance with the conditions of environmental Approvals, licences and laws and to provide early indication of potential adverse impacts to the environment or community.

10.2 SEMP update and amendment

This plan will be updated to add new major ancillary facilities on NSW land to meet CoA A15 or where a management review identifies aspects that should be amended, this will be undertaken before the next management review, where appropriate.

Any amendments to the SEMP or associated documentation identified as being necessary to avoid non-compliance issues or are in response to key environmental risks will be prioritised to be undertaken as soon as practicable.

10.3 Document approval

This SEMP will be prepared in consultation with the relevant councils and EESG, Heritage Council, DPIE Water, Sydney Water and Pipeline Operators as applicable in accordance with CoA A15.

The SEMP will be endorsed by the ER before it is submitted to the Planning Secretary for approval and submitted one (1) month before the establishment of any major construction ancillary facility(s). Approval of changes to the SEMP will be managed as per Section 10.4 on a case-by-case basis in consultation with the ER and where required will be endorsed by the ER or approved by DPIE.

10.4 Minor Changes

Whilst this document covers ancillary facilities described within the environmental approval documents, it should be noted that distinct project phases may see a need to make minor changes to facilitate constructability, amenity or traffic staging requirements.

This may include:

- Interchangeable use of laydown/storage and car parking areas for the aforementioned purpose.
- Relocation of internal access roads to allow for efficiencies in heavy vehicle/light vehicle movements.
- Alteration to car parking/ container and laydown areas for safe working distances.
- Movement of portable site accommodation/containers for construction staging.
- Environmental constraints and/or in response to community and agency feedback.

Changes would occur where there is a neutral or positive amenity/ environmental impact generally. Where a refinement may result in a potentially negative impact, immediate receivers would be consulted and views taken into consideration.

Where neutral or positive changes occur, it will be captured within the construction documentation (such as an SAP, ESCP) and managed on-site. The Environmental Representative would review changes regularly. Where changes may result in a potentially negative impact, the Environmental Representative would grant approval of refinements.

Where significant impacts would occur, the updated document would be resubmitted for the Secretary's approval.

10.5 Training and awareness

All personnel, including employees, contractors and sub-contractors, are required to complete an induction containing relevant environmental information before they are authorised to work on the Project. The induction addresses general and Project-specific environmental issues including:

- Environmental Policy.
- Sustainability Policy.
- Purpose and objectives of the EMS.
- Requirements of due diligence and duty of care.
- Conditions of environmental licences permits and approvals.
- Potential environmental emergencies on-site and the emergency response procedures.
- Reporting and notification requirements for incidents.
- High-risk activities and associated environmental safeguards, e.g. earthworks, vegetation clearing, night works, operation and maintenance of concrete washouts, and, refuelling and maintenance of plant and equipment.
- Awareness and procedures for handling potential asbestos containing materials and/or contaminated fill material and procedures for unexpected finds.
- Potential and procedures for unexpected heritage finds.

Toolbox talks and pre-start meetings will complement the induction process to raise awareness and educate personnel on issues related to all aspects of construction including environmental issues. The toolbox talks are used to ensure environmental awareness continues throughout construction.

Toolbox talk attendance is mandatory and attendees of toolbox talks are required to sign an attendance form and the records maintained.

10.6 Incident reporting

In the event of an environmental incident, the TfNSW Environmental Incident Classification and Reporting Procedure will be implemented. Whilst the TfNSW procedure would be followed, incidents would also be classified and tracked as per with the John Holland procedure JH-MPR-SQE-010 Incident Management and Investigation.

Environmental incidents that would be or have the potential to be classified as Category 1 under the TfNSW Environmental Incident Classification and Reporting Procedure, will be notified verbally immediately to the TfNSW representative and TfNSW Environmental Manager.

Incident reports will be provided to TfNSW Representative and the ER in accordance with the Procedure, including lessons learnt from each environmental incident and proposed measures to prevent the occurrence of a similar incident. All efforts will be undertaken immediately to avoid and reduce impacts of incidents and suitable controls put in place. Incidents will be closed out as quickly as possible, taking all required action to resolve each environmental incident.

In accordance with CoA A34, the Department will be notified as soon as possible and no later than 24 hours after JHSWJV become aware of an environmental incident. In regards to this notification an environmental incident is defined as an occurrence or set of circumstances that causes or threatens to cause Material harm. This initial notification may be via telephone and will quote the CSSI name and number, along with the time, date, location and nature of the incident. This notification process is in addition to other regulatory incident reporting requirements, including any requirements under the Pollution Incident Response Management Plan (PIRMP), required in accordance with the Project EPL.

Where an incident involves a potential impact to an Aboriginal site, EES, Heritage, and Registered Aboriginal Parties will be notified and their input sought in closing out the incident.

Annexure A - Relevant Condition of Approval and Updated mitigation measures

Conditions of Approval

Table A1: Relevant Conditions of Approval

CoA	Requirement	Reference
A1	The CSSI must be carried out in accordance with the terms of this approval and generally in accordance with the description of the CSSI in the Sydney Gateway Road Project Environmental Impact Statement/Preliminary Draft Major Development Plan (dated November 2019) (the EIS/MDP) and the Sydney Gateway Road Project Response to Submissions Report (dated May 2020).	Section 1.1
A2	The CSSI must be carried out in accordance with all procedures, commitments, preventative actions, performance outcomes and mitigation measures set out in the documents identified in Condition A1 unless otherwise specified in, or required under, this approval.	Section 1.1
A15	Before establishment of a major construction ancillary facility (i.e. excluding minor construction ancillary facility(s) established under Condition A17), the Proponent must prepare a Site Establishment Management Plan which outlines the environmental management practices and procedures to be implemented for the establishment of the construction ancillary facility(s). The Site Establishment Management Plan must be prepared in consultation with the relevant councils and EESG, Heritage Council, DPIE Water, Sydney Water and Pipeline Operators as applicable. The Plan must be submitted to the Planning Secretary for approval one (1) month before the establishment of any major construction ancillary facility(s). The Plan must be endorsed by the ER before it is submitted to the Planning Secretary. The Site Establishment Management Plan must detail the management of the establishment of the major construction ancillary facility(s) and include:	This document
A15(a)	a description of activities to be undertaken during establishment of the facility (including scheduling and duration of works to be undertaken at the site);	Section 5 Table 5
A15(b)	figures illustrating the proposed site layout;	Annexure C
A15(c)	a program for ongoing analysis of the key environmental risks arising from the site establishment activities described in subsection (a) of this condition, including an initial risk assessment undertaken prior to the commencement of site establishment works;	Section 6 Section 9
A15(d)	details of how the site establishment activities described in subsection (a) of this condition will be carried out to: (i) meet the performance outcomes stated in the documents listed in the documents listed in Condition A1, and (ii) manage the risks identified in the risk analysis undertaken in subsection (c) of this condition; and	Table 2 Section 7
A15(e)	a program for monitoring the performance outcomes, including a program for construction noise monitoring consistent with the requirements of Condition C15.	Section 9
	Nothing in this condition prevents the Proponent from preparing individual Site Establishment Management Plans for each major construction ancillary facility.	Noted

CoA	Requirement	Reference
A18	Boundary screening must be erected around all construction ancillary facilities that are adjacent to sensitive receivers for the duration of construction of the CSSI unless otherwise agreed with the relevant Council, and with affected residents, business operators and landowners.	Section 7.5.2 Section 8.10
A19	Boundary screening, that is also a controlled action under the Airports Act 1996, is not required to be erected where the Airport Operator (or CASA or Airservices Australia) has advised the Proponent in writing that approval is required under the Airports Act 1996 and that the approval will not be granted.	Section 7.5.2 Section 8.10
A20	Boundary screening required under Condition A18 of this approval must minimise visual, noise and air quality impacts on adjacent sensitive receivers.	Section 7.5.2 Section 8.10
A24	For the duration of the Work, or as agreed with the Planning Secretary, the approved ER must: (a) receive and respond to communication from the Planning Secretary in relation to the environmental performance of the CSSI; (b) consider and inform the Planning Secretary on matters specified in the terms of this approval; (c) consider and recommend to the Proponent any improvements that may be made to work practices to avoid or minimise adverse impact to the environment and to the community; (d) review documents identified in Conditions A9, A15, C1, CS and C15 and any other documents that are identified by the Planning Secretary, to ensure they are consistent with requirements in or under this approval and if so: (i) make a written statement to this effect before submission of such documents to the Planning Secretary (if those documents are required to be approved by the Planning Secretary); or (ii) make a written statement to this effect before the implementation of such documents (if those documents are required to be submitted to the Planning Secretary / Department for information or are not required to be submitted to the Planning Secretary/Department); (e) regularly monitor the implementation of the documents listed in Conditions A9, A15, C1, CS and C15 to ensure implementation is being carried out in accordance with the document and the terms of this approval; (f) as may be requested by the Planning Secretary, help plan, attend or undertake audits of the CSSI commissioned by the Department including scoping audits, programming audits, briefings and site visits, but not independent environmental audits required under Condition A29 of this approval; (g) as may be requested by the Planning Secretary, assist the Department in the resolution of community complaints; (h) assess the impacts of minor construction ancillary facilities as required by Condition A17 of this approval; (i) consider any minor amendments to be made to the CEMP, CEMP Sub-plans, Construction Monitoring Programs and Site Establishment Plans that comprise updating or are of an administrative nature, and are consistent with the terms of this approval and the CEMP, CEMP Sub-plans and Construction Monitoring Programs approved by the Planning Secretary and, if satisfied such amendments are necessary, approve the amendment. This does not include any modifications to the terms of this approval; and (j) prepare and submit to the Planning Secretary and EESG, EPA, Heritage Council, OPIE Water, where requested by those agencies, for information, an Environmental Representative Monthly Report providing the information set out in the Environmental Representative Protocol under the heading "Environmental Representative Monthly Reports." The Environmental Representative Monthly Report must be submitted within seven (7) days following the end of each month for the duration of the ER's engagement for the CSSI.	Section 10

CoA	Requirement	Reference
A34	The Department must be notified as soon as possible and no later than 24 hours after the Proponent becomes aware of an incident. This initial advice can be via telephone and must identify the CSSI (including the name and application number), time, date, location and nature of the incident	Section 10
A35	Subsequent written notification must be given and reports submitted to the Planning Secretary in accordance with the requirements set out in Appendix A, unless otherwise approved by the Planning Secretary.	Section 10
A36	Signage on fencing or hoardings surrounding construction ancillary facilities must include the CSSI name and application number.	Section 8.10
B7	A **Complaints Management System** must be prepared and implemented before the commencement of any Work and maintained for the duration of construction and for a minimum for 12 months following completion of construction of the CSSI.	Section 8.11
B8	The following information must be available to facilitate community enquiries and manage complaints one (1) month before the commencement of Work and for 12 months following the completion of construction: (a) a 24- hour telephone number for the registration of complaints and enquiries about the CSSI; (b) a postal address to which written complaints and enquires may be sent; (c) an email address to which electronic complaints and enquiries may be transmitted; and (d) a mediation system for complaints unable to be resolved. This information must be accessible to all in the community regardless of age, ethnicity, disability or literacy level.	Section 8.11
B12	A website or webpage providing information in relation to the CSSI must be established before commencement of Work and maintained for the duration of construction, and for a minimum of 24 months following the completion of construction. The following up-to-date information (excluding confidential, private, commercial information or any other information that the Planning Secretary has approved to be excluded) must be published and maintained on the website or dedicated pages including: (a) information on the current implementation status of the CSSI; (b) a copy of the documents listed in Condition A1 of this approval, and any documentation relating to any modifications made to the CSSI or the terms of this approval; (c) a copy of this approval in its original form, a current consolidated copy of this approval (that is, including any approved modifications to its terms), and copies of any approval granted by the Minister to a modification of the terms of this approval; (d) a copy of each statutory approval, licence or permit required and obtained in relation to the CSSI; (e) a current copy of the final version of each document required under the terms of this approval; and (f) a copy of the audit reports required under Condition A29 of this approval. Where the information/ document relates to a particular Work or is required to be implemented, it must be published before the commencement of the relevant Work to which it relates or before its implementation.	Section 8.11

CoA	Requirement	Reference
E14	Work must only be undertaken during the following hours: (a) 7:00 am to 6:00 pm Mondays to Fridays, inclusive; (b) 8:00 am to 6:00 pm Saturdays; and (c) at no time on Sundays or public holidays.	Section 5.4
E15	Except as permitted by an EPL or Out-of-Hours Work Protocol (where an EPL does not apply), highly noise intensive works that result in an exceedance of the applicable NML at the same receiver must only be undertaken: (a) between the hours of 8:00 am to 6:00 pm Monday to Friday; (b) between the hours of 8:00 am to 1:00 pm Saturday; and (c) if continuously, then not exceeding three (3) hours, with a minimum cessation of work of not less than one (1) hour. For the purposes of this condition, 'continuously' includes any period during which there is less than one (1) hour between ceasing and recommencing any of the highly noise intensive works.	Section 5.4
E16	Notwithstanding Conditions E14 and E15, Work may be undertaken outside the hours specified in the following circumstances: (a) for the delivery of materials required by the NSW Police Force or other appropriate authority for safety reasons; or (b) where it is required in an emergency to avoid injury or the loss of life, to avoid damage or loss of property or to prevent environmental harm; or (c) where the relevant road authority has advised the Proponent in writing that carrying out Work during the hours specified in Condition E14 would result in a high risk to road network operational performance and a road occupancy licence will not be issued during the hours specified in Condition E14; or (d) where an approval is required for a controlled activity in accordance with the Airports Act 1996 and the approved time is outside the hours specified in Condition E14; or (e) where the rail authority has advised the Proponent in writing that a Rail Possession is required and approval has been given to complete Work during the rail possession; or (f) where different construction hours are permitted or required under an EPL in force in respect of the CSSI; or (g) where an EPL is not required or in force, Work approved through an Out-of-Hours Work Protocol developed in accordance with Condition E18; or (h) construction that causes: (i) LAeq11s m;n,te) noise levels no more than 5 dB(A) above the rating background level at any residence in accordance with the Interim Construction Noise Guideline (DECC, 2009), and (ii) LAeq11s m;nme) noise levels no more than the 'Noise affected' noise management levels specified in Table 3 of the Interim Construction Noise Guideline (DECC, 2009) at other sensitive land uses, and (iii) continuous or impulsive vibration values, measured at the most affected residence are no more than the preferred values for human exposure to vibration, specified in Table 2.2 of Assessing Vibration: a technical guideline (DEC, 2006), and (iv) intermittent vibration values measured at the most affected residence are no more than the preferred values for human exposure to vibration, specified in Table 2.4 of Assessing Vibration: a technical guideline (DEC, 2006); or	Section 5.4

CoA	Requirement	Reference
	(i) where negotiated agreements with directly affected residents and sensitive land uses have been reached. Note: Section 5.24(1)(e) of the EP&A Act requires that an EPL be substantially consistent with this approval.	
E17	On becoming aware of the need for emergency Work in accordance with **Condition E16(b),** the Proponent must notify the **ER,** the Planning Secretary and the **EPA** of the reasons for such work. The Proponent must use best endeavours to notify all noise and/or vibration affected sensitive receivers of the likely impact and duration of those Works.	Section 5.4
E18	An Out-of-Hours Work Protocol must be prepared to identify a process for the consideration, management and approval of Work outside the hours defined in Condition E14 and that is not subject to an EPL. The Protocol must be approved by the Planning Secretary before commencement of the Work. The Protocol must identify Work activities in terms of their risk of adverse impacts on sensitive receivers and include: (d) a process for the consideration of out-of-hours Work against the relevant noise management level (NML) and vibration criteria, including the determination of low, medium and high-risk activities; (e) a process for selecting and implementing mitigation measures for residual impacts in consultation with the community at each affected location, including respite periods consistent with the requirements of Condition E19 and Condition E20. The measures must take into account the predicted noise and vibration levels and the likely frequency and duration that sensitive receivers would be exposed to residual impacts, including the number of noise-awakening events; (f) procedures to facilitate the coordination of out-of-hours Work, including those approved by an EPL or undertaken by a third party, to ensure appropriate respite is provided; (g) an approval process that considers the risks, proposed mitigation, management and coordination of Work, including where - (i) the ER reviews all proposed out-of-hours Works and confirms their risk levels, (ii) low risk activities can be approved by the ER, and (iii) medium and high-risk activities are approved by the Planning Secretary; and (h) notification arrangements for affected receivers and the EPA for all approved out-of-hours Work and notification to the Planning Secretary of approved low risk out-of-hours Work.	Section 5.4
E19	In order to undertake Work outside hours specified in Condition E14, the Proponent must identify appropriate respite periods for out-of-hours Work in consultation with the community likely to exceed the NML and vibration criteria in Condition E23(a) and (b) at each affected location on at least a three (3) monthly basis. This consultation must include (but not be limited to) providing the community with: (a) a schedule of likely out-of-hours work for a period no less than three (3) months; (b) a description of the potential Work, location and duration; (c) the noise characteristics and likely noise levels of the Work; and (d) likely mitigation and management measures to be implemented. The outcomes of the community consultation, the identified respite periods and the scheduling of the likely out-of-hour Work must be provided to the EPA, ER and Planning Secretary for information within two (2) week of undertaking the community consultation.	Section 5.4

CoA	Requirement	Reference
	Note: Respite periods can be any combination of days or hours where out-of-hours Work would not be more than 5 dB(A) above the rating background level at any residence.	
E20	Additional mitigation measures such as temporary alternative accommodation or other agreed mitigation measures, must be offered/ made available to residents affected by out-of-hours Work (including where utility works are being undertaken for the CSSI) where the construction noise levels, between: (a) 10:00 pm and 7:00 am, Monday to Friday; (b) 10:00 pm Saturday to 8:00 am Sunday; and (c) 6:00 pm Sunday and public holidays to 7:00 am the following day unless that day is Saturday then to 8:00 am, are predicted to exceed the NML by 25 dB(A) or are greater than 75 dBA (LAeq(15 minute), whichever is the lesser and the impact is planned to occur for more than two (2) nights over a seven (7) day rolling period. The NML must be reduced by 5 dB where the noise contains annoying characteristics and increased by 10 dB if the property has received at-property noise treatment. The noise levels and duration requirements identified in this condition may be changed through an EPL applying to the CSSI.	Section 5.4
E21	All Work undertaken for the delivery of the CSSI, including those undertaken by third parties (such as utility relocations), must be coordinated to ensure respite periods are provided. The Proponent must: (a) reschedule any Work to provide respite to impacted residential receivers so that the respite is achieved in accordance with Conditions E19 and E20; or (b) consider the provision of alternative respite or mitigation to impacted noise sensitive receivers; and (c) provide documentary evidence to the ER in support of any decision made by the Proponent in relation to respite or mitigation.	CNVIS
E22	Noise and vibration generating Work in the vicinity of potentially-affected community, religious, educational institutions and noise and vibration-sensitive businesses and critical working areas (such as flight simulators, theatres, laboratories and operating theatres) resulting in noise levels above the NMLs or vibration levels above the relevant criteria must not be timetabled within sensitive periods, unless other reasonable arrangements with the affected institutions are made at no cost to the affected institution.	CNVIS
E23	Mitigation measures must be implemented with the aim of achieving the following construction noise management levels and vibration criteria: (a) construction 'Noise affected' noise management levels established using the Interim Construction Noise Guideline (DECC, 2009); (b) vibration criteria established using the Assessing vibration: a technical guideline (DEC, 2006) (for human exposure); (c) Australian Standard AS 2187.2 2006 "Explosives - Storage and Use - Use of Explosives"; (d) BS 7385 Part 2-1993 "Evaluation and measurement for vibration in buildings Part 2" as they are "applicable to Australian conditions"; and (e) the vibration limits set out in the German Standard DIN 4150-3: Structural Vibration- effects of vibration on structures (for structural damage). Any Work identified as exceeding the noise management levels and/or vibration criteria must be managed in accordance with the Noise and	CNVIS

CoA	Requirement	Reference
	Vibration CEMP Sub-plan. Note: The Interim Construction Noise Guideline identifies 'particularly annoying' activities that require the addition of 5 dB(A) to the predicted level before comparing to the construction Noise Management Level.	
E43	All reasonably practicable erosion and sediment controls must be installed and appropriately maintained to minimise water pollution. When implementing such controls, any relevant guidance in the *Managing Urban Stormwater: Soils and Construction* series must be considered.	Section 8.4
E48	An **Unexpected Contaminated Land and Asbestos Finds Procedure** must be prepared before the commencement of Work and must be followed should unexpected contaminated land or asbestos (or suspected contaminated land or asbestos) be excavated or otherwise discovered during construction.	Annexure E
E49	The **Unexpected Contaminated Land and Asbestos Finds Procedure** must be implemented throughout the duration of Work.	Annexure E
E52	Heavy vehicles used for spoil haulage and concrete deliveries associated with the CSSI are not permitted to use local roads within one (1) kilometre of works and construction ancillary facilities, unless approved by the Planning Secretary. This includes movements associated with waiting to access construction ancillary facilities and work areas. All local roads approved for use by the Planning Secretary must be identified in the **Traffic and Transport CEMP Sub-plan.**	Section 7.1 Section 8.5
E53	All requests to the Planning Secretary for the approval of spoil haulage and concrete delivery vehicles to use local roads must include: (a) a swept path analysis; (b) demonstrate that the use of local roads will not compromise the safety of pedestrians and cyclists and have minimal amenity impacts on residents residing along the local road(s); (c) provide details as to the date of completion of the road dilapidation surveys for the subject local roads; and (d) describe the measures that will be implemented to avoid where practicable the use of local roads past schools, aged care facilities and childcare facilities during their peak times of operation.	Section 7.1 Section 8.5
E54	Before any local road is used by a heavy vehicle for the purposes of construction of the CSSI, a **Road Dilapidation Report** must be prepared for the road. A copy of the **Road Dilapidation Report** must be provided to the relevant council within three weeks of completion of the survey and at least two weeks before the road is used by heavy vehicles associated with the construction of the CSSI.	Section 7.1 Section 8.5
E56	Construction vehicles (including staff vehicles) associated with the CSSI must be managed to minimise parking, idling and queuing on public roads.	MMTT3, MMTT4
E64	The CSSI must be constructed in a manner that minimises visual impacts of construction sites,	Section 7.5
E65	The CSSI must be constructed and operated with the objective of minimising light spillage to surrounding properties and potential distraction for pilots. All lighting associated with the construction and operation of the CSSI must be consistent with the requirements of *ASINZS 4282:2019*	Section 8.9

CoA	Requirement	Reference
	Control of the obtrusive effects of outdoor lighting, relevant Australian Standards in the series *ASINZS 1158 - Lighting for Roads and Public Spaces* and *NASF Guideline E: Managing the Risk of Distractions to Pilots from Lighting in the Vicinity of Airports.* Additionally, the Proponent must provide mitigation measures to manage any residual night lighting impacts to protect properties adjoining or adjacent to the CSSI, in consultation with affected landowners.	
E87	Waste generated during construction and operation must be dealt with in accordance with the following priorities: (a) waste generation must be avoided and where avoidance is not reasonably practicable, waste generation must be reduced; (b) where avoiding. or reducing waste is not possible, waste must be re-used, recycled, or recovered; and (c) where re-using, recycling or recovering waste is not possible, waste must be treated or disposed of.	Section 7.14

Relevant Updated mitigation measures

Table A2: Relevant Updated mitigation measures

Impact	Ref. No.	Mitigation Measure	Reference
Traffic and Transport			
Potential for traffic, transport and access impacts during construction	TT3	The communications strategy (measure SE3) will include a mechanism to inform the community of the dates and durations of specific phases within the Project, including information about specific lane and road closures and the times of day and night when works will be carried out.	Annexure B - MMTT10
Impacts on road network performance (delays) and safety	TT7	Where reasonable and feasible, work areas, activities and construction access arrangements will be modified to address any traffic flow issues identified by key stakeholders, including the Sydney Coordination Office, Sydney Airport Corporation and the Transport Management Centre.	Annexure B - MMTT11
Impacts on road network performance (delays) and safety	TT8	A mechanism will be provided for the community to report incidents and delays, such as a Project phone number. The contact mechanism will be communicated in accordance with the Project's communication strategy (measure SE3).	Annexure B – MMTT11
Property, cyclist and pedestrian access	TT11	Access to properties, including residences, businesses and community infrastructure, will be maintained. Where disruption to access cannot be avoided, consultation will be undertaken with the owners and occupants of affected properties, to confirm their access requirements and to determine alternative arrangements.	Annexure B – MMTT6
Property, cyclist and pedestrian access	TT12	Safe pedestrian and cyclist access will be maintained around or through work areas. Where disruption to access cannot be avoided, alternative routes that comply with relevant accessibility standards and guidelines will be provided, signposted and communicated.	Annexure B – MMTT1, MML3
Impacts of construction haulage vehicles	TT15	Construction haulage vehicles will be managed to: • Adhere to the nominated haulage routes and speeds identified in the Construction Traffic and Access Management Plan and posted speed limits	Annexure B – MMTT9, MMTT10

Impact	Ref. No.	Mitigation Measure	Reference
		• Minimise idling and queuing on public roads • Minimise movement of vehicles during peak periods.	
Noise and Vibration			
Managing the potential for noise and vibration impacts during construction	NV6	Location and activity specific noise and vibration impact assessments will be undertaken prior to those works (as a minimum): • With the potential to result in noise levels above 75 dBA at any receiver • That need to occur outside standard construction hours and are likely to result in noise levels greater than the relevant noise management levels • With the potential to exceed relevant performance criteria for vibration. The assessments will confirm predicted impacts at relevant receivers in the vicinity of the activities to assist with the selection of appropriate management measures. Monitoring will be carried out at the start of new noise and vibration intensive activities to confirm that actual levels are consistent with the predictions.	Annexure B – MMNV1
Construction management and scheduling	NV10	Noisy work and vibration intensive activities (those activities that exceed the vibration criteria) will be scheduled during standard construction hours as far as possible. Works or activities that cannot be undertaken during standard construction hours will be scheduled as early as possible during the evening and/or night-time periods. Respite measures will be implemented for noisy work and vibration intensive activities in a manner consistent with the Roads and Maritime's Construction Noise and Vibration Guideline (Roads and Maritime, 2016).	CoA E14, CoA E15
Construction management and scheduling	NV11	Hoarding, or other shielding structures, will be used for construction compounds and fixed works areas where construction noise would exceed relevant noise management levels at nearby sensitive receivers. The barriers should be of solid construction with minimal gaps.	Annexure B – MMNV1
Biodiversity			
Tree protection during construction	LV11	Trees to be retained will be protected prior to the commencement of construction in accordance with AS4970-2009 Protection of trees on development sites and the Project's tree management strategy. Any tree pruning will be undertaken in accordance with the Project's tree management strategy and carried out prepared by a qualified arborist.	Annexure B – MMB3
Managing the loss of trees	LV4	The need to remove trees within the Project site will be avoided where practicable. For those trees that cannot be reasonably avoided, a tree management strategy will be developed, including measures to offset the loss of trees and achieve a net increase in tree canopy. The final location of replacement trees will be confirmed in consultation with Inner West Council and Sydney Airport Corporation. The strategy will also include on-site processes and protective measures to ensure trees identified for retention are appropriately protected during construction.	Annexure B – MMB3

Impact	Ref. No.	Mitigation Measure	Reference
Airport operations			
Construction lighting	AS11	Construction lighting will be selected and located to meet Sydney Airport's restricted lighting zone requirements. For locations where it is not possible to achieve the required intensity levels, works requiring lighting will be undertaken in accordance with the requirements of Sydney Airport Corporation, which may involve restricting the timing of works to outside Sydney Airport's operational hours. Construction lighting will comply with section 9.21 of the Manual of Standards (CASA 2017) and the National Airports Safeguarding Framework (Guideline E).	Annexure B – MMU2
Temporary intrusions of Sydney Airport's prescribed airspace	AS12	Construction planning will ensure that intrusions of Sydney Airport's prescribed airspace are minimised as far as practicable. Where temporary intrusions of the prescribed airspace cannot be avoided, works likely to result in intrusions will be undertaken in accordance with the requirements of Sydney Airport Corporation (for short-term works less than three months) or the Department of Infrastructure, Transport, Cities and Regional Development and Communications for long-term works (more than three months) and any controlled activity approvals for these works. This will include timing works to avoid intrusions during Sydney Airport's operational hours.	Annexure B – MMG6
Air Quality			
Impacts on air quality as a result of demolition	AQ6	Demolition activities, including removal of hazardous building materials, will be planned and carried out in a manner that minimises the potential for dust generation.	Annexure B – MMAQ1
Contamination and soils			
Demolition of structures containing hazardous substances	CS8	Hazardous materials surveys will be undertaken to inform construction planning, including demolition activities and utility adjustments.	Annexure B – MMC3
Works at the former Tempe landfill	CS13	The potential for settlement will be considered as part of the siting and layout of construction compounds and work areas in the former Tempe landfill. Where required, ground treatment (e.g. foundation layers or sheet piling) will be provided to minimise this risk.	Annexure B – MMC4
Stockpile management and handling	CS17	Storage and containment systems for the stockpiling of contaminated material during construction will be designed to be impervious to the materials stored, resistant to fire (where required), covered to prevent contact with rainfall, and managed and maintained to prevent any release of liquids and contaminated run- off to stormwater drains, waters and land.	Annexure B – MMC1
Management of previously unidentified contaminated material	CS18	The discovery of previously unidentified contaminated material will be managed in accordance with an unexpected contaminated finds procedure, as outlined in the Guideline for the Management of Contamination (Roads and Maritime, 2013b) and detailed in the CEMP. Awareness training will be provided for all on-site staff to assist in the identification of potentially	Annexure B – MMC2

Impact	Ref. No.	Mitigation Measure	Reference
		contaminated material as per the unexpected contaminated finds procedure. In the event that unexpected indicators of contamination are encountered during construction (such as odours or visually contaminated materials), work in the area will cease, and the finds will be managed in accordance with the unexpected contaminated finds procedure.	
PFAS impacted soil and groundwater	CS19	PFAS contaminated materials will be managed in accordance with the risk-based framework presented in the PFAS National Environmental Management Plan (HEPA, 2018). If soil and/or water containing PFAS is proposed for reuse, the proposed reuse must not result in an unacceptable or increased risk to human health and/or the environment. A health and environmental risk assessment and consultation with the NSW EPA (and the Airport Environment Officer where the works are on Sydney Airport land) will be required before any reuse of PFAS contaminated soil and/or water.	Annexure B – MMC5
Flooding			
Potential flood impacts on ancillary construction facilities	HF8	As a minimum, site facilities will be located outside high flood hazard areas based on a one per cent AEP flood. For site facilities located within the floodplain, the flood mitigation strategy will identify how risks to personal safety and damage to construction facilities and equipment will be managed.	Annexure B – MMF1
Surface water			
Management of surface water runoff within the former Tempe landfill	SW11	The management of surface water runoff for works within the former Tempe landfill will adopt the following principles: • Isolate exposed waste from surface water runoff from other areas • Minimise contact between rainfall and surface water runoff and exposed waste • Capture and store (temporarily) surface water runoff from areas of exposed waste (leachate) • Size leachate storage(s) based on updated water balance modelling to reflect the proposed construction methodology and to minimise the risk of the capacity being exceeded..	Annexure B – MMC6
Non-Aboriginal heritage			
Unexpected finds	NAH12	Any items of potential heritage conservation significance or human remains discovered during construction will be managed in accordance with the *Standard Management Procedure Unexpected Heritage Items* (Roads and Maritime, 2015e).	Annexure B – MMH1
Aboriginal heritage			
Unexpected finds	AH6	If suspected Aboriginal heritage items or human remains are uncovered during construction, they will be managed in accordance with the *Standard Management Procedure: Unexpected Heritage Items* (Roads and Maritime Services, 2015e).	Annexure B – MMH2
Land use and property			

Impact	Ref. No.	Mitigation Measure	Reference
Damage to properties and infrastructure	LU8	Condition surveys for structures and infrastructure at potential risk of damage due to construction of the Project will be undertaken prior to commencement of the proposed activity. Rectification measures will be implemented during construction to address any damage caused by the Project. A final condition assessment will be carried out at the completion of construction detailing recommendations for any additional rectification required.	Annexure B – MML4
Socio-economic			
Potential social and community impacts during construction	SE3	A communications strategy will be prepared to detail the process of communicating and engaging with the community and stakeholders in the lead up to, and during, construction. It will ensure that: • The community and stakeholders have a high level of awareness and forewarning of all processes and activities • Accurate and accessible information is made available • A timely response is given to issues and concerns raised by the community • Feedback from the community is encouraged • Opportunities for input are provided. In relation to the potential for socio-economic impacts, the strategy will include: • Communication with potentially affected residents, other community members, businesses and other key stakeholders to provide information about the Project, and the likely nature, extent and duration of amenity and access changes during construction • Protocols to identify and engage with vulnerable persons that might be affected by construction • Protocols for communicating information about potential access delays in and around Sydney Airport and other relevant Project information.	Annexure B – MMSE1
Impacts on community facilities and infrastructure	SE6	Access to community facilities and infrastructure will be maintained during construction. Where alternative access arrangements need to be made, these will be developed in consultation with relevant service providers and communicated to users. Any changes to access arrangements will be managed in accordance with the Construction Traffic and Access Management Plan.	Annexure B – MML3
Landscape character and visual amenity			
Visual impacts during construction	LV8	The design and maintenance of construction compound hoardings will aim to minimise visual amenity and landscape character impacts.	Annexure B – MMU1
Visual impacts during construction	LV9	The selection of materials and colours for hoardings will aim to minimise their visual prominence.	Annexure B – MMU1

Impact	Ref. No.	Mitigation Measure	Reference
Visual impacts during construction	LV10	Lighting of work areas, compounds, and work sites will be oriented to minimise glare and light spill impact on adjacent receivers.	Annexure B – MMU2
Tree protection during construction	LV11	Trees to be retained will be protected prior to the commencement of construction in accordance with AS4970-2009 Protection of trees on development sites and the Project's tree management strategy. Any tree pruning will be undertaken in accordance with the Project's tree management strategy and carried out prepared by a qualified arborist.	Annexure B – MMB3
Health, safety and hazards			
Spill response	HS1	A spill response procedure will be developed as part of the Project's incident management protocols. The procedure and incident management protocols will detail processes, responsibilities and measures to manage hazardous substances and dangerous goods, including storage, handling and spill response, in accordance with legislative requirements.	Annexure B – MMHSH1
Transport of dangerous goods and hazardous materials	HS6	The transport of dangerous goods will be undertaken in accordance with the Dangerous Goods (Road and Rail Transport) Regulation 2009 and the *Australian Code for the Transport of Dangerous Goods by Road & Rail* (National Transport Commission, 2017).	Annexure B – MMHSH2
Waste management			
Construction waste and spoil management	WM3	Construction waste will be minimised by accurately calculating materials brought to the site and limiting materials packaging where possible.	Annexure B – MMW1
Construction waste and spoil management	WM4	All waste disposal will be in accordance with the *Waste Classification Guidelines* (NSW EPA, 2014).	Annexure B – MMW2
Attraction of wildlife at the former Tempe landfill	WM5	The following measures would be implemented during works at the former Tempe landfill to avoid attracting wildlife: • No excavation is proposed and this will avoid exposing waste • Minimising the size and area of any exposed stockpiles • Ensuring material that has been disturbed, uncapped, or temporarily stockpiled is suitably covered at the end of each day.	Annexure B – MMW3
Management of unexpected waste materials	WM6	Suitable areas will be identified to allow for contingency management of unexpected waste materials, including contaminated materials. Areas will be hardstand or lined areas that are appropriately stabilised and bunded, with sufficient space for stockpile storage.	Annexure B – MMW4

Annexure B - Environmental Safeguards

Project Wide Environmental Safeguards

This section contains general requirements that will be applied to all major ancillary facilities established under this Site Establishment Management Plan (SEMP). Safeguards from this table will be incorporated into Work Packs or environmental work method statements (EWMS). Site personnel will be required to undertake all works in accordance with the safeguards identified in the relevant documents.

EM – Environment, Sustainability and Approvals Manager, CM – Construction Manager, EA – Environment Advisor, SS – Site Supervisor, PE – Project Engineer, TM – Traffic Manager, CRM – Community Relations Manager, SM - Safety Manager

Table B1: Project wide environmental safeguards

No.	Environmental safeguards	Responsibility	Timing	Reference
General Requirements				
MMG1	All licences, permits and approvals will be obtained as required by law and maintained as required throughout the establishment of the ancillary facilities.	EM	Prior to Site Establishment/ Site Establishment	CoA A1
MMG2	Ancillary facilities would be established in accordance with this SEMP.	EM/CM	Site Establishment	CoA A15
MMG3	Training will be provided to all Project personnel, including relevant sub-contractors with a focus on: • Ancillary facility management • Air quality control • Noise and vibration • Flora and Fauna • Non-Aboriginal and Aboriginal heritage The Project will meet these requirements through inductions, toolboxes and targeted training.	EA/SS	Prior to Site Establishment/Site Establishment	G36, G38 Section 7.5
MMG4	All complaints, including those related to property damage, are managed (including recording and response) in accordance with the Construction Complaints Management System and the Community Communication Strategy. The following are available for community enquires and complaints: • A toll-free 24-hour telephone number • A postal address • An email address • A mediation system for complaints unable to be resolved	CRM	Prior to Site Establishment/Site Establishment	CoA B7, B8, G36

No.	Environmental safeguards	Responsibility	Timing	Reference
	• A mechanism for community members to make enquiries in common community languages of the area. The telephone number, postal and email addresses, as well as relevant Project documents, are provided on distributed Project documentation (e.g. newsletters or notification letters) and is available on the Project website. Community complaints will be recorded and actioned in accordance with the Construction Complaints Management System.			
MMG5	A weekly environmental inspection checklist will be completed and will record ancillary facility management related issues.	EM	Site Establishment	Good practice
MMG6	Construction planning will ensure that intrusions of Sydney Airport's prescribed airspace are minimised as far as practicable. Where temporary intrusions of the prescribed airspace cannot be avoided, works likely to result in intrusions will be undertaken in accordance with the requirements of Sydney Airport Corporation (for short-term works less than three months) or the Department of Infrastructure, Transport, Cities and Regional Development and Communications for long-term works (more than three months) and any controlled activity approvals for these works. This will include timing works to avoid intrusions during Sydney Airport's operational hours.	EM/CM/PE/SS	Prior to Site Establishment/Site Establishment	AS12
Traffic and Transport				
MMTT1	Provide safe routes and minimise impacts for pedestrians and cyclists during site establishment works.	All	Site Establishment	CoA E53, UMM TT12
MMTT2	Limit vehicle movements to designated entries and exits and haulage routes. Site exits will be fitted with hardstand material or other appropriate measures to limit the amount of material transported off-site (where required).	CM/SS	Site Establishment	UMM TT11
MMTT3	Minimise construction vehicle parking on public roads by parking on site where practicable.	CM/SS	Site Establishment	CoA E56
MMTT4	The queuing and idling of construction vehicles in	CM/SS	Site Establishment	CoA E56

No.	Environmental safeguards	Responsibility	Timing	Reference
	residential streets will be minimised through on-site parking and queuing arrangements			
MMTT5	New/modified local road, parking, pedestrian and cycle infrastructure shall be designed to meet relevant design, engineering and safety guidelines.	CM	Prior to Site Establishment/ Site Establishment	CoA E59
MMTT6	A Traffic Control Plan (TCP) should be developed and implemented for each ancillary facility/construction compound which requires direct access/egress onto the local/arterial road network.	TM/PE/CM	Prior to Site Establishment/ Site Establishment	Traffic Control at Worksites Manual UMM TT7,
MMTT7	Road dilapidation reports to be prepared for potentially impacted road infrastructure. Mechanisms to repair damage to the road networks caused by the Project will be identified.	TM/PE/CM	Prior to Site Establishment/ Site Establishment	UMM TT18, CoAE54
MMTT8	Drivers will be advised of designated vehicle routes, parking locations, acceptable delivery hours specific to the site and other relevant practices (i.e. minimising the use of engine brakes, no compression brakes, and no extended periods of engine idling).	SS/PE/EA	Prior to Site Establishment/ Site Establishment	UMM TT15
MMTT9	Construction-related transport movements will be scheduled to avoid peak traffic periods and minimise Project related congestion, where possible.	CM/PE/SS/TM	Site Establishment	UMM TT15
MMTT10	The communications strategy (measure SE3) will include a mechanism to inform the community of the dates and durations of specific phases within the Project, including information about specific lane and road closures and the times of day and night when works will be carried out.	CM/PE/SS/TM	Prior to Site Establishment/ Site Establishment	UMM TT3
MMTT11	A mechanism will be provided for the community to report incidents and delays, such as a Project phone number. The contact mechanism will be communicated in accordance with the Project's communication strategy (measure SE3).	CM/PE/SS/TM	Prior to Site Establishment/ Site Establishment	UMM TT8
Air Quality				
MMAQ1	Where reasonable and feasible, appropriate control methods will be implemented to minimise dust emissions from the Project site especially on high wind	EA/SS	Site Establishment	CoA E1, UMM AQ6

No.	Environmental safeguards	Responsibility	Timing	Reference
	days.			
MMAQ2	Construction activities will be modified, reduced or controlled during high or unfavourable wind conditions if they have a potential to increase the generation or emission of dust.	EA/SS	Site Establishment	Good practice
MMAQ3	Regular site inspections will be conducted to monitor for potential dust issues. Required actions and ongoing issues from the site inspection will be recorded and actioned appropriately within agreed timeframes by relevant Project personnel.	EM/EA/SS	Site Establishment	Good practice
MMAQ4	Control measures including water carts, sprinklers, sprays/suppressants, dust screens or the application of geo-binding agents will be utilised where applicable to control dust and/or odour emissions. The frequency of use will be modified to accommodate prevailing conditions.	EA/SS	Site Establishment	Good practice
MMAQ5	Access roads within Project sites will be maintained and managed to reduce dust generation	EA/SS	Site Establishment	Good practice
MMAQ6	Ensure that stockpiles are of materials with the potential to result in dust emissions are adequately protected and managed to reduce potential dust generation and cross contamination	EA/SS	Site Establishment	Good practice
MMAQ7	Dust suppression techniques will be used when cutting materials such as concrete or bricks will be undertaken in a manner that minimises the generation of dust, such as the wetting of the cutting face.	SS	Site Establishment	Good practice
MMAQ8	All sealed surfaces within sites and site accesses will be managed to reduce dust generation and sediment tracking onto roads	EM/CM	Establishment	Good practice
MMAQ9	All construction vehicles and plant will be inspected regularly and maintained to ensure that they comply with relevant emission standards.	SS/PE	Site Establishment	Good practice
MMAQ10	Engine idling will be minimised when plant is stationary, and plant will be switched off when not in use to reduce emissions.	SS/PE	Site Establishment	Good practice

No.	Environmental safeguards	Responsibility	Timing	Reference
MMAQ11	The use of mains electricity will be favoured over diesel or petrol-powered generators where practicable to reduce site emissions.	CM	Site Establishment	Good practice
MMAQ12	All loaded unsuitable fill material haulage trucks and other Project-related heavy vehicles carrying materials with the potential to result in dust generation will be covered to prevent dust emissions during transport in accordance with relevant road regulations.	SS/PE	Site Establishment	Good practice
MMAQ13	Demolition activities will be planned and carried out to minimise the potential for dust generation.	SS/PE	Prior to Site Establishment / Site Establishment	UMM AQ6
MMAQ14	Adequate dust suppression will be applied during all demolition works.	CM/SS/PE	Site Establishment	UMM AQ6
MMAQ15	All potentially hazardous material will be identified and removed from buildings in an appropriate manner prior to the commencement of and / or progressively during demolition and in accordance with all relevant codes of practice.	CM/SS/PE/SM	Site Establishment	UMM AQ6
MMAQ16	Exposed soils will be temporarily stabilised during weather conditions conducive to dust generation and prior to extended periods of inactivity to prevent dust generation.	CM/SS/PE	Site Establishment	G38
Noise and Vibration				
MMNV1	Reasonable and feasible noise mitigation measures (such as those listed within this table and those within the CNVIS) will be implemented with the aim of achieving the noise and vibration objectives specified in the CoA.	CM/EM/SS	Prior to Site Establishment/ Site Establishment	CoA A15, CoA C15
MMNV2	Monitoring will be carried out at the commencement of activities for which a location and activity specific noise and vibration impact assessment has been prepared to confirm that actual noise and vibration levels are consistent with noise and vibration impact predictions and that the management measures that have been implemented are appropriate	SS/EA	Site Establishment	CoA C15, UMM NV6, NV12, NV13
MMNV3	The establishment of approved ancillary	EM/CM	Site Establishment	CoA E14,

No.	Environmental safeguards	Responsibility	Timing	Reference
	facilities will be undertaken during the following standard construction hours: ▪ 7am to 6pm Mondays to Fridays, inclusive ▪ 8am to 6pm Saturdays ▪ At no time on Sundays or public holidays. Unless otherwise assessed and approved in accordance with the Project Out of Hours Works Protocol, EPL or CoA E16.			CoA E15
MMNV4	Site access and egress points will be located as far as feasible and reasonable from noise sensitive receivers.	CM/EM	Site Establishment	Best practice
MMNV5	Neighbours, potentially noise affected sensitive receivers, local councils, EPA and key stakeholders will be notified of planned site establishment works at least five days and no longer than 10 days prior to commencement. Information provided will include: ▪ The hours establishment works will be carried out ▪ The types of activities to be undertaken ▪ The location of activities. Details of the community information line and how to make an enquiry and/or complaint will be included in the notifications.	EM/CRM/CM	Site Establishment	G36
MMNV6	Where emergency works (those required to avoid injury or the loss of life, to avoid damage to property or to prevent environmental harm) are required to be undertaken outside of standard construction hours, the Environmental Representative and the EPA will be informed of the need for the works. In addition, noise and/or vibration affected receivers will also be informed of the likely impact and duration of the works where practicable.	EM/CM	Site Establishment	CoA E17
MMNV7	Highly noise intensive works that result in an exceedance of the applicable noise management levels at the same receiver must only be undertaken except as permitted by an EPL in accordance with CoA E15:	EM/CRM/CM	Site Establishment	CoA E14

No.	Environmental safeguards	Responsibility	Timing	Reference
	• 7:00 am to 6:00 pm Mondays to Fridays, inclusive; • 8:00 am to 6:00 pm Saturdays; and • at no time on Sundays or public holidays.In continuous blocks not exceeding three • (3)hours each with a minimum respite from those activities and works of not less than (1) hour between each block			
MMNV8	Plant and equipment will be chosen that meets sound power limits or be fitted with additional noise control measures such as mufflers, air intake and discharge silencers or sound absorbent industrial-grade foams where reasonable and feasible.	EM/CM	Prior to Site Establishment/ Site Establishment	CNVIS
MMNV9	Any equipment not in use for extended periods shall be switched off. For example, heavy vehicles should switch engines off when not in use.	EM/CM	Site Establishment	CNVIS
MMNV10	Only use equipment necessary during each stage of the work and avoid simultaneous operation of noisy plant and equipment within discernible range of a sensitive receiver where practicable.	EM/CM	Site Establishment	CNVIS
MMNV11	Respite periods are to be confirmed following receipt of the EPL and consultation with the surrounding sensitive receivers. In the absence of the EPL, plant and equipment generating noise levels above 75 dB(A) at the nearest residential receiver have been considered as high noise impact. Minimum distances to residential receivers have been determined for these activities to quantify where construction activity will need to adopt respite periods.	EM/CM	Site Establishment	CNVIS
Heritage				
MM H1	Any items of potential heritage conservation significance or human remains discovered during construction will be managed in accordance with the *Standard Management Procedure Unexpected Heritage Items* (Roads and Maritime, 2015e).	EM/CM	Prior to Site Establishment/ Site Establishment	UMM NAH12

No.	Environmental safeguards	Responsibility	Timing	Reference
MMH2	If suspected Aboriginal heritage items or human remains are uncovered during construction they will be managed in accordance with the *Standard Management Procedure: Unexpected Heritage Items* (Roads and Maritime Services, 2015e).	EM/CM	Prior to Site Establishment/ Site Establishment	UMM AH6
Land Use and Property				
MML1	The land use survey will identify sensitive properties prior to the commencement of works.	EM/CM	Prior to Site Establishment	CoA E13
MML2	A preconstruction land condition assessment report will be completed in accordance with TfNSW specification G36 prior to taking possession of the sites.	EM/CM	Prior to Site Establishment	G36
MML3	Access to all properties will be maintained during construction, where feasible and reasonable, unless otherwise agreed by the relevant property owner or occupier. Any access physically affected by the Project will be reinstated to at least an equivalent standard, unless agreed with by the property owner	EM/CM/PE/SS	Site Establishment	UMM TT7, TT12, SE6 CoA E57
MML4	Condition surveys for structures and infrastructure at potential risk of damage due to construction of the Project will be undertaken prior to commencement of the proposed activity. Rectification measures will be implemented during construction to address any damage caused by the Project. A final condition assessment will be carried out at the completion of construction detailing recommendations for any additional rectification required.	EM/CM/PE/SS	Prior to Site Establishment/ Site Establishment	UMM LU8
Social and economic				
MMSE1	A Communication Strategy will be prepared that details: ▪ Procedures and mechanisms that will be implemented in response to the key social impacts identified for the Project ▪ Property acquisition support services that will be provided ▪ Procedures and mechanisms to communicate to Project stakeholders (including affected communities), the access and connectivity enhancements and new community and social facilities that will be delivered as part of the Project through the Social Infrastructure Plan and to update	CRM/EM	Prior to Site Establishment/ Site Establishment	UMM SE3

No.	Environmental safeguards	Responsibility	Timing	Reference
	stakeholders on delivery progress Procedures and mechanisms that will be used to engage with affected business owners to identify potential access, parking, business visibility and other impacts to develop measures to address potential impacts on a case by case basis			
Urban design and visual amenity				
MMU1	Site establishment works will be conducted to minimise visual impacts where reasonable and feasible on nearby sensitive receivers. Where there is no noise wall or hoarding in place, boundary fencing must be installed to minimise visual, noise and / or air quality impacts on adjacent sensitive receivers. Other measures may include retention of existing vegetation or treatment of key temporary structures. Measures will be implemented as early as possible.	EM/EA	Prior to Site Establishment/ Site Establishment	CoA E64, UMM LV8, LV9
MMU2	Minimise light spill from the Project into adjacent visually sensitive properties and areas by directing construction lighting into the construction areas and ensuring the site is not over-lit. This includes the sensitive placement and specification of lighting to minimise any potential increase in light pollution. Where necessary, construction lighting will comply with the requirements of the Civil Aviation Safety Authority (CASA) and Sydney Airport at all times. Regular site inspections will be undertaken to inspect light spill from walkways, offices and workshops and its ability to impact on local residential properties.	CM/EM	Prior to Site Establishment/ Site Establishment	CoA E65, UMM AS11, LV10
MMU3	Graffiti on site hoarding and construction litter around site perimeters will be removed throughout site establishment.	CM/EM	Site Establishment	Best practice
MMU4	Where hoarding is not required, sites will be screened, with shade cloth (or similar material) (where necessary) as early as possible to minimise visual impacts. Screening must include CSSI name and number.	CM/EM	Site Establishment	CoA A18, A19, A20
Soil and Water				
MMSW1	Soil and water management measures consistent with Managing Urban Stormwater – Soils and Construction Vols 1 and 2, 4th Edition (Landcom, 2004), including those listed in this table will be designed, installed and	SS/EA	Site Establishment	CoA E43

No.	Environmental safeguards	Responsibility	Timing	Reference
MMSW2	Prevent soil erosion through minimising ground disturbance and sealing ground surfaces as soon as is practicable.	SS/EA	Prior to Site Establishment/ Site Establishment	G38
MMSW3	An Erosion and Sediment Control Plan (ESCP) will be developed and implemented for all sites. The ESCPs will be updated where changes to site use, storage and conditions change.	SS/EA	Prior to Site Establishment/ Site Establishment	G38
MMSW4	A soil conservation specialist will be engaged if relevant to provide advice regarding erosion and sediment control and review the initial ESCPs.	SS/EA	Prior to Site Establishment/ Site Establishment	G36
MMSW5	Environmental Work Method Statements (EWMS) will be prepared for high risk activities.	SS/EA	Prior to Site Establishment/ Site Establishment	G36
MMSW6	ESCPs are to dictate the specific controls to be used in and around works on watercourses or on live stormwater lines. Typical measures might include but are not limited to: ▪ Timing in-stream works for lower-risk periods wherever practicable; ▪ Monitoring weather forecasts and taking appropriate action prior to forecast rainfall; ▪ Minimising the extent of work and the amount of time of disturbance where possible; ▪ Isolating work areas from natural flows where possible using diversion structures, pumps, temporary dams or similar; ▪ Use of temporary ground covers in areas of concentrated flow to minimise erosion of exposed soils during rainfall; and ▪ Stabilising flow paths as quickly as possible after works are completed.	EM	Prior to Site Establishment/ Site Establishment	G38
MMSW7	Prior to forecast rainfall events of more than 10mm in 24 hours (>50% chance), end of day controls will be implemented throughout the worksite to help reduce erosion and control sediment. These are to be detailed on ESCPs for each area.	EM	Prior to Site Establishment	G38
Flooding				
MMF1	As a minimum, site facilities will be located outside high flood hazard areas based on a one per cent AEP flood. For site facilities located within the floodplain, the flood	EM/CM	Prior to Site Establishment/ Site Establishment	HF8

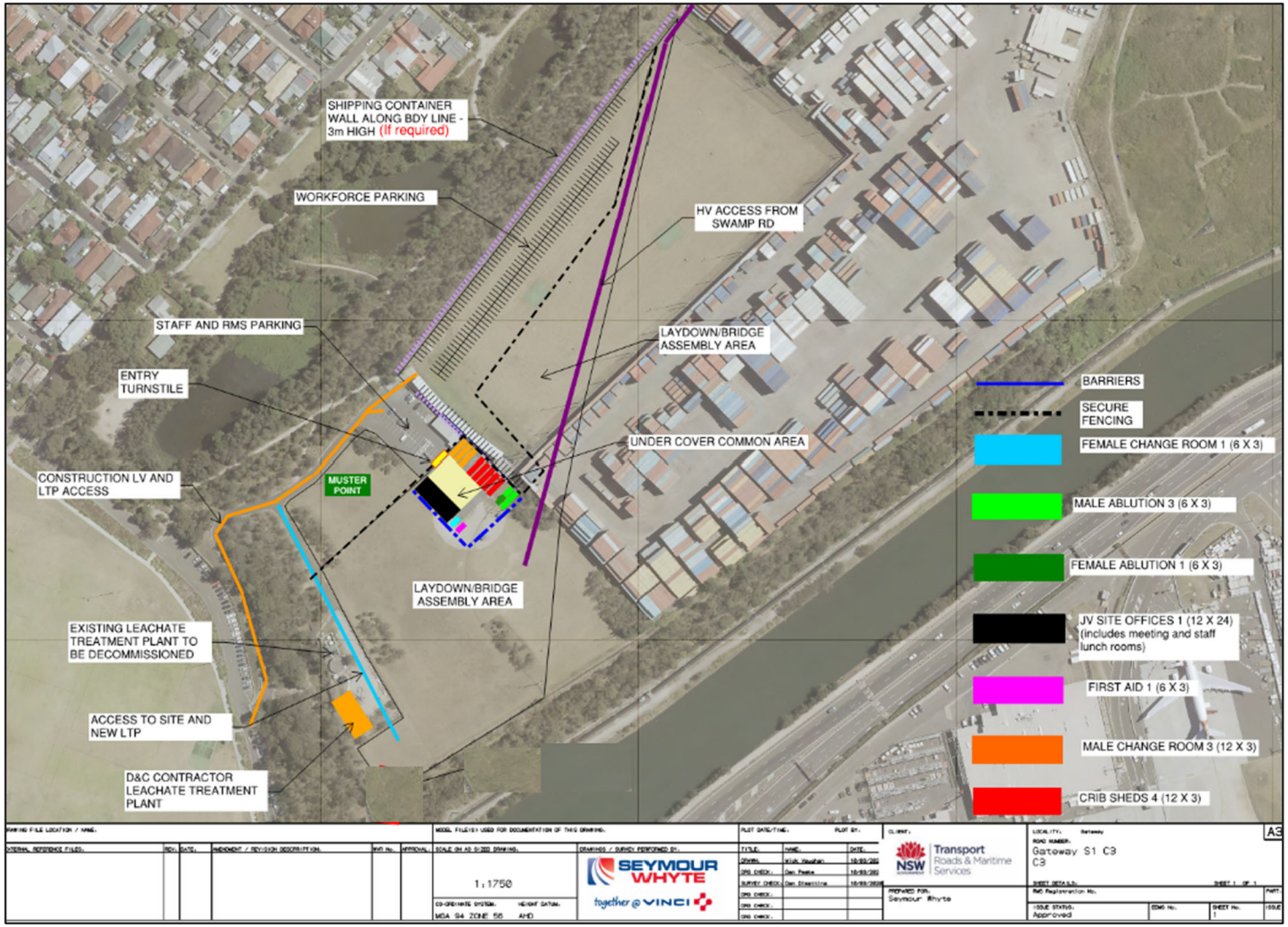
No.	Environmental safeguards	Responsibility	Timing	Reference
	mitigation strategy will identify how risks to personal safety and damage to construction facilities and equipment will be managed.			
Contamination				
MMC1	Potentially contaminated areas directly affected by the Project will be investigated and managed in accordance with the requirements of guidance endorsed under section 105 of the Contaminated Land Management Act 1997 (NSW) (CLM Act). This includes further investigations in areas of potential contamination identified in the Project footprint. If contamination posing a risk to human or ecological receptors is identified, a Remediation Action Plan will be prepared and implemented.	EM/CM	Prior to Site Establishment/ Site Establishment	CoA E44, E45, E47, UMM CS17, CS18
MMC2	An Unexpected Contaminated Land and Asbestos Finds Procedure will be implemented to manage any potentially contaminated materials that may be encountered during site establishment works.	EM/CM	Prior to Site Establishment/ Site Establishment	CoA E48, E49
MMC3	A hazardous materials assessment will be carried out prior to and during the demolition of buildings.	EM/CM	Prior to Site Establishment/ Site Establishment	UMM CS8
MMC4	The potential for settlement will be considered as part of the siting and layout of construction compounds and work areas in the former Tempe landfill. Where required, ground treatment (e.g. foundation layers or sheet piling) will be provided to minimise this risk.	EM/CM	Prior to Site Establishment/ Site Establishment	UMM CS13
MMC5	PFAS contaminated materials will be managed in accordance with the risk-based framework presented in the PFAS National Environmental Management Plan (HEPA, 2018). If soil and/or water containing PFAS is proposed for reuse, the proposed reuse must not result in an unacceptable or increased risk to human health and/or the environment. A health and environmental risk assessment and consultation with the NSW EPA (and the Airport Environment Officer where the works are on Sydney Airport land) will be required before any reuse of PFAS contaminated soil and/or water.	EM/CM	Prior to Site Establishment/ Site Establishment	UMM CS19
MMC6	The management of surface water runoff for works within the former Tempe landfill will adopt the following principles:	EM/CM	Prior to Site Establishment/ Site Establishment	UMM SW11

No.	Environmental safeguards	Responsibility	Timing	Reference
	• Isolate exposed waste from surface water runoff from other areas • Minimise contact between rainfall and surface water runoff and exposed waste • Capture and store (temporarily) surface water runoff from areas of exposed waste (leachate) Size leachate storage(s) based on updated water balance modelling to reflect the proposed construction methodology and to minimise the risk of the capacity being exceeded.			
Biodiversity				
MMB1	Weeds management during the site establishment works will be in accordance with the Project weed management protocols. Prior to commencement of clearing, weeds located within the approved footprint of the site establishment works will be 'tagged' to ensure weed material is kept separated from mulch during the clearing process, potentially transferring weeds throughout the site and offsite. Weed material will be disposed of at an appropriately licensed waste receiving facility or managed in accordance with *Biosecurity Act 2015* or local council requirements.	CM/PE/SS/EM	Prior to Site Establishment/ Site Establishment	G40
MMB2	Trees to be retained will be protected prior to the commencement of construction in accordance with AS4970-2009 Protection of trees on development sites and the Project's tree management strategy. Any tree pruning will be undertaken in accordance with the Project's tree management strategy and carried out prepared by a qualified arborist.	CM/PE/SS/EM	Prior to Site Establishment/ Site Establishment	UMM LV11
MMB3	The need to remove trees within the Project site will be avoided where practicable. For those trees that cannot be reasonably avoided, a tree management strategy will be developed, including measures to offset the loss of trees and achieve a net increase in tree canopy. The final location of replacement trees will be confirmed in consultation with Inner West Council and Sydney Airport Corporation.	CM/PE/SS/EM	Prior to Site Establishment/ Site Establishment	UMM LV4

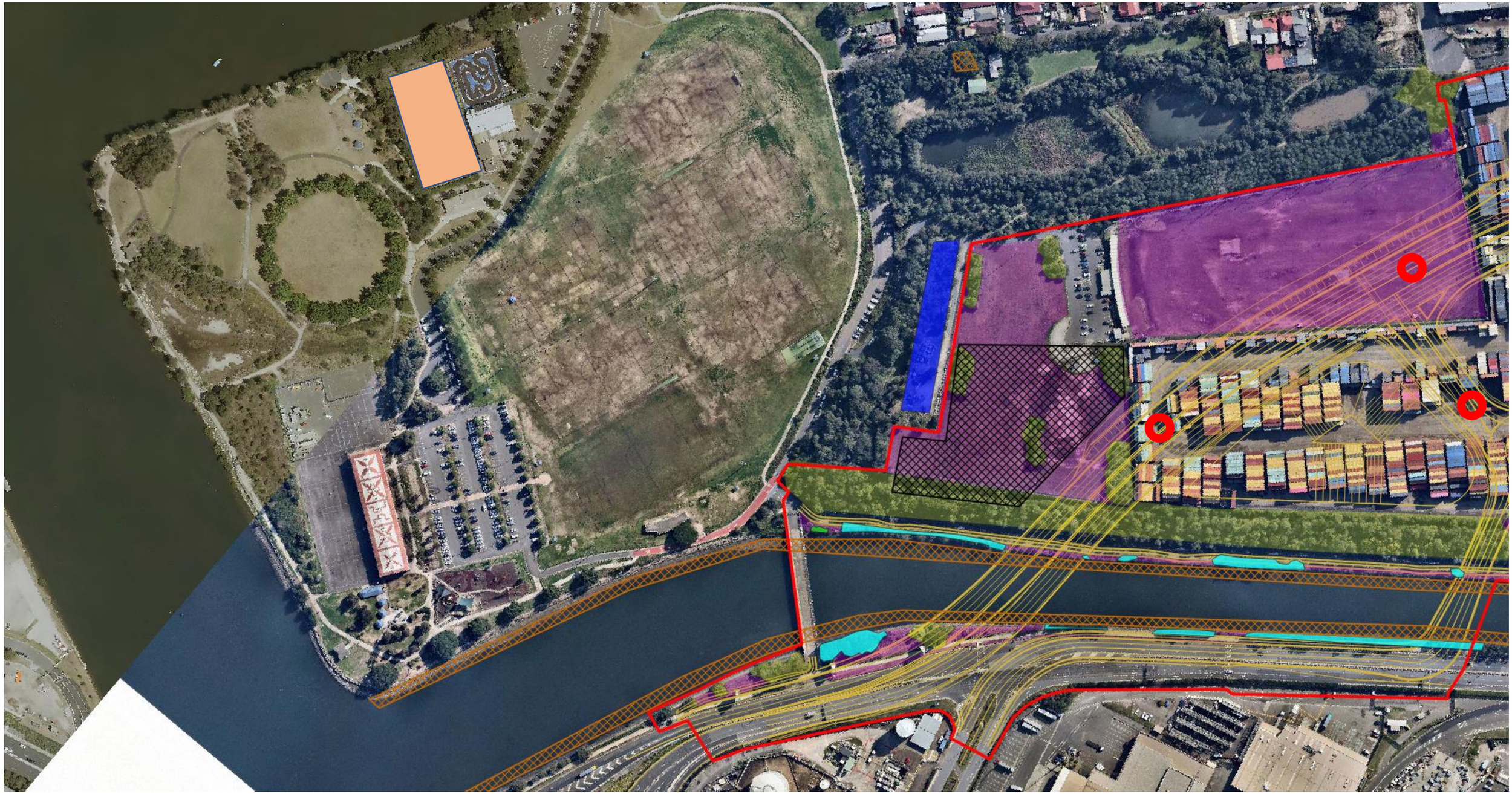
No.	Environmental safeguards	Responsibility	Timing	Reference
	The strategy will also include on-site processes and protective measures to ensure trees identified for retention are appropriately protected during construction.			
Health, safety and hazards				
MMHSH1	A spill response procedure will be developed as part of the Project's incident management protocols. The procedure and incident management protocols will detail processes, responsibilities and measures to manage hazardous substances and dangerous goods, including storage, handling and spill response, in accordance with legislative requirements.	CM/PE/SS/EM	Prior to Site Establishment/ Site Establishment	UMM HS1
MMHSH2	The transport of dangerous goods will be undertaken in accordance with the Dangerous Goods (Road and Rail Transport) Regulation 2009 and the *Australian Code for the Transport of Dangerous Goods by Road & Rail* (National Transport Commission, 2017).	CM/PE/SS/EM	Prior to Site Establishment/ Site Establishment	UMM HS6
Waste management				
MMW1	Construction waste will be minimised by accurately calculating materials brought to the site and limiting materials packaging where possible.	CM/PE/SS/EM	Prior to Site Establishment/ Site Establishment	UMM WM3
MMW2	All waste disposal will be in accordance with the *Waste Classification Guidelines* (NSW EPA, 2014).	CM/PE/SS/EM	Prior to Site Establishment/ Site Establishment	UMM WM4
MMW3	The following measures would be implemented during works at the former Tempe landfill to avoid attracting wildlife: • No excavation is proposed and this will avoid exposing waste • Minimising the size and area of any exposed stockpiles • Ensuring material that has been disturbed, uncapped, or temporarily stockpiled is suitably covered at the end of each day.	CM/PE/SS/EM	Prior to Site Establishment/ Site Establishment	UMM WM5
MMW4	Suitable areas will be identified to allow for contingency management of unexpected waste materials, including contaminated materials. Areas will be hardstand or lined areas that are appropriately stabilised and bunded, with sufficient space for stockpile storage.	CM/PE/SS/EM	Prior to Site Establishment/ Site Establishment	UMM WM6

Annexure C - Indicative Site Layout

C3 - Former Tempe Tip site Swamp Road, Tempe



Annexure D - Sensitive Area Plans



- Project Boundary
- Design Footprint
- Site Compound - Proposed
- Aboriginal Heritage
- Non-aboriginal Heritage
- Test Pit
- Dog Park
- Leachate Treatment Plant

Vegetation Layers

- Urban exotic / native landscape plantings
- Highly disturbed areas with no or limited native vegetation
- PCT 1232 Swamp Oak Forest (EEC Protected Vegetation)
- PCT 920 Mangrove Forests (EEC Protected Vegetation)

SYDNEY GATEWAY

A Joint Venture Project

JOHN HOLLAND

SEYMOUR WHYTE

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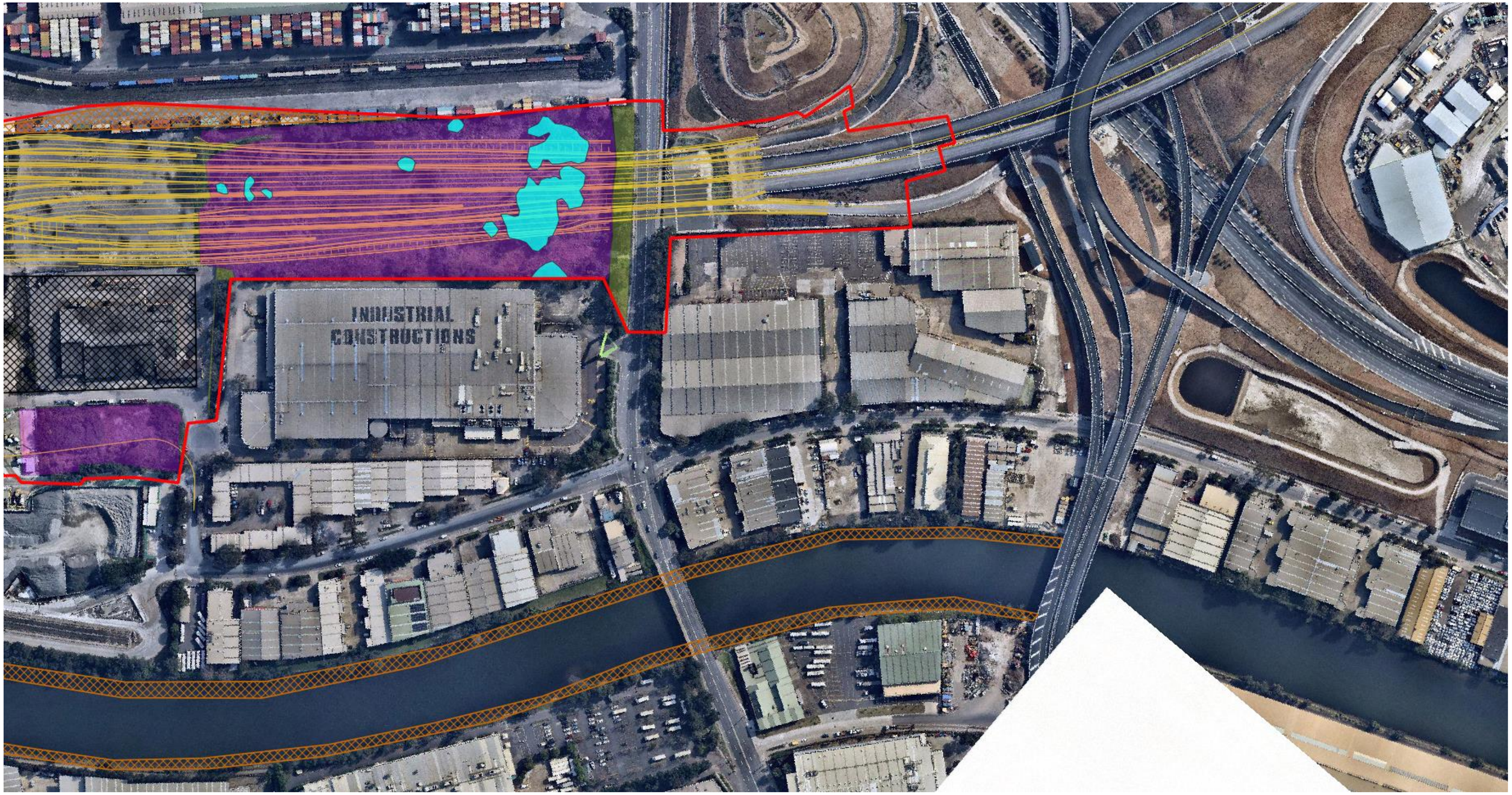

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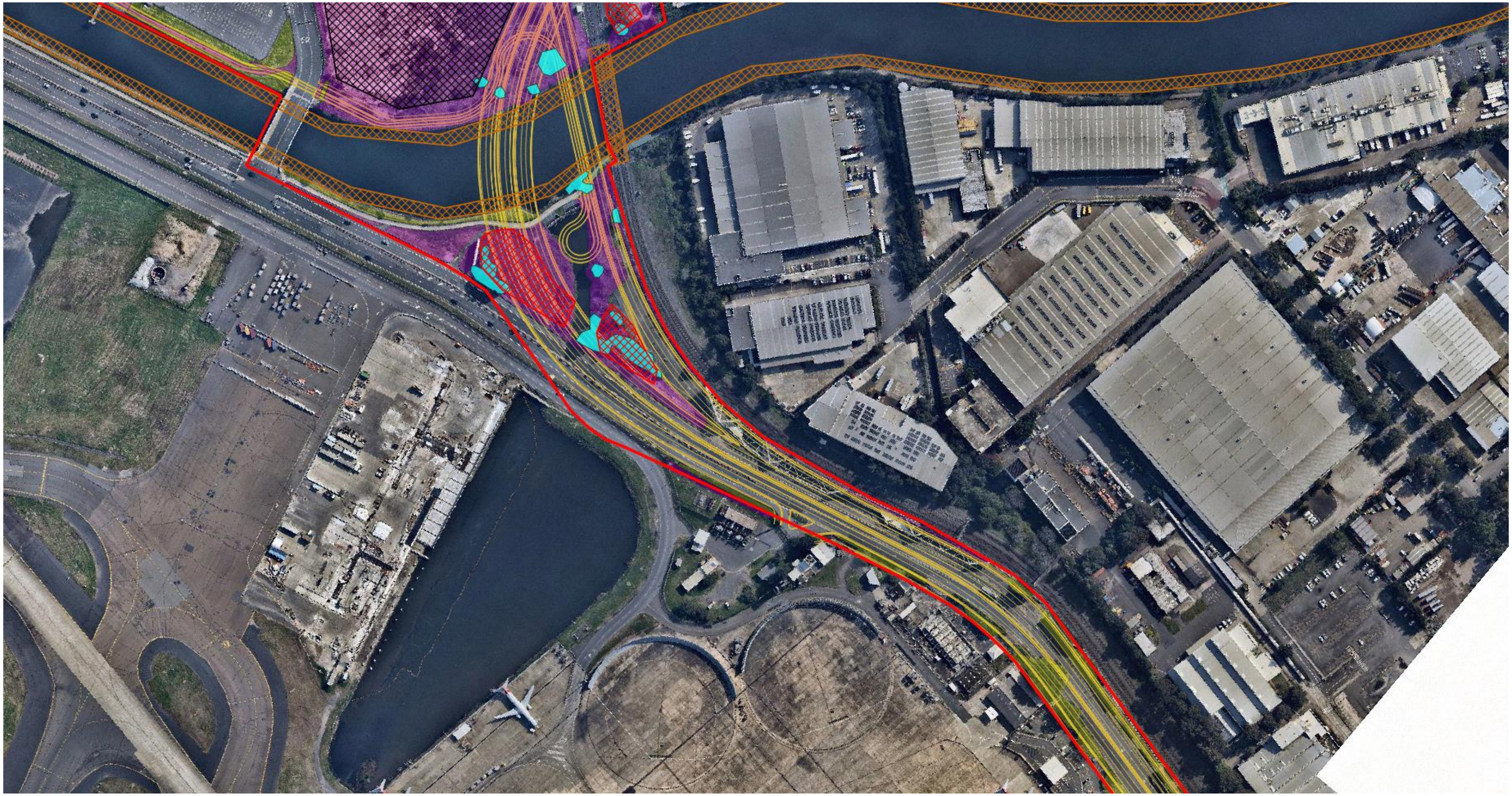

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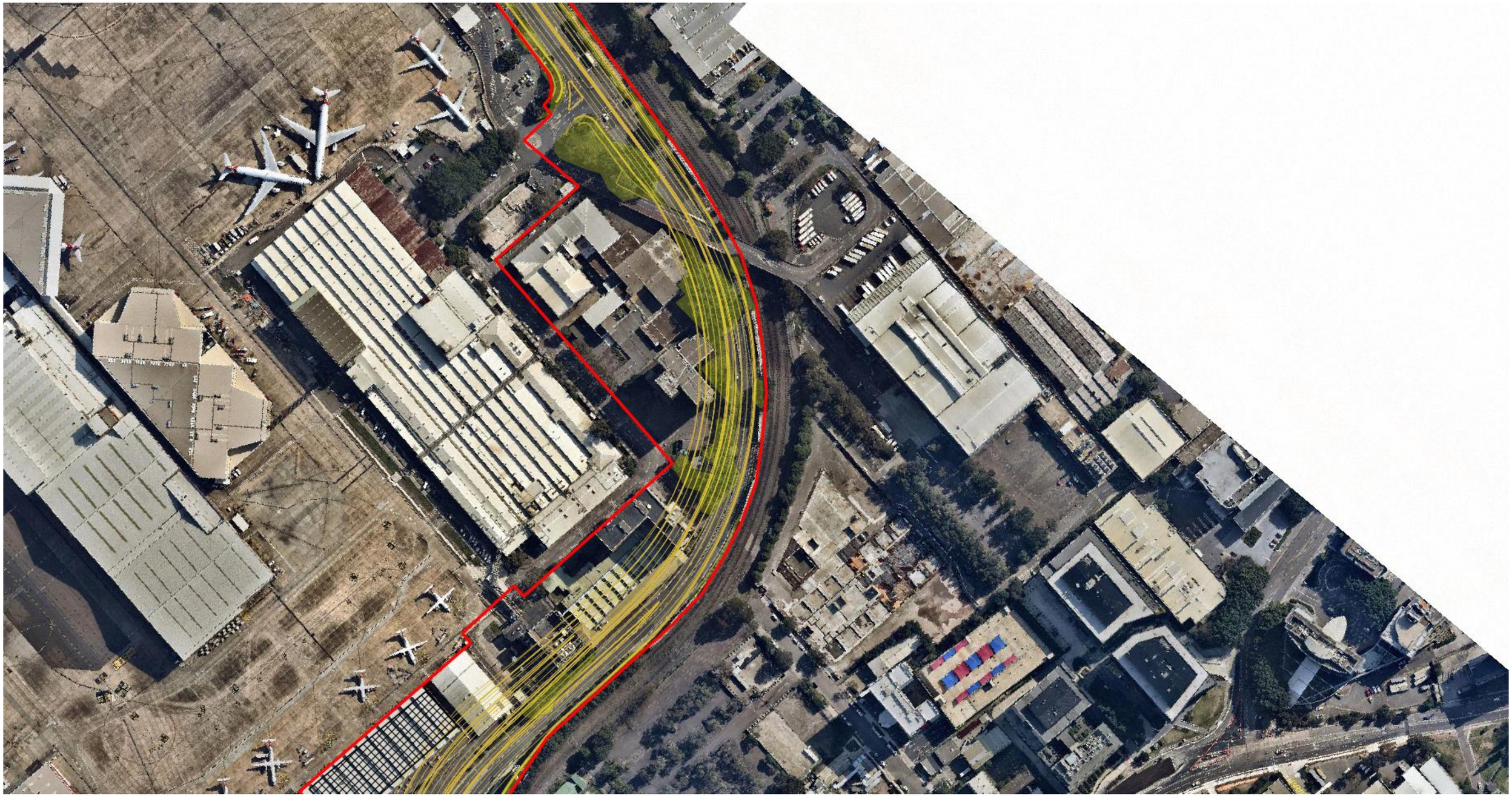

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SEYMOUR WHYTE

Annexure E - Unexpected Contaminated Land and Asbestos Finds Procedure

UNEXPECTED CONTAMINATED LAND AND ASBESTOS FINDS MANAGEMENT PROCEDURE

MANAGEMENT AND RESPONSIBILITY

INDUCTION/ TOOLBOX TALKS
All personnel are to receive Project/ Site Inductions and on-going training via Toolbox Talks which will include requirements of this procedure

Environment Coordinator
Site Supervisor
All personnel

NO EVIDENCE OF CONTAMINATION OBSERVED
If observations do not indicate the presence of potential contamination, then excavation works continue.

EVIDENCE OF UNEXPECTED CONTAMINATION OBSERVED

IF OBSERVATIONS INDICATE PRESENCE OF POTENTIAL UNEXPECTED CONTAMINATION THEN STOP ALL WORK IN THE IMMEDIATE AREA AND PREVENT FURTHER ACTIVITY IN THE AREA. NOTIFY THE SITE SUPERVISOR AND ENVIRONMENT CO-ORDINATOR AND CORDON OFF AREA.

Site Supervisor
Site Engineer
Project Manager
Lead Safety Manager (to be notified)

- Do not touch or disturb the item/ material. Ensure relevant PPE is being worn.
- Delineate the find from the rest of the worksite and install signage
- Initial notification to TfNSW, ER/AEO, JH HSE, Environment and Community Teams
- Inform the Project Manager regarding the potential contamination find. The following detail should be provided:
  - The location of the potential contamination
  - Odor (if any)
  - Depth
  - Surrounding material and works being undertaken at the time of discovering the material
  - Visual appearance

ADDITIONAL ASSESSMENT
If required, the Project Manager is to obtain assistance from a suitably qualified environmental scientist/ engineer in identifying the potential hazard to human health or the environment in accordance with NSW regulatory requirements; this may include sampling and laboratory analysis.

Site Supervisor
Site Engineer
Project Manager
Lead Safety Manager (to be notified)
Project Environment Manager (to be notified)

MANAGEMENT STRATEGY - STATE
- Develop a plan for managing and/or re-mediating the suspect material. If required, develop/update a Remediation Action Plan (RAP). **HOLD POINT** – RAP (if required) needs to be submitted 5 days prior.
- Environment Manager to notify TfNSW and ER
- Obtain any necessary approval(s) including any approvals from the Site Auditor.

MANAGEMENT STRATEGY - COMMONWEALTH
- Develop a plan for managing and/or re-mediating the suspect material. If required, develop/update a Remediation Action Plan (RAP). **HOLD POINT** – RAP (if required) needs to be submitted 5 days prior.
- Environment Manager to notify TfNSW and AEO
- Obtain any necessary approval(s) including any approvals from the Site Auditor.

Project Manager
Lead Safety Manager
Project Environment Manager

STRATEGY IMPLEMENTATION
- If the material is to be removed waste classification is to be undertaken in accordance with the NSW Waste Classification Guidelines (EPA2014) and disposal at a facility licensed to accept the class of waste.
- If the material will be remediated onsite, to be done in accordance with RAP, Contamination Management Plan and any other relevant requirements.
- Document compliance with the approved management and remediation provide relevant documentation to the disposal site and the regulator (if required).

Environment Coordinator
Site Supervisor
Site Engineer

RE-COMMENCEMENT OF WORKS
Once the contamination find has been addressed the Project Manager is to approve re-commencement of works in the vicinity of the remediation site. Depending on the nature and extent of contamination, validation may be required by the site auditor and/or contamination consultant.

Project Manager

CONTINUE WITH ACTIVITY

General Indicators of Contamination

- Asbestos cement fragments or other potentially asbestos containing materials
- Odorous or stained soil
- Buried chemical drums or containers
- Presence of waste materials or building debris
- Tarry or ashy material
- Brightly or unusually coloured material
- A yellow and/ or red mottling in the soil profile indicates there may be Acid Sulfate Soils (ASS)

Asbestos

An unexpected find occurs when ACMs not identified in the Asbestos Register is found on site. In the event of an unexpected find the below steps are to be followed:

1. The area is to be demarcated, works in the area to cease and workers warned
2. Notify the Site Supervisor, The Site Supervisor will notify the Project Manager
3. Control dust by with dust suppression i.e. water cart, wetting down the area
4. Arrange for testing of the suspected ACM and monitoring of the area (if required)
5. An asbestos removalist is to be engaged to provide recommendations to treat the area, as required
6. The area is to be made safe

Asbestos finds are to be managed in accordance with the Project WHS Management Plan

Documentation

The below documentation may be relevant to this unexpected contamination finds procedure:

- JHSW Project WHS Plan (which includes asbestos management);
- JHSW Contamination Management Plan
- RMS G36 Environmental Protection - Section 4.2
- TfNSW Publication – Guideline for the Management of Contamination September 2013
- TfNSW Environment Fact Sheet – Asbestos Waste
- Environmental Incident Classification and Reporting Procedure RMS November 2018
- Voluntary Remediation Agreement (VRA) No. 26050

Annexure F - TfNSW Environmental Incident Classification and Reporting Procedure

Environmental Incident Classification and Reporting Procedure

Roads and Maritime Services | November 2018

Document No. | RMS 17.374 | Version 5.1

NSW GOVERNMENT

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About this release

Title	Environmental Incident Classification and Reporting Procedure

Approval		
Prepared by	Environment Manager Performance Improvement	Scott Machar
Reviewed by	Director Environment Operations	Sally Durham
Approved by	Director Environment	Michael Crowley

Document Control			
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Contents

Acronyms and definitions	
Acronym	**Definition**
DE	(Roads and Maritime Services) Director Environment
DES	(Roads and Maritime Services) Director Environment Sydney
DPE	Department of Planning and Environment
Environmental harm	Any act that degrades or pollutes the environment
EPA	NSW Environment Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1997*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPL	Environment Protection Licence
POEO Act	*Protection of the Environment Operations Act 1997*
REF	Review of Environmental Factors
Roads and Maritime	NSW Roads and Maritime Services
SEQC	(Roads and Maritime Services) Safety Environment and Quality Co-ordinator
SEQO	(Roads and Maritime Services) Safety Environment and Quality Officer
WHS	Work Health and Safety

1. Introduction

1.1 Aim

The Environmental Incident Classification and Reporting Procedure (the Procedure) aims to ensure Roads and Maritime Services workers and contractors understand how to classify, respond to and report environmental incidents that occur as a result of Roads and Maritime managed activities.

1.2 Objectives

The objectives of the Procedure are to:

- Ensure all relevant Roads and Maritime workers, managers and contractors are made aware of environmental incidents promptly and can respond accordingly
- Ensure site workers understand the immediate environmental incident reporting requirements
- Ensure all workers understand reporting timeframes, including statutory requirements
- Ensure incidents are reported to enable monitoring, sharing of lessons learnt and response to emerging environmental incident trends
- Comply with statutory obligations to report certain environmental incidents to regulators and other relevant government agencies (see section 5.1).

1.3 Scope and coverage

This Procedure is applicable to all Roads and Maritime activities where environmental incidents may occur. This includes (but is not limited to):

- Temporary activities, such as preliminary investigations (e.g. geotechnical and environmental surveys) and the construction and maintenance of Roads and Maritime assets
- Activities at Roads and Maritime properties and facilities
- Vessels operated by Maritime division
- Activities undertaken by contractors on behalf of Roads and Maritime.

The requirements of this Procedure must be communicated to all Roads and Maritime workers and contractors (e.g. during inductions) who are undertaking activities where incidents may occur.

The Procedure is for internal reporting processes, except where incidents are identified that need to be notified to regulators, and other relevant authorities (see section 5.1).

The procedure does NOT cover environmental incidents caused by:

- Operational road and traffic activities of the general public (e.g. vehicle accidents, fires caused by discarded cigarette butts)
- Boating accidents (except those involving Roads and Maritime vessels)
- Dumping of materials by members of the public on Roads and Maritime roadsides or land (except where hazardous materials are unexpectedly found during road construction or maintenance activities). Illegal dumping should be reported to the NSW Environment Protection Authority (EPA)
- Marine oil and chemical spills covered by the National Plan for Maritime Environmental Emergencies (Australian Maritime Safety Authority, 2014).

2. Environmental incident classification

There are three categories of environmental incidents, as detailed in Table 2.

Table 2: Environmental incident classification

Category	Description	Examples	
Category 1	Potential breaches of legislation or failures of process that result in actual off-site environmental harm, or residual on-site environmental harm or Works undertaken outside approved areas, without required approval or without environmental assessment or Any Material Harm pollution incident as defined by Part 5.7 of the *Protection of the Environment Operations Act 1997* (POEO Act).	Pollution Incidents	Discharge of waters from site not in accordance with any approval requirements (e.g. discharge criteria in an Review of Environmental Factors (REF) safeguard or Environment Protection Licence (EPL) condition)
			Pollution, or potential pollution, of waters
			Unmanaged vehicle tracking of materials or emissions of dust, offensive odours or noise beyond the site boundary that are not managed in accordance with approval requirements and/or might impact on nearby land users
			Pollution incidents that threaten harm to the health or safety of people (e.g. uncontrolled releases of hazardous substances)
			Unauthorised or illegal disposal or transport of waste
			A spill or other incident that causes pollution to land
		Conservation Breaches	Unauthorised harm or damage to native flora and fauna (terrestrial or aquatic/marine)
			Unauthorised dredging or reclamation works within a watercourse
			A fire caused by Roads and Maritime activities that travels beyond the boundary causing or potentially causing harm to the environment or community
		Heritage Breaches	Unauthorised harm to Aboriginal objects and Aboriginal places
			Unauthorised damage to any State or locally significant relic or Heritage item, or item listed on the Roads and Maritime Section 170 register

Table 2: Environmental incident classification			
Category	**Description**	**Examples**	
		Planning and compliance breaches	Failure to comply with the requirements of: • The *Environmental Planning and Assessment Act 1997* (EP&A Act), including exempt activities, Part 5 determinations and Part 5.1 approvals • An *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) approval • An EPL • A CEMP or environmental work method statement • A permit from a regulator (e.g. under the *Fisheries Management Act 1994*)
Category 2	Failures of process or events that do not result in off-site environmental harm, or residual on-site environmental harm. These incidents may result in temporary on-site environmental harm that can be rectified to pre-existing conditions.	A procedural, administrative or technical breach of environmental requirements, including: • Failure to prepare or submit required documents, reports or other correspondence • Failure to comply with the requirements of: o The *Environmental Planning and Assessment Act 1997* (EP&A Act), including exempt activities, Part 5 determinations and Part 5.1 approvals o An *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) approval o An EPL o A CEMP or environmental work method statement o A permit from a regulator (e.g. under the *Fisheries Management Act 1994*).	
		Spills and discharges that do not leave a site boundary and are cleaned up without residual on-site environmental harm, and the area of temporary impact can be restored to pre-existing conditions	
		A fire that is contained on site and does not cause or potentially cause adverse impact to the environment or community	
Reportable Event	An event or unexpected find that occurs outside the scope of reasonable environmental controls and mitigation measures	Sediment or site water travelling beyond a site boundary, and where it can be demonstrated that: • Erosion and sediment controls were installed and maintained in accordance with an erosion and sediment control plan, and • The cause of the incident was reasonably unforeseen or the weather (rain, wind etc) event exceeded the design capacity of controls.	

Table 2: Environmental incident classification		
Category	**Description**	**Examples**
		Note these events are considered to have occurred (and the response should commence in accordance with Section 3) when sediment or site water first travels beyond the site boundary (e.g. when an appropriately sized and maintained sediment basin commences overtopping)
		An unexpected archaeological find that is being managed in accordance with the "Roads and Maritime Standard Management Procedure - Unexpected Archaeological Finds"
		An unexpected threatened species find that is being managed in accordance with the "Roads and Maritime Biodiversity Guidelines – unexpected threatened species finds procedure"
		An unexpected find of contaminated soils, asbestos or other potentially hazardous substances during construction or maintenance works. Note that once a particular contaminant is identified or found for the first time (either during project planning or construction phases) it is then reasonably expected to be found, so additional finds need not be reported in this category.
Regulatory Action	Formal regulatory action from an environmental regulator (that has not already been reported in conjunction with another incident)	Formal regulatory action from an environmental regulator includes, but is not limited to: • Penalty infringement notices (PINs) • Clean up notices • Prevention notices • Official cautions / warnings • EPA show cause notifications.

Note: For any incident where there is associated formal regulatory action from an environmental regulator, copies of this correspondence must be forwarded to envops@rms.nsw.gov.au in addition to the Environmental Incident Report (see section 4).

3. Environmental incident response

3.1 Considerations and steps for environmental incident response

The step-by-step response for Category 1 incidents, Category 2 incidents and Reportable Events is detailed in Table 3.1a (activities undertaken by contractors) and Table 3.1b (activities undertaken by Roads and Maritime Regional Maintenance). However, some key points apply throughout all stages of the response to any environmental incident:

- If in doubt, treat all incidents as Category 1 to ensure reporting timeframes can be met
- Project teams should also undertake the following notifications as appropriate:
    - Roads and Maritime Corporate Communications for any incidents that have potential for community or media attention (see section 4.4)
    - Roads and Maritime Work Health and Safety (WHS) Branch for any incidents that involve actual or potential risks to worker health and safety (see section 4.4).
- The person responsible for operational management of the site/activity shall assume responsibility for the response to the incident and direct actions as necessary and in accordance with this Procedure
- The Director Environment Sydney (DES) may reclassify the category of an incident where appropriate, in consultation with the relevant Roads and Maritime Environment Manager.

Any Regulatory Action received (that has not already been reported in conjunction with another incident) should be immediately forwarded to the envops@rms.nsw.gov.au mailbox, and followed by an immediate phone call to the relevant Roads and Maritime Environment Manager, who will immediately advise the DES. Consideration should then be given as to whether an environmental incident has occurred (see section 2) that should be reported in accordance with this section.

Table 3.1a: Environmental incident response – activities undertaken by contractors				
Step	**Action**	**Responsibility for completing action**	**Timeframe**	
			Category 1 Incidents	Category 2 Incidents / Reportable Events
1	Stop work in relevant area (if necessary) and take actions to prevent adverse impact to human health or the environment. Note human health and safety is the primary concern, and no action should be taken if it is not safe to do so - in these instances emergency services should be contacted (phone triple zero).	Person who identifies incident	Immediate	Immediate
2	Advise the contractor site management team (and Roads and Maritime Corporate Communications and/or WHS Branch as appropriate)	Person who identifies incident	Immediate	Immediate
3	Advise the Roads and Maritime project management team and the relevant Roads and Maritime Environment Manager.	Contractor	Immediate	Day of the incident
4	Consider if the incident is a pollution incident that constitutes Material Harm in accordance with Part 5.7 of the POEO Act. For Material Harm pollution incidents, notify relevant agencies (see section 5.2). Sites with an EPL should implement their Pollution Incident Response Management Plan.	Contractor	Immediate	Immediate
5	Advise DES by phone. The DES may request photographs and a brief summary of known information via email. The following Roads and Maritime managers should also be notified by phone as relevant: • Director Environment (Regions) • Director Environment (Motorways).	Roads and Maritime Environment Manager	Immediately following advice of the incident	N/A
6	Where relevant, notify incident to appropriate regulatory agency (see section 5.1). Note this does not refer to the requirement to notify Material Harm pollutions incidents (see Step 4).	Contractor	As required by legislation	As required by legislation
7	Complete the incident report form (see section 4.2), including sign-off from Roads and Maritime Project Manager, and submit to Roads and Maritime Environment Manager* (see sections 4.3 and 4.4).	Contractor	Within 3 business days of the incident	Within 3 business days of the incident
8	Sign and submit incident report form to envops@rms.nsw.gov.au.	Roads and Maritime Environment Manager	On the day of receipt of the form	On the day of receipt of the form
9	For Material Harm pollution incidents, provide a written report to each relevant authority (see section 5.2).	Contractor	Within 7 days of the incident	N/A
10	Undertake incident investigation (level of investigation to be appropriate to the severity of the incident) to determine root cause and any necessary corrective actions. Summarise findings in 'Incident Lessons Learnt' template and submit to Environment Manager for review.	Contractor	Within 1 month of incident	N/A
11	Submit final Incident Lessons Learnt to envops@rms.nsw.gov.au.	Roads and Maritime Environment Manager	Within 1 week of receipt	N/A
12	Consider the need for any required corrective actions to be addressed through a management system (e.g. corrective action request), and any required updates to a risk register.	Roads and Maritime Environment Manager and project team	As appropriate	As appropriate

*Alternate workflow / signatory arrangements may be required for projects where a third party is involved (e.g. a delivery authority). These arrangements can be confirmed with the relevant Roads and Maritime Environment Manager.

Table 3.1b: Environmental incident response – activities undertaken by Regional Maintenance (including contractors or RMCC on behalf of Regional Maintenance)				
Step	**Action**	**Responsibility for completing action**	**Timeframe**	
			Category 1 Incidents	Category 2 Incidents / Reportable Events
1	Stop work in relevant area (if necessary) and take actions to prevent adverse impact to human health or the environment. Note human health and safety is the primary concern, and no action should be taken if it is not safe to do so - in these instances emergency services should be contacted (phone triple zero).	Person who identifies incident	Immediate	Immediate
2	Advise the Roads and Maritime site management team and the relevant Roads and Maritime Environment Manager and Safety Environment Quality Officer (SEQO) / Safety Environment Quality Co-ordinator (SEQC) (and Corporate Communications and/or WHS Branch as appropriate)	Person who identifies incident	Immediate	Immediate
3	Advise DES by phone. The DES may request photographs and a brief summary of known information via email. The relevant Regional Maintenance Manager must also be notified.	Environment Manager	Immediate	N/A
4	Consider if the incident is a pollution incident that constitutes Material Harm in accordance with Part 5.7 of the POEO Act. For Material Harm pollution incidents, notify relevant agencies (see section 5.2). Sites with an EPL should implement their Pollution Incident Response Management Plan.	DES	Immediately following advice of the incident	N/A
5	Where relevant, notify incident to appropriate regulatory agency (see section 5.1). Note this does not refer to the requirement to notify Material Harm pollutions incidents (see Step 4).	Environment Manager	As required by legislation	As required by legislation
6	Complete the incident report form (see section 4.2), including sign-off from Roads and Maritime Project Manager, and submit to SEQC (see section 4.3).	Relevant Roads and Maritime site representative	Within 3 business days of the incident	Within 3 business days of the incident
7	SEQC to sign and submit incident report form to relevant Environment Manager (see section 4.4).	SEQC	On the day of receipt of the form	On the day of receipt of the form
8	Sign and submit incident report form to envops@rms.nsw.gov.au.	Environment Manager	On the day of receipt of the form	On the day of receipt of the form
9	For Material Harm pollution incidents, provide a written report to each relevant authority (see section 5.2).	DES	Within 7 days of the incident	N/A
10	Undertake incident investigation (level of investigation to be appropriate to the severity of the incident) to determine root cause and any necessary corrective actions. Summarise findings in 'Incident Lessons Learnt' template and submit both to Environment Manager for review. Consider the need for any required corrective actions to be addressed through a management system (e.g. corrective action request), , and any required updates to a risk register.	SEQC	Within 1 month of incident	N/A
11	Submit final Incident Lessons Learnt to envops@rms.nsw.gov.au.	Roads and Maritime Environment Manager	Within 1 week of receipt	N/A

Copies of formal regulatory action from an environmental regulator (that has not already been reported in conjunction with another incident) must be forwarded to the relevant Roads and Maritime Environment Manager (and SEQC/SEQO for Regional Maintenance projects) and envops@rms.nsw.gov.au immediately upon receipt.

3.2 Critical incidents

Some Category 1 incidents require escalation so relevant members of the Roads and Maritime Executive are aware of the incident and ready to respond as necessary. Category 1 incidents will be deemed 'Critical Incidents' for escalation to the Executive when they have the potential for:

- Regulatory action (e.g. EPA Penalty Infringement Notice) and/or
- Reputational damage (e.g. media coverage) and/or
- Significant environmental harm.

Guiding factors that will be considered when determining whether there has been 'significant' environmental harm include:

- When there has been actual or potential harm to the health or safety of people or to the environment that is not trivial
- Actions required to prevent, mitigate or make good the actual or potential environmental harm are likely to exceed $10,000

When a potential 'Critical Incident' is reported, the DES will immediately brief the Director Environment (DE) who will make a determination on whether it will be considered a 'Critical Incident'. The DE will then brief the Roads and Maritime Chief Executive and relevant Executive Director, as well as any other members of the Executive as appropriate. When the DE cannot be contacted, the DES will make the determination and make the relevant Executive briefings.

4. Environmental incident reporting

4.1 Environmental incident report form

The Environmental Incident Report Form should be completed for Category 1 incidents, Category 2 incidents and Reportable Events, and is available on the Roads and Maritime website.

4.2 Completing the incident report form

All parts of the Incident Report Form must be completed in accordance with this procedure and following the instructions within the form. The Form (and any subsequent reports) must only include factual information. Speculation about the causes and outcomes of incidents are not to be included.

The Form must be signed by the following:

Signatory	Reason
The person making the report	The person witnessed the incident or has the most knowledge of the incident, and can provide sufficient factual information.
The Roads and Maritime Project Manager	To ensure all relevant Roads and Maritime parties can be made aware of the incident, and appropriate resources can be allocated and/or approved to respond to the incident. This also ensures the project management team are aware of any environmental performance trends if multiple incidents occur.
Safety Environment and Quality Co-ordinator (Roads and Maritime Regional Maintenance only)	To ensure Regional Maintenance management system staff are aware of the incident, and any necessary management system changes can be made once corrective actions and lessons learnt are finalised.
The relevant Roads and Maritime Environment Manager	Concurrence that the incident is adequately described, and the immediate actions and corrective actions are appropriate.

As noted in Table 3.1a, alternate signatory arrangements may be required for projects where a third party is involved (e.g. a delivery authority). These arrangements can be confirmed with the relevant Roads and Maritime Environment Manager.

4.3 Submitting the incident report form

All Incident Report Forms must be populated, signed and submitted electronically (never printed / signed / scanned etc.) to enable Roads and Maritime to electronically capture the information entered in the form.

Completed Incident Report Forms should be submitted by the Roads and Maritime Environment Manager to the Environment Operations mailbox:

- envops@rms.nsw.gov.au

It is essential that a clear and consistent subject line convention is used to allow tracking of correspondence about each incident. All emails about an incident between all parties should structure the subject line as follows:

- Category X - project name / incident location - date
- For example, Category 1 – Main Road Upgrade – dd/mm/yy.

Where information cannot be gathered within the timeframes set out in this Procedure, the incident form should be submitted to the mailbox as a ‘draft’, whether or not the information contained is fully completed.

- For example, Category 1 – Main Road Upgrade – dd/mm/yy (DRAFT).

The Environment Manager should then request further information from the person making the report, and the final report should be submitted within the next 24 hours.

4.4 Roads and Maritime contacts

The relevant Environment Manager for each region and Project Office is the first point of contact for enquiries relating to environmental incidents. Current contacts for all Roads and Maritime Environment Managers can be found on the Roads and Maritime website.

Environment Managers can also provide contact details for other relevant contacts during an incident, such as Communications or Work, Health and Safety. Hazards and occurrences that occur during Roads and Maritime activities should be reported through the Roads and Maritime WHS reporting line on 1300 131 469.

The DES oversees the application of this Procedure, and can be contacted in the absence of the relevant Environment Manager for Category 1 incidents:

- Phone - (02) 0428 608 758

5. Regulatory agency notification

5.1 Notification of Material Harm pollution incidents

5.1.1 Definition of Material Harm pollution incidents

Under Part 5.7 of the POEO Act, there is a duty to immediately notify (i.e. promptly and without delay) each relevant authority (see section 5.1.3) of a pollution incident where material harm to the environment is caused or threatened.

The POEO Act states that a pollution incident should be considered Material Harm if:

> *"(i) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or*
>
> *(ii) it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000"*

Material Harm only relates to pollution incidents. Other environmental incidents, such as conservation, heritage and planning breaches, are not included in the definition of a pollution incident.

5.1.2 Determining if an incident should be considered Material Harm

As soon as a person becomes aware of a pollution incident that has the potential to cause Material Harm, the Category 1 incident response should be followed (see Table 3.1a and Table 3.1b above). The determination on whether a pollution incident should be considered Material Harm should be made in accordance with Table 5.1.2.

Table 5.1.2: Determination of Material Harm pollution incidents

Project delivery	Material Harm determination
Activities undertaken by Regional Maintenance	The DES should make the determination (and any associated notifications) on whether a pollution incident should be considered Material Harm. If the DES is not available, the relevant Environment Manager should seek advice from other Roads and Maritime Environment Branch Directors, or make the material harm determination themselves. If no assistance can be obtained and it is suspected that a pollution incident should be considered Material Harm, the project should notify the relevant authorities in accordance with Table 5.1.3a or Table 5.1.3b (as relevant).
Activities undertaken by contractors	The contractor project team should make the determination (and any associated notifications) on whether a pollution incident should be considered Material Harm. The relevant Roads and Maritime Environment Manager or Environment Branch Director may contact the DES to assist in making an assessment of the incident, to aid the contractor in determining if the pollution incident should be considered Material Harm. Where Roads and Maritime believes a pollution incident should be considered Material Harm but the contractor disagrees, Roads and Maritime is required by law to notify EPA and other relevant authorities. In this instance the DES or DE would make a determination on whether the incident should be notified by Roads and Maritime as Material Harm. Roads and Maritime would provide details of any notifications made to the contractor.

Even if only limited information is available for a pollution incident being considered Material Harm, each relevant authority must be immediately notified with the information available and updates provided as soon as further relevant information becomes available.

In circumstances where there is doubt about the need to notify a pollution incident as Material Harm, Roads and Maritime and its contractors should always err on the side of notification.

When in doubt, communicate!

Note: Roads and Maritime is not responsible for notifying a Material Harm pollution incident caused by a traffic or vehicle accident where notification has already occurred by someone at the scene. However, if it is believed notification has not been undertaken, Roads and Maritime should undertake notification in accordance with section 5.1.3. Environment Branch can provide advice in this instance (see section 4.4).

5.1.3 Relevant authorities to notify

The relevant authorities that must be notified for a Material Harm pollution incident are listed in tables 5.1.3a and 5.1.3b below. It is important to note the order of notification and phone numbers to use can vary depending on the nature of the pollution incident, as detailed in the two tables.

All of the authorities listed (whether considered relevant or not) must be contacted for each Material Harm pollution incident to satisfy POEO Act requirements. Serious penalties apply to both individuals and corporations for failing to notify Material Harm pollution incidents:

- Maximum penalty for individuals - $500,000
- Maximum penalty for corporations - $2,000,000.

Table 5.1.3a: Authorities to notify for Material Harm pollution incidents that present an immediate threat to human health or property

Order	Authority	Contact Number
1	Fire and Rescue NSW	000
2	NSW EPA environment line	131 555
3	Ministry of Health (via the local Public Health Unit)*	Contact 1300 066 055 to be directed to the local Public Health Unit, or visit the NSW Health Website
4	SafeWork NSW	131 050
5	The Appropriate Regulatory Authority*, being either: • Local council • Western Lands Commissioner for the Western Division (except any part of the Western Division within the area of a local council).	Local council - contact Office of Local Government on 4428 4100, or visit the Office of Local Government website Western Lands Commissioner – phone 6883 5400

Table 5.1.3b: Authorities to notify for Material Harm pollution incidents that do NOT present an immediate threat to human health or property

Order	Authority	Contact Number
1	NSW EPA environment line	131 555
2	The Appropriate Regulatory Authority*, being either: • Local council • Western Lands Commissioner for the Western Division (except any part of the Western Division within the area of a local council).	Local council - contact Office of Local Government on 4428 4100, or visit the Office of Local Government website Western Lands Commissioner – phone 6883 5400

3	Ministry of Health (via the local Public Health Unit)*	Contact 1300 066 055 to be directed to the local Public Health Unit, or visit the NSW Health Website
4	SafeWork NSW	131 050
5	Fire and Rescue NSW	1300 729 579

* The appropriate contact for the Appropriate Regulatory Authority and Public Health Unit will vary according to the geographic location of the activity. These contact numbers should be found in advance and stored for immediate access (e.g. in a project's Construction Environmental Management Plan and/or on site notice boards) should a pollution incident need to be notified.

5.1.4 The relevant information to provide

It is important to avoid speculation on origin, causes or outcomes of a pollution incident in discussions with the authorities. Section 150 of the POEO Act provides the information that needs to be notified, being:

a) The time, date, nature, duration and location of the incident

b) The location of the place where pollution is occurring or is likely to occur, the nature, the estimated quantity or volume and the concentration of any pollutants involved, if known

c) The circumstances in which the incident occurred (including the cause of the incident, if known)

d) The action taken or proposed to be taken to deal with the incident and any resulting pollution or threatened pollution, if known

e) Other information prescribed by the regulations.

Only known information should be provided when notifying of a Material Harm pollution incident. If further information becomes known after the initial notification, that information must immediately be notified to all authorities in accordance with Section 150 (see above). The immediate verbal notification is to be followed by written notification to each relevant authority within seven days of the date on which the incident occurred.

Complying with these notification requirements does not remove the need to comply with any other legislative requirements for incident notification (e.g. requirements under EPL conditions or the Work Health and Safety Act 2011).

5.2 Summary of other regulatory agency notification requirements

Specific statutory requirements relating to the notification of environmental incidents to relevant regulatory agencies are summarised in Table 5.2. Additional requirements adopted by Roads and Maritime are indicated in *italics*. Any notification to regulatory agencies should be indicated in the Environmental Incident Report Form to confirm that any required notifications have been initiated.

Table 5.2: Regulatory agency notification requirements

Legislation / issue	Regulating authority	Section / requirement
Commonwealth Aboriginal and Torres Strait Islanders Heritage Protection Act 1984	Department of the Environment and Energy	Section 20 – requirement to notify the Minister of the discovery of Aboriginal remains.
Contaminated Land Management Act 1997	EPA	Section 60 – requirement to notify if Roads and Maritime activities have contaminated land or if Roads and Maritime owns land that has been contaminated.
Heritage Act 1977	Office of Environment and Heritage	Section 146 – requirement to notify the Heritage Council of the location of the relic once a relic has been discovered or located.
National Parks and Wildlife Act 1974	Office of Environment and Heritage	Section 89A – requirement to notify the location of an Aboriginal object that is the property of the Crown.

Protection of the Environment Operations Act 1997	EPA and other relevant authorities	Section 148 – requirement to immediately notify pollution incidents that cause or threaten Material Harm to the environment (see Section 5.1)
	EPA	*Pro-active reporting to the local EPA officer of offsite pollution incidents that occur as a result of Roads and Maritime activities is encouraged as soon as practicable after the pollution incident occurs.*
Rural Fires Act 1997	NSW Rural Fire Service	Section 64 – requirement to notify an appropriate fire officer of the inability to extinguish any fire burning during a bush fire danger period applicable to the land.
Breach of Conditions of Approval (projects approved under Part 5.1 of the EP&A Act)	Department of Planning and Environment (DPE)	DPE should be notified by the project proponent when there has been a breach of a Condition of Approval (CoA). There may also be other notification requirements included in the CoA.
Water supply catchment areas	*Local water supply authority*	*If an environmental incident has the potential for unapproved impacts on a drinking water supply, the relevant water supply authority must be advised.*

5.3 Requests for written reports from regulatory authorities (activities delivered internally by Roads and Maritime)

Should Roads and Maritime directly receive a request from a regulatory authority for a written report regarding an environmental incident, Environment Branch and Legal Branch must be immediately contacted for advice. No further correspondence (including email) about the incident should be distributed either internally or externally until advice is received. Environment Branch will coordinate with Legal Branch to:

- Assist in the investigation of the incident
- Provide legal advice to the project
- Co-ordinate the preparation of the written response to the regulatory authority.

rms.nsw.gov.au

13 22 13

Customer feedback
Roads and Maritime
Locked Bag 928,
North Sydney NSW 2059

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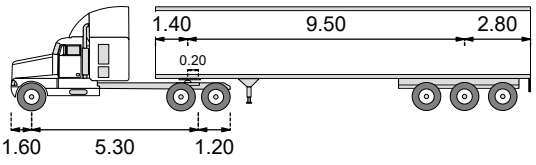
Annexure G - Applicable Swept Path Analysis

www.invarion.com

Vehicle dimensions



Prime mover and semi-trailer

Length: 19.00 m
Width: 2.50 m
Lock to lock time: 4.0 s
Max steering angle: 27.76°
Turn radius (curb to curb): 12.50 m
Turn radius (wall to wall): 13.26 m

Princes Hwy

Burrows Rd S

10 km/h
5 km/h
5 km/h
5 km/h
5 km/h
5 km/h
5 km/h
10 km/h

TCP DRAWN BY: Ben Wiffen

LEVEL 3 TICKET NUMBER (NSW): 0052361446

SIGNATURE:

LEVEL 3 EXP DATE: 04 May 2023

TCP APPROVED BY: Syed Hamdan

PREPARE WORK ZONE TMP NUMBER (NSW): 0052008983

SIGNATURE:

LEVEL 3 EXP DATE: 10th May 2022

LEGEND
- Site Entry Path
- Site Exit Path
- Directional movement
- Front Wheel Path (Truck)
- Rear Wheel Path (Trailer)
- Vehicle

N

MAP REF

Plan Scale

1 : 805 (1cm = 8m)

ISSUE	DESG	APPD	DATE	AMENDMENT DESCRIPTION

CLIENT: John Holland And Seymour Whyte Joint Venture

SYDNEY GATEWAY
A Joint Venture Project
JOHN HOLLAND | SEYMOUR WHYTE

NOTES:
- THIS TRAFFIC GUIDANCE SCHEME WAS DEVELOPED BY COMPETENT AND EXPERIENCED PERSONS AND IN ACCORDANCE WITH THE REQUIREMENTS OUTLINED IN AUSTRALIAN STANDARD - AS1742.3 AND THE ROAD MANAGEMENT ACT 2004. BEFORE THE COMMENCEMENT OF ROUTINE SERVICES OR ANY ORDERED WORKS, ALTUS WILL CARRY OUT A RISK ASSESSMENT AND DEVELOP CONTROLS, MEASURES AND PLANS TO IDENTIFY, ELIMINATE OR MITIGATE ANY HAZARDS.
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SCALE: 1 :1000 (1cm = 10m)

DESIGNED: Benjamin Wiffen DATE: 20/01/2021

APPROVED: Syed Hamdan

DRAWING NUMBER: SYDGW-BURROWS-SWEPT-ST-001

SHEET NO: 1 Of 1 ISSUE: 00

PROJECT: Sydney Gateway Project, Mascot Stage 1

TITLE: Burrows Rd South, Tempe Semi-Trailer 19m Swept Path Site Entry And Exit

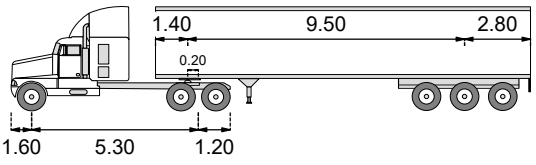
ALTUS TRAFFIC
Safely Managing Risk

Call Altus Traffic
Toll Free (Australia)
1300 TRAFFIC (872 334)
ABN 84 102 768 061

SCI QUAL SCI QUAL

www.invarion.com

Vehicle dimensions



Prime mover and semi-trailer

Length: 19.00 m
Width: 2.50 m
Lock to lock time: 4.0 s
Max steering angle: 27.76°
Turn radius (curb to curb): 12.50 m
Turn radius (wall to wall): 13.26 m

Princes Hwy

Burrows Rd S

10 km/h
10 km/h
5 km/h
5 km/h
5 km/h
5 km/h
10 km/h
10 km/h

TCP DRAWN BY: Ben Wiffen
LEVEL 3 TICKET NUMBER (NSW): 0052361446
SIGNATURE:
LEVEL 3 EXP DATE: 04 May 2023

TCP APPROVED BY: Syed Hamdan
PREPARE WORK ZONE TMP NUMBER (NSW): 0052008983
SIGNATURE:
LEVEL 3 EXP DATE: 10th May 2022

LEGEND
- Site Entry Path
- Site Exit Path
- Directional movement
- Front Wheel Path (Truck)
- Rear Wheel Path (Trailer)
- Vehicle

N

MAP REF

Plan Scale

1 : 805 (1cm = 8m)

ISSUE	DESG	APPD	DATE	AMENDMENT DESCRIPTION

CLIENT: John Holland And Seymour Whyte Joint Venture

SYDNEY GATEWAY
A Joint Venture Project
JOHN HOLLAND | SEYMOUR WHYTE

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SCALE: 1 :1000 (1cm = 10m)
DESIGNED: Benjamin Wiffen
DATE: 20/01/2021
APPROVED: Syed Hamdan
DRAWING NUMBER: SYDGW-BURROWS-SWEPT-ST-002
SHEET NO: 1 Of 1
ISSUE: 00

PROJECT: Sydney Gateway Project, Mascot Stage 1

TITLE: Burrows Rd South, Tempe Semi-Trailer 19m Swept Path Site Entry And Exit

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ABN 84 102 768 061

SCI QUAL SCI QUAL

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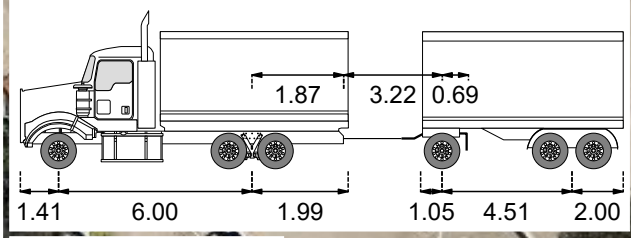
Vehicle dimensions



Truck and trailer (3-axle)

Length: 19.00 m
Width: 2.50 m
Lock to lock time: 4.0 s
Max steering angle: 31.70°
Turn radius (curb to curb): 12.50 m
Turn radius (wall to wall): 13.23 m

Princes Hwy

Burrows Rd S

10 km/h
5 km/h
5 km/h
5 km/h
10 km/h

TCP DRAWN BY: Ben Wiffen

LEVEL 3 TICKET NUMBER (NSW): 0052361446

SIGNATURE:

LEVEL 3 EXP DATE: 04 May 2023

TCP APPROVED BY: Syed Hamdan

PREPARE WORK ZONE TMP NUMBER (NSW): 0052008983

SIGNATURE:

LEVEL 3 EXP DATE: 10th May 2022

LEGEND
- Site Entry Path
- Site Exit Path
- Directional movement
- Front Wheel Path (Truck)
- Rear Wheel Path (Trailer)
- Vehicle

N

MAP REF

Plan Scale

1 : 805 (1cm = 8m)

ISSUE	DESG	APPD	DATE	AMENDMENT DESCRIPTION

CLIENT: John Holland And Seymour Whyte Joint Venture

SYDNEY GATEWAY

A Joint Venture Project JOHN HOLLAND SEYMOUR WHYTE

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SCALE: 1 :1000 (1cm = 10m)

DESIGNED: Benjamin Wiffen DATE: 20/01/2021

APPROVED: Syed Hamdan

DRAWING NUMBER: SYDGW-BURROWS-SWEPT-TD-001

SHEET NO: 1 Of 1 ISSUE: 00

PROJECT: Sydney Gateway Project, Mascot Stage 1

TITLE: Burrows Rd South, Tempe Truck And Dog Swept Path Site Entry And Exit

ALTUS TRAFFIC Safely Managing Risk

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1300 TRAFFIC (872 334)
ABN 84 102 788 061

SCI QUAL SCI QUAL

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Vehicle dimensions

Truck and trailer (3-axle)

Length: 19.00 m
Width: 2.50 m
Lock to lock time: 4.0 s
Max steering angle: 31.70°
Turn radius (curb to curb): 12.50 m
Turn radius (wall to wall): 13.23 m

TCP DRAWN BY: Ben Wiffen

LEVEL 3 TICKET NUMBER (NSW): 0052361446

SIGNATURE:

LEVEL 3 EXP DATE: 04 May 2023

TCP APPROVED BY: Syed Hamdan

PREPARE WORK ZONE TMP NUMBER (NSW): 0052008983

SIGNATURE:

LEVEL 3 EXP DATE: 10th May 2022

LEGEND
- Site Entry Path
- Site Exit Path
- Directional movement
- Front Wheel Path (Truck)
- Rear Wheel Path (Trailer)
- Vehicle

N

MAP REF

Plan Scale

1 : 805 (1cm = 8m)

ISSUE	DESG	APPD	DATE	AMENDMENT DESCRIPTION

CLIENT: John Holland And Seymour Whyte Joint Venture

SYDNEY GATEWAY

A Joint Venture Project: JOHN HOLLAND | SEYMOUR WHYTE

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SCALE: 1 :1000 (1cm = 10m)

DESIGNED: Benjamin Wiffen DATE: 20/01/2021

APPROVED: Syed Hamdan

DRAWING NUMBER: SYDGW-BURROWS-SWEPT-TD-002

SHEET NO: 1 Of 1 ISSUE: 00

PROJECT: Sydney Gateway Project, Mascot Stage 1

TITLE: Burrows Rd South, Tempe Truck And Dog Swept Path Site Entry And Exit

ALTUS TRAFFIC Safely Managing Risk

Call Altus Traffic
Toll Free (Australia)
1300 TRAFFIC (872 334)
ABN 84 102 768 061

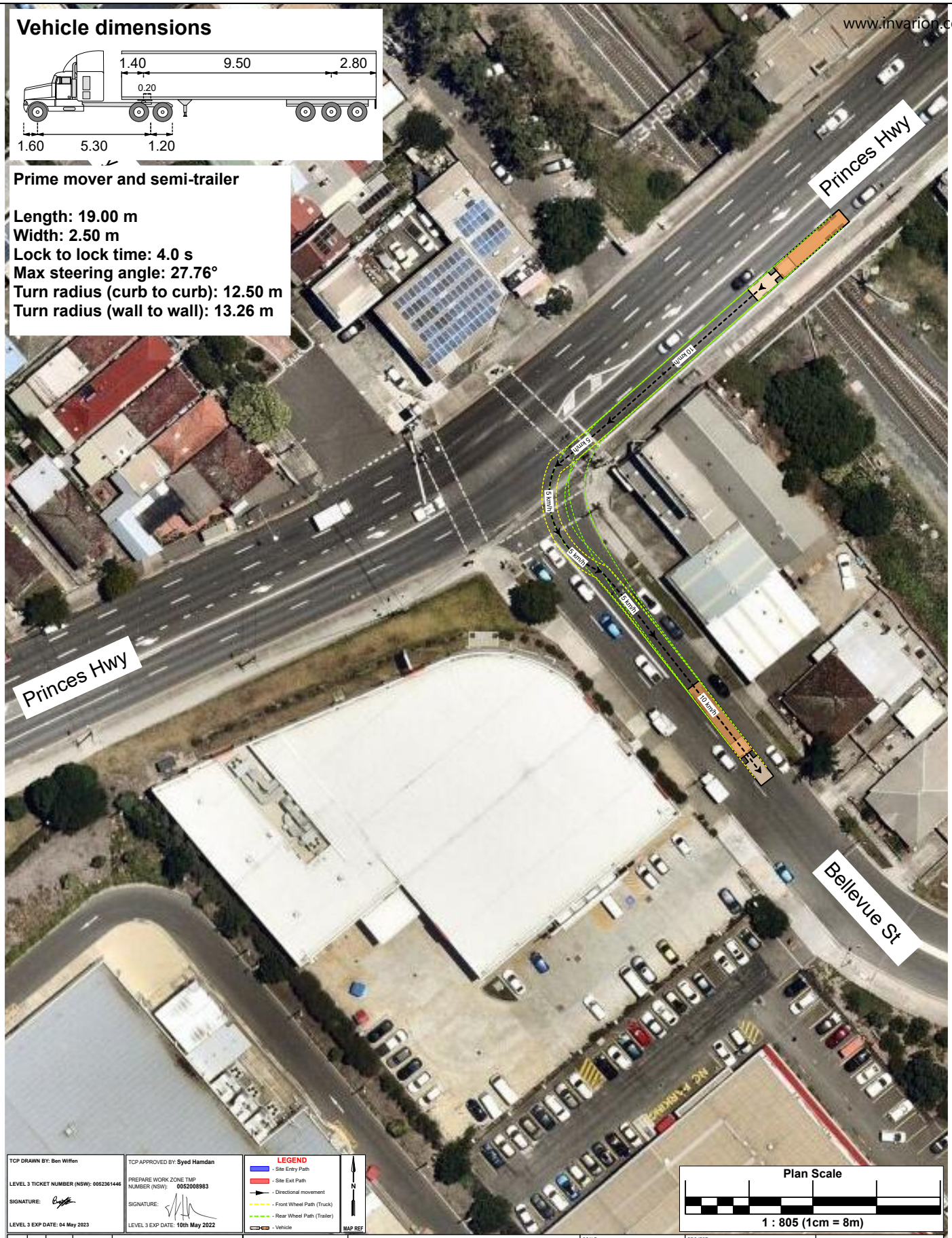
SCI QUAL SCI QUAL

www.invarion.com

Vehicle dimensions

Prime mover and semi-trailer

Length: 19.00 m
Width: 2.50 m
Lock to lock time: 4.0 s
Max steering angle: 27.76°
Turn radius (curb to curb): 12.50 m
Turn radius (wall to wall): 13.26 m



TCP DRAWN BY: Ben Wiffen
LEVEL 3 TICKET NUMBER (NSW): 0052361446
SIGNATURE:
LEVEL 3 EXP DATE: 04 May 2023

TCP APPROVED BY: Syed Hamdan
PREPARE WORK ZONE TMP NUMBER (NSW): 0052008983
SIGNATURE:
LEVEL 3 EXP DATE: 10th May 2022

LEGEND
- Site Entry Path
- Site Exit Path
- Directional movement
- Front Wheel Path (Truck)
- Rear Wheel Path (Trailer)
- Vehicle

N
MAP REF

Plan Scale
1 : 805 (1cm = 8m)

ISSUE	DESG	APPD	DATE	AMENDMENT DESCRIPTION

CLIENT: John Holland And Seymour Whyte Joint Venture

SYDNEY GATEWAY
A Joint Venture Project
JOHN HOLLAND | SEYMOUR WHYTE

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SCALE: 1 :1000 (1cm = 10m)
DESIGNED: Benjamin Wiffen DATE: 20/01/2021
APPROVED: Syed Hamdan
DRAWING NUMBER: SYDGW-PRINC-BELL-SWEPT-ST-001
SHEET NO: 1 Of 1 ISSUE: 00

PROJECT: Sydney Gateway Project, Mascot Stage 1
TITLE: Princes Hwy / Bellevue St, Tempe Semi-Trailer 19m Swept Path Site Entry And Exit

ALTUS TRAFFIC
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1300 TRAFFIC (872 334)
ABN 84 102 768 061
SCI QUAL SCI QUAL

www.invarion.com

Vehicle dimensions

Prime mover and semi-trailer

Length: 19.00 m
Width: 2.50 m
Lock to lock time: 4.0 s
Max steering angle: 27.76°
Turn radius (curb to curb): 12.50 m
Turn radius (wall to wall): 13.26 m

TCP DRAWN BY: Ben Wiffen

LEVEL 3 TICKET NUMBER (NSW): 0052361446

SIGNATURE:

LEVEL 3 EXP DATE: 04 May 2023

TCP APPROVED BY: Syed Hamdan

PREPARE WORK ZONE TMP NUMBER (NSW): 0052008983

SIGNATURE:

LEVEL 3 EXP DATE: 10th May 2022

LEGEND
- Site Entry Path
- Site Exit Path
- Directional movement
- Front Wheel Path (Truck)
- Rear Wheel Path (Trailer)
- Vehicle

N

MAP REF

Plan Scale

1 : 805 (1cm = 8m)

ISSUE	DESG	APPD	DATE	AMENDMENT DESCRIPTION

CLIENT: John Holland And Seymour Whyte Joint Venture

SYDNEY GATEWAY

A Joint Venture Project JOHN HOLLAND SEYMOUR WHYTE

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SCALE: 1 :1000 (1cm = 10m)

DESIGNED: Benjamin Wiffen DATE: 20/01/2021

APPROVED: Syed Hamdan

DRAWING NUMBER: SYDGW-PRINC-BELL-SWEPT-TD-002

SHEET NO: 1 Of 1 ISSUE: 00

PROJECT: Sydney Gateway Project, Mascot Stage 1

TITLE: Princes Hwy / Bellevue St, Tempe Semi-Trailer 19m Swept Path Site Entry And Exit

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SCI QUAL SCI QUAL

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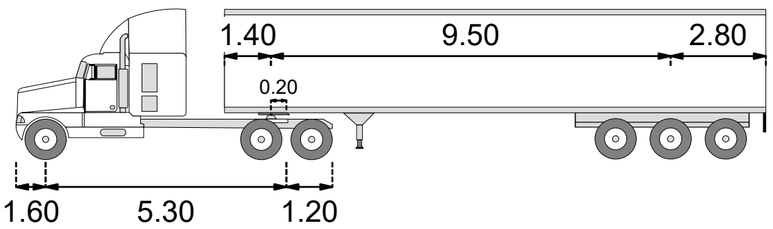
Vehicle dimensions



Prime mover and semi-trailer

Length: 19.00 m
Width: 2.50 m
Lock to lock time: 4.0 s
Max steering angle: 27.76°
Turn radius (curb to curb): 12.50 m
Turn radius (wall to wall): 13.26 m

Princes Hwy

Princes Hwy

5 km/h
5 km/h
10 km/h
5 km/h
5 km/h
10 km/h
10 km/h
10 km/h
10 km/h

Bellevue St

TCP DRAWN BY: Ben Wiffen

LEVEL 3 TICKET NUMBER (NSW): 0052361446

SIGNATURE:

LEVEL 3 EXP DATE: 04 May 2023

TCP APPROVED BY: **Syed Hamdan**

PREPARE WORK ZONE TMP NUMBER (NSW): **0052008983**

SIGNATURE:

LEVEL 3 EXP DATE: **10th May 2022**

LEGEND
- Site Entry Path
- Site Exit Path
- Directional movement
- Front Wheel Path (Truck)
- Rear Wheel Path (Trailer)
- Vehicle

N

MAP REF

Plan Scale

1 : 388 (1cm = 4m)

ISSUE	DESG	APPD	DATE	AMENDMENT DESCRIPTION

CLIENT: John Holland And Seymour Whyte Joint Venture

SYDNEY GATEWAY
A Joint Venture Project
JOHN HOLLAND SEYMOUR WHYTE

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SCALE: 1 :1000 (1cm = 10m)

DESIGNED: Benjamin Wiffen DATE: 20/01/2021

APPROVED: Syed Hamdan

DRAWING NUMBER: SYDGW-PRINC-BELL-SWEPT-ST-003

SHEET NO: 1 Of 1 ISSUE: 00

PROJECT: Sydney Gateway Project, Mascot Stage 1

TITLE: Princes Hwy / Bellevue St, Tempe Semi-Trailer 19m Swept Path Site Entry And Exit

ALTUS TRAFFIC
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ABN 84 102 768 061

SCI QUAL SCI QUAL

www.invarion.com

Vehicle dimensions

Prime mover and semi-trailer

Length: 19.00 m
Width: 2.50 m
Lock to lock time: 4.0 s
Max steering angle: 27.76°
Turn radius (curb to curb): 12.50 m
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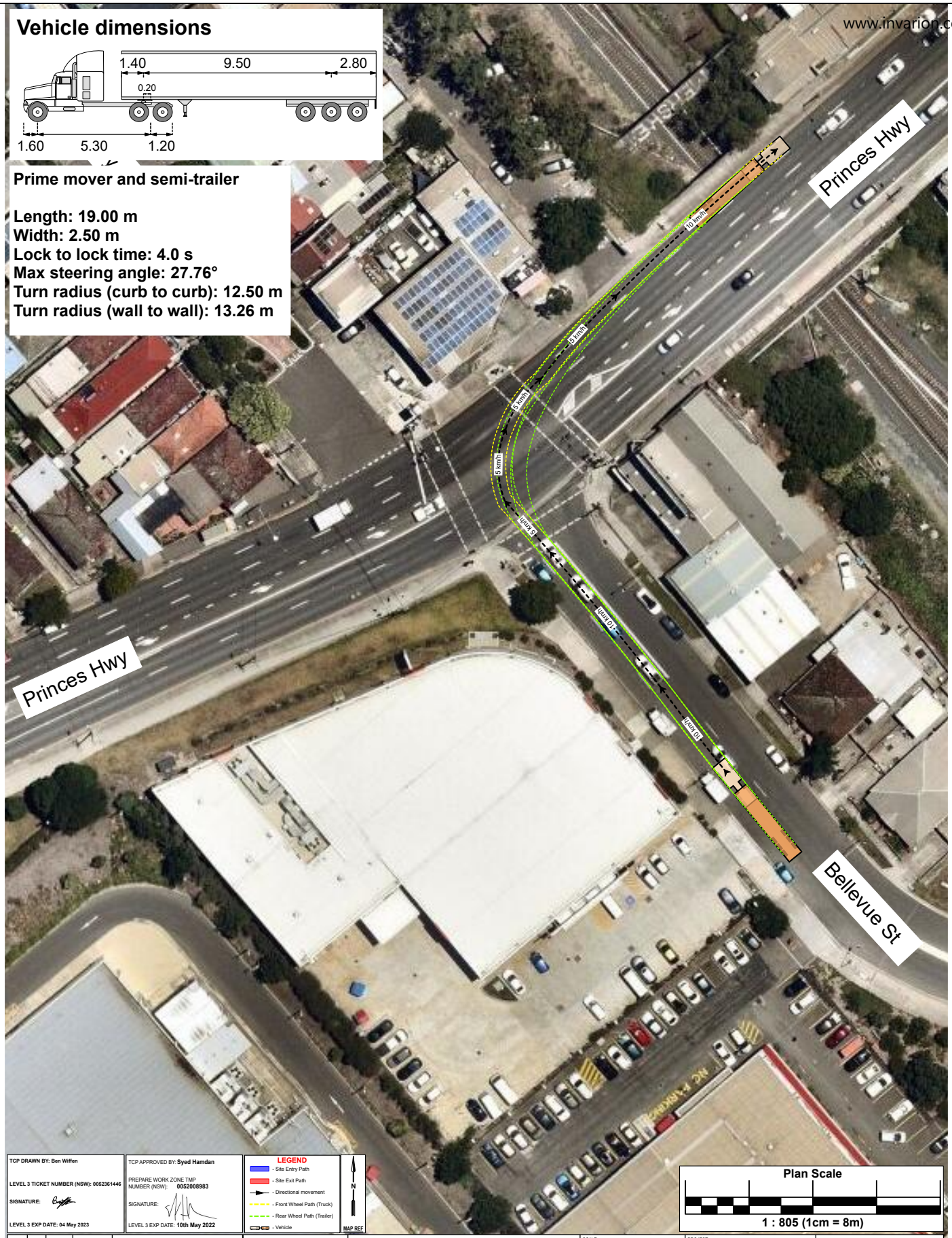

TCP DRAWN BY: Ben Wiffen
LEVEL 3 TICKET NUMBER (NSW): 0052361446
SIGNATURE:
LEVEL 3 EXP DATE: 04 May 2023

TCP APPROVED BY: Syed Hamdan
PREPARE WORK ZONE TMP NUMBER (NSW): 0052008983
SIGNATURE:
LEVEL 3 EXP DATE: 10th May 2022

LEGEND
- Site Entry Path
- Site Exit Path
- Directional movement
- Front Wheel Path (Truck)
- Rear Wheel Path (Trailer)
- Vehicle

N
MAP REF

Plan Scale
1 : 805 (1cm = 8m)

ISSUE	DESG	APPD	DATE	AMENDMENT DESCRIPTION

CLIENT: John Holland And Seymour Whyte Joint Venture

SYDNEY GATEWAY
A Joint Venture Project
JOHN HOLLAND | SEYMOUR WHYTE

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SCALE: 1 :1000 (1cm = 10m)
DESIGNED: Benjamin Wiffen DATE: 20/01/2021
APPROVED: Syed Hamdan
DRAWING NUMBER: SYDGW-PRINC-BELL-SWEPT-ST-004
SHEET NO: 1 Of 1 ISSUE: 00

PROJECT: Sydney Gateway Project, Mascot Stage 1
TITLE: Princes Hwy / Bellevue St, Tempe Semi-Trailer 19m Swept Path Site Entry And Exit

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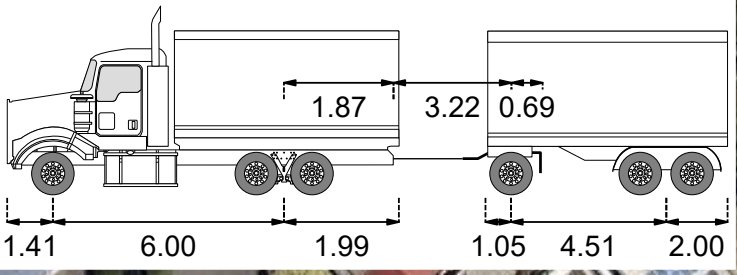
Vehicle dimensions



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Width: 2.50 m
Lock to lock time: 4.0 s
Max steering angle: 31.70°
Turn radius (curb to curb): 12.50 m
Turn radius (wall to wall): 13.23 m

TCP DRAWN BY: Ben Wiffen

LEVEL 3 TICKET NUMBER (NSW): 0052361446

SIGNATURE:

LEVEL 3 EXP DATE: 04 May 2023

TCP APPROVED BY: Syed Hamdan

PREPARE WORK ZONE TMP NUMBER (NSW): 0052008983

SIGNATURE:

LEVEL 3 EXP DATE: 10th May 2022

LEGEND
- Site Entry Path
- Site Exit Path
- Directional movement
- Front Wheel Path (Truck)
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- Vehicle

N

MAP REF

Plan Scale

1 : 805 (1cm = 8m)

ISSUE	DESG	APPD	DATE	AMENDMENT DESCRIPTION

CLIENT: John Holland And Seymour Whyte Joint Venture

SYDNEY GATEWAY

A Joint Venture Project JOHN HOLLAND SEYMOUR WHYTE

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APPROVED: Syed Hamdan

DRAWING NUMBER: SYDGW-PRINC-BELL-SWEPT-TD-001

SHEET NO: 1 Of 1 ISSUE: 00

PROJECT: Sydney Gateway Project, Mascot Stage 1

TITLE: Princes Hwy / Bellevue St, Tempe Truck And Dog Swept Path Site Entry And Exit

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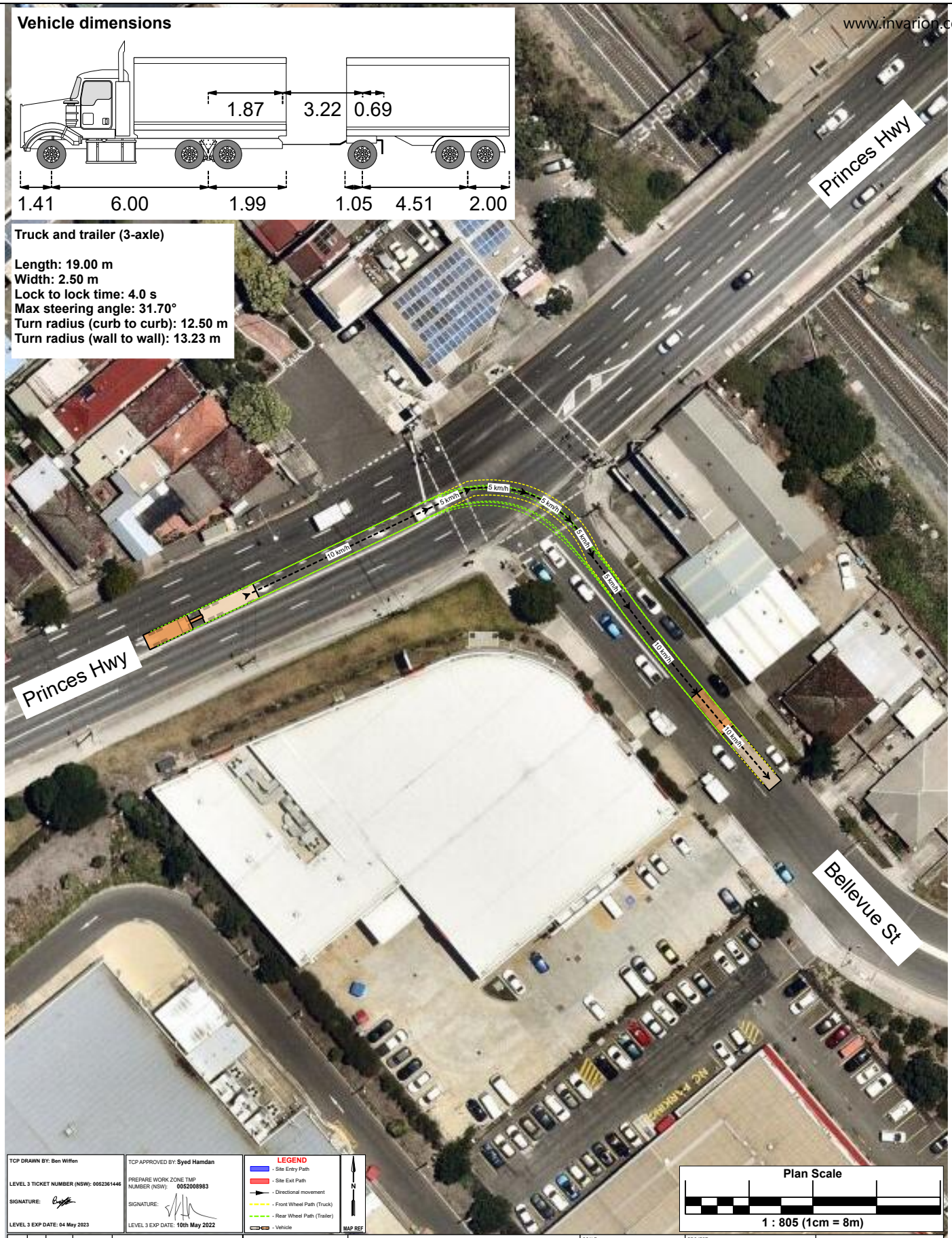

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APPROVED: Syed Hamdan

DRAWING NUMBER: SYDGW-PRINC-BELL-SWEPT-TD-002

SHEET NO: 1 Of 1 ISSUE: 00

PROJECT: Sydney Gateway Project, Mascot Stage 1

TITLE: Princes Hwy / Bellevue St, Tempe Truck And Dog Swept Path Site Entry And Exit

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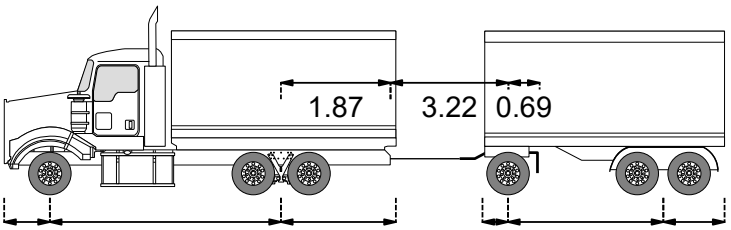

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Princes Hwy

Princes Hwy

Bellevue St

5 km/h
5 km/h
5 km/h
5 km/h
5 km/h
10 km/h
10 km/h
10 km/h

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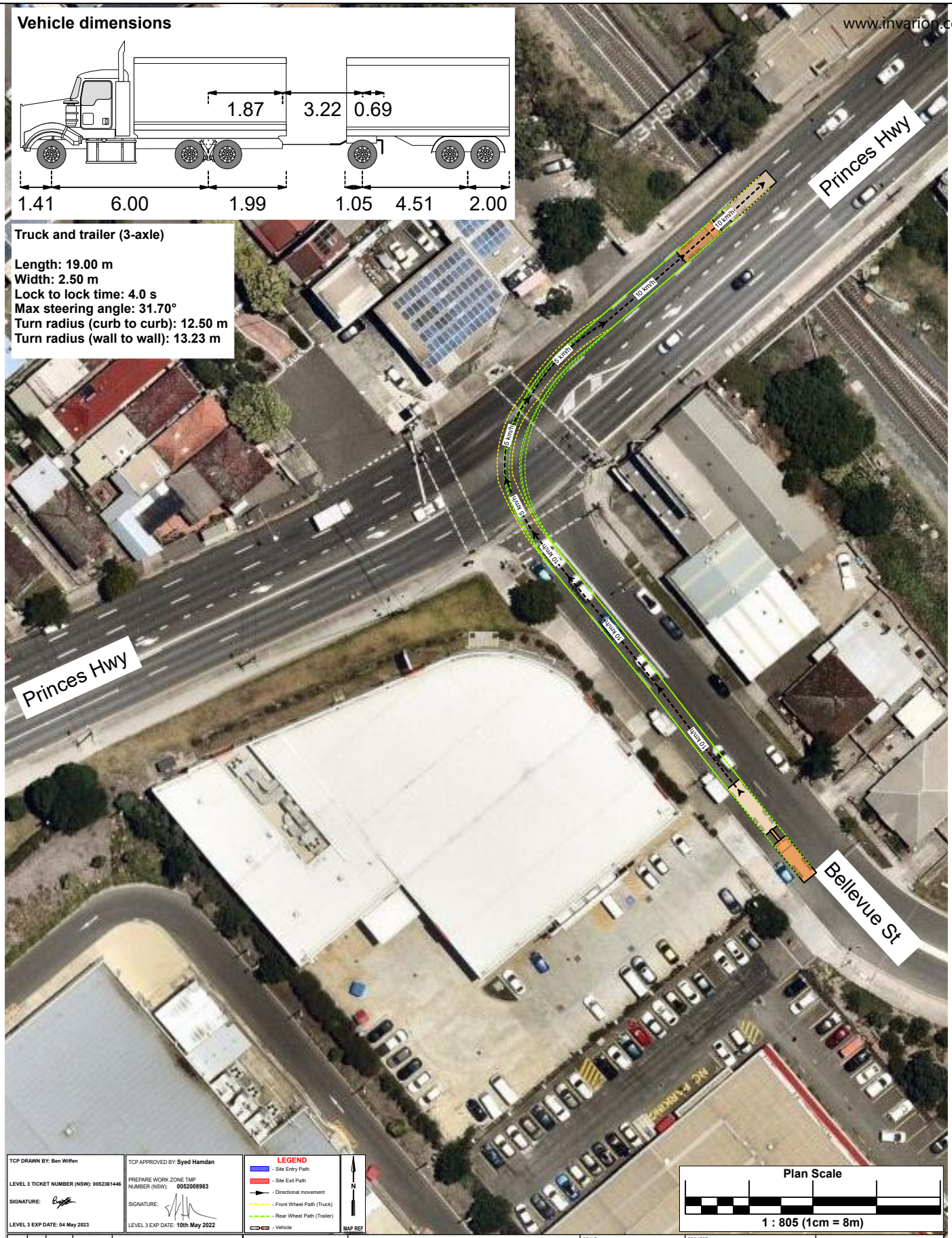

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DRAWING NUMBER: SYDGW-PRINC-BELL-SWEPT-TD-004

SHEET NO: 1 Of 1 ISSUE: 00

PROJECT: Sydney Gateway Project, Mascot Stage 1

TITLE: Princes Hwy / Bellevue St, Tempe Truck And Dog Swept Path Site Entry And Exit

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Annexure H - Construction Noise Vibration Impact Statement (CNVIS)

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Acoustics
Vibration
Structural Dynamics

SYDNEY GATEWAY

Construction Noise and Vibration Impact Statement: Site Establishment

21 January 2021

John Holland Seymour White JV

TL799 01.01 F01 SITE ESTABLISHMENT (r2)

35 1982-2017 ACOUSTIC ENGINEERING EXCELLENCE

Sydney Melbourne Brisbane Gold Coast Kuwait Singapore
Renzo Tonin & Associates ABN 29 117 462 861
Level 1/418A Elizabeth St SURRY HILLS NSW 2010 | PO Box 877 STRAWBERRY HILLS NSW 2012
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Document details

Detail	Reference
Doc reference:	TL799 01.01 F01 SITE ESTABLISHMENT (r2)
Prepared for:	John Holland Seymour White JV
Address:	
Attention:	Robert Muir

Document control

Date	Revision history	Non-issued revision	Issued revision	Prepared	Instructed	Reviewed / Authorised
20.01.2021	First issue	0	1	R. Zhafranata	M. Tabacchi	M. Tabacchi
21.01.2021	Inclusion of only state-based land compound	-	2	R. Zhafranata	M. Tabacchi	M. Tabacchi

File Path: R:\AssocSydProjects\TL751-TL800\TL799 Sydney Gateway\1 Docs\01 SE\TL799 01.01 F01 SITE ESTABLISHMENT (r2).docx

Contents

List of tables

List of figures

1 Introduction

This Construction Noise and Vibration Impact Statement (CNVIS) has been prepared on behalf of John Holland Seymour White Joint Venture (JHSW JV) in accordance with the Site Establishment Management Plan for the construction of the Sydney Gateway Road Project.

1.1 Relevant requirements and purpose of this CNVIS

This CNVIS provides a noise and vibration assessment of the Site Establishment phase of the Sydney Gateway work compound on state-based land.

The aim of this assessment is to minimise the impact of construction noise and vibration on sensitive receivers in accordance with the Site Establishment Management Plan and demonstrate compliance with relevant SSI-9337 Conditions of Approval (CoA).

The proposed works are to be mostly completed during standard construction hours with Out-Of-Hours (OOH) works occurring for activities detailed in CoA E16. The construction hours of work for the Project are defined by the CoA E14 and E15 as outlined in Section 2.2.

1.2 Quality assurance

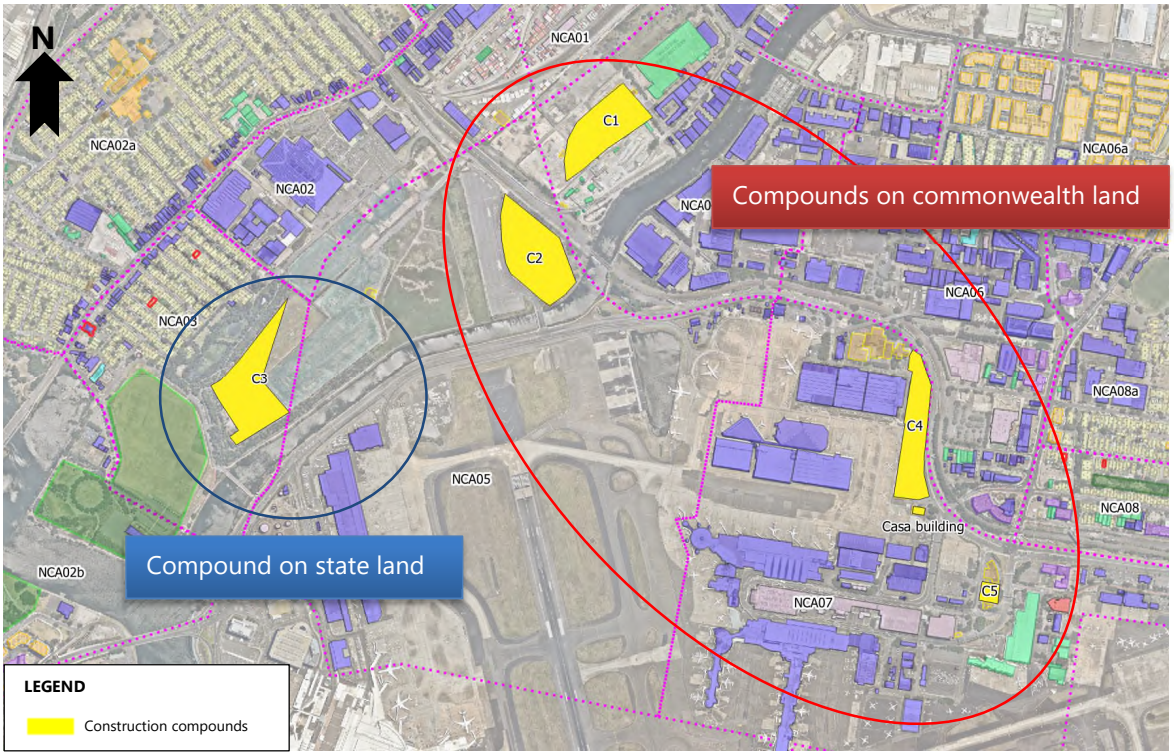
The work documented in this report was carried out in accordance with the Renzo Tonin & Associates Quality Assurance System, which is based on Australian Standard / NZS ISO 9001. Appendix A contains a glossary of acoustic terms used in this report.

2 Description of construction works and hours

2.1 Summary of works addressed in this CNVIS

Site establishment is required at all construction worksites associated with the Sydney Gateway Project works (Figure 2-1). This CNVIS assesses the potential impact of construction noise and vibration associated with the site establishment of the work compound on state-based land (i.e. Compound C3). However, in accordance with CoA E29, cumulative noise impacts from the establishment of the compounds on commonwealth land (i.e. C1, C2, C4, C5, CASA) are also assessed in this CNVIS.

Figure 2-1: Sydney Gateway – Construction Compounds on federal and state land



Site establishment activities, included in this CNVIS, have been detailed in the Site Establishment Management Plan and may continue after the Construction Environment Management Plan (CEMP) is approved. Once the CEMP is approved site establishment activities will be subject to the CEMP controls and mitigations.

The site establishment works will include:

- Site preparation works
- Site survey and site investigation works
- Initial environmental controls
- Remediation

- Site levelling
- Hardstand and site access works
- Demolition of nonheritage structures
- Utilities works
- Installation of offices and workshops
- Fit out, commissioning and installation of remaining site infrastructures

The detailed description of the work aspect for each construction activity listed above is presented in APPENDIX C. Furthermore, a list of plant and equipment to be used for each construction activity is also presented in APPENDIX C.

The works are anticipated to commence in March 2021 and expected to finish in July 2021. The timing of each construction activity is also included in APPENDIX C.

2.2 Construction Hours

Working hours for the Project are defined by CoA E14 and E15. Table 2-1 below consolidates the information provided in the Conditions regarding construction working hours for Project.

Table 2-1: Working hours for construction worksites

CoA	Construction Activity	Monday to Friday	Saturday	Sunday / public holiday
E14	Standard construction	7:00am to 6:00pm	8:00am to 6:00pm	No work[1]
E15	Highly noise intensive works[2]	8:00am to 6:00pm (plus respite[2])	8:00am to 1:00pm (plus respite[2])	No work[1]

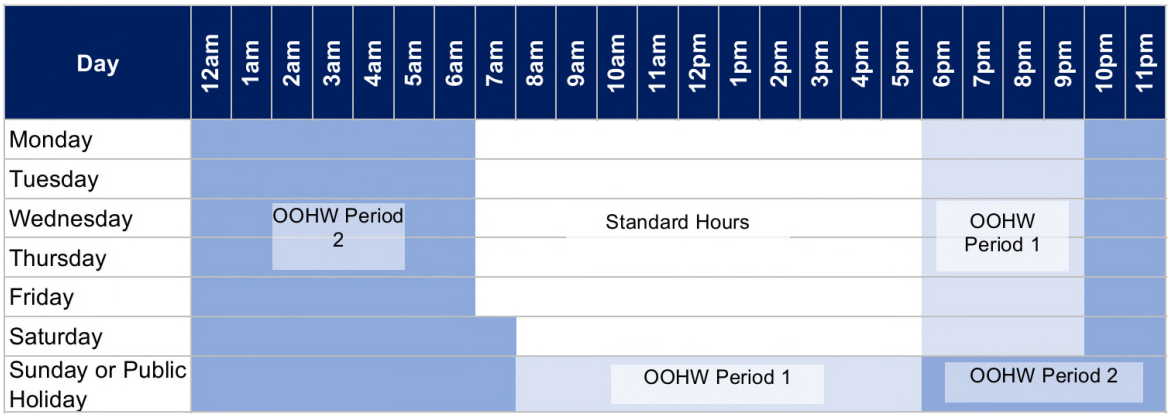
Notes:

1. No work unless permitted and approved.
2. Minimum respite from highly noise intensive works of not less than one (1) hour between each continuous block of works not exceeding three (3) hours.

2.2.1 Assessment periods

The standard hours and OOHW periods are depicted in Figure 2-2. The OOHW periods are further defined as OOHW Period 1 and 2, based on the Transport for NSW Construction Noise and Vibration Strategy (CNVS)[1].

Figure 2-2: Assessment periods



2.2.2 Justification for OOHW

In accordance with SSI-9337 CoA E16, works outside of standard construction hours may be undertaken in the following circumstances:

- For the delivery of material required by the NSW Police Force or other appropriate authority for safety reasons, or
- Where the relevant road authority has advised the Proponent in writing that carrying our Work during standard construction hours would results in a high risk to road network operation performance and a road occupancy licence will not be issued during standard construction hours.

CoA E16 allows under the above circumstances for construction work to be undertaken outside standard construction hours.

All OOH works are to be managed in accordance with the Out of Hours Works Protocol which has been prepared for the project in accordance with CoA E18.

2.3 Construction traffic

When construction related traffic moves on the public road network, a different noise assessment methodology is appropriate as vehicle movements would be regarded as additional road traffic on public roads rather than as part of the construction site's activities.

Construction traffic associated with site establishment works assessed in this CNVIS will be mostly generated during standard construction hours, except for a few OOH deliveries of plant and equipment during utility works. Based on the proposed activities and operations, construction traffic noise impact is likely to be low and has not been considered further in this CNVIS.

2.4 Ground-borne noise

During the proposed construction works, airborne noise is expected to be much higher than ground-borne noise levels at the nearest sensitive receivers. On this basis, the potential impact of ground-borne noise is expected to be negligible and has not been addressed further in this CNVIS.

3 Nearest sensitive receivers

3.1 Land use survey

To assess and manage construction noise and vibration impact, a Land Use Survey has been undertaken to satisfy Condition of Approval (CoA) E13. The Land Use Survey identifies existing land use and development within and around the Sydney Gateway project, including a mix of residential, commercial, industrial and open space uses. The Land Use Survey is incorporated into the GIS platform used as the basis for noise modelling and assessment. In addition, all noise and vibration receivers identified by the land use survey are integrated into the Gatewave software (Section 5.3.6) where the land use will be maintained and kept up to date on a progressive basis.

The Land Use Survey relevant to the work areas presented in this CNVIS is presented on aerial photographs (APPENDIX B) and was used in the preparation of this CNVIS. Land use revision date is shown in the top left corner of every drawings.

3.2 Residential receivers

Further to the Land Use Survey, residential areas have been divided into Noise Catchment Areas (NCAs) based on those established in the EIS for the project [2]. Additional NCAs have been considered to assess potential noise impacts at noise sensitive receivers beyond what have been included in the EIS. All relevant residential sensitive receivers near the project are identified on aerial photographs located in APPENDIX B.

3.3 Other sensitive receivers

Additional to residential receivers, there are 'other' noise and vibration sensitive receivers (e.g. flight simulators, educational institutions, places of worship, recreational areas, etc.) surrounding the work sites that have been identified as part of the Land Use Survey. The nearest 'other' sensitive properties are identified in in APPENDIX B.

3.4 Commercial and industrial premises

All nearby commercial and industrial premises have been considered in this assessment and are identified in APPENDIX B.

3.5 Heritage receivers

Heritage receivers have been identified in EIS [2] and in the land use survey (Section 3.1) and have been considered in this assessment.

4 Construction noise and vibration objectives

4.1 Noise management levels

Construction noise management levels have been determined using the NSW Interim Construction Noise Guideline (ICNG) [3].

The Noise Catchment Area (NCAs) and Noise Management Level (NML) figures in APPENDIX B identify the adopted construction noise management levels (NMLs) for the nearest residential receivers to the Sydney Gateway worksites. The NMLs for residential receivers are based on long-term noise logging conducted by SLR Consulting on behalf of NSW Roads and Maritime Services to quantify ambient noise levels for the Environmental Impact Statement (EIS) [2].

Residential receivers are considered 'noise affected' where construction noise levels are greater than the noise management levels identified in APPENDIX B. The noise affected level represents the point above which there may be some community reaction to noise. Where predicted and/or measured construction noise levels exceed NMLs, all feasible and reasonable work practices will be applied to meet the NMLs.

During standard construction hours, a highly affected noise objective of $L_{Aeq(15min)}$ 75dB(A) applies at all residential receivers.

The NMLs for 'other' sensitive receivers are from the ICNG, as reported in APPENDIX B.

In addition to the objectives identified in APPENDIX B, where construction activities are tonal or impulsive in nature and are described in the ICNG as being particularly annoying, a +5dB(A) correction must be added to the activity noise.

4.2 Vibration management levels

Construction vibration management levels have been determined in accordance with CoA E23 and Section A.3 of the Transport for NSW CNVS.

4.2.1 Disturbance to building occupants (human annoyance)

The acceptable vibration values to assess the potential for human annoyance from vibration are set out in the NSW 'Environmental Noise Management Assessing Vibration: A Technical Guideline' (AVTG) [4].

To assess the potential for vibration impact on human comfort, an initial screening test will be done based on peak velocity units, as this metric is also used for the cosmetic damage vibration assessment. The screening test is based on the continuous vibration velocity (i.e. vibration that continues uninterrupted for a defined period). If the predicted vibration exceeds the initial screening test, the total estimated Vibration Dose Value (i.e. eVDV) will be determined based on the level and duration of the vibration event causing exceedance.

The initial screening test values and VDVs recommended in BS 6472-1992 for which various levels of adverse comment from occupants may be expected are presented in Table 4-1. The 'Low probability of adverse comment eVDV' represent the preferred and maximum value presented in the AVTG.

Table 4-1: Vibration management levels for disturbance to building occupants

Place and Time	Initial screening test Velocity, PEAK, mm/s (>8Hz)	Low probability of adverse comment eVDV $m/s^{1.75}$	Adverse comment possible eVDV $m/s^{1.75}$	Adverse comment probable eVDV $m/s^{1.75}$
Critical areas (day or night)[1]	0.28	0.1 to 0.2	0.2 to 0.4	0.4 to 0.8
Residential buildings 16 hr day[2]	0.56	0.2 to 0.4	0.4 to 0.8	0.8 to 1.6
Residential buildings 8 hr night[2]	0.40	0.1 to 0.2	0.2 to 0.4	0.4 to 0.8
Offices, schools, educational institutions and places of worship (day or night)	1.10	0.4 to 0.8	0.8 to 1.6	1.6 to 2.4
Workshops (day or night)	2.20	0.8 to 1.6	1.6 to 3.2	3.2 to 6.4

1. Examples include hospital operating theatres and precision laboratories where sensitive operations are occurring. There may be cases where sensitive equipment or delicate tasks require more stringent criteria than the human comfort criteria specify above
2. Daytime is 7 am to 10 pm and night-time is 10 pm to 7 am

4.2.2 Structural damage to buildings

The structural damage vibration limits are set out in the British Standard BS 7385-2:1993 Evaluation and measurement for vibration in buildings. Guide to damage levels from ground-borne vibration [5]. In relation to heritage structures deemed structurally unsound, the German Standard DIN 4150-1999 Structural Vibration Part 3: Effects of Vibration on Structures [6] is applied.

It is noted that BS 7385 states that in relation to structural damage from vibration, "A building of historical value should not (unless it is structurally unsound) be assumed to be more sensitive."

Vibration management levels to limit the potential for structural damage to buildings are outlined in Section A.3.3 and A.3.4 of the CNVS. A conservative vibration damage screening level (peak component particle velocity) per receiver type is detailed in the CNVS and outlined below:

- Reinforced or framed structures: 25.0 mm/s
- Unreinforced or light framed structures: 7.5 mm/s
- Heritage structures (structurally unsound): 2.5 mm/s

Where the predicted and/or measured vibration is greater than shown above, a more detailed analysis of the building structure, vibration source, dominant frequencies and dynamic characteristics of the structure will be completed to determine the applicable vibration limit. Heritage buildings found to be structurally sound should not be assumed to be more sensitive to vibration and should therefore be assessed to the screening criterion for reinforced or unreinforced structures, depending on the structure.

4.2.3 Damage to vibration sensitive equipment

There is no explicit guidance on acceptable vibration levels for buildings housing sensitive computer or telecommunications equipment which may require assessment against stricter criteria than those nominated for building damage. The recommendation is that, where applicable, vibration limits should be obtained from equipment manufacturers. In the absence of equipment specific data provided by manufacturers, there are generic vibration criteria that can be used to assess the impact of vibration generating activities on buildings housing vibration sensitive equipment, and these are summarised in Table 4-2 below.

Table 4-2: Acceptable vibration limits for vibration measured on building structure housing sensitive equipment

Subject area	Vibration Limit[1] mm/s,		Description of Use
	RMS[3]	Peak[4]	
Operating room	0.100	0.141	Bench microscopes up to 100 x magnification; laboratory robots
VC-A [2]	0.050	0.071	Bench microscopes at up to 400× magnification, Microelectronics manufacturing equipment – Class A
VC-B [2]	0.025	0.035	Micro surgery, eye surgery, neurosurgery; bench microscopes at magnification greater than 400×, Microelectronics manufacturing equipment – Class B
VC-C [2]	0.0125	0.018	Electron microscopes at up to 30 000× magnification; Microelectronics manufacturing equipment – Class C

1. As measured in one-third octave bands of frequency over the frequency range 5 to 200 Hz. Vibration measured on the building structure near vibrating equipment or in areas containing sensitive equipment.
2. Based on ASHRAE Applications Handbook (SI) 2003 [8] and BS5228.2 2009
3. Root Mean Square value representing the average value of a signal
4. In the absence of Peak limits, RMS limits are converted to Peak by conservatively assuming the vibration signal is sinusoidal and random with a nominal crest factor of 1.414

5 Construction noise assessment

5.1 Noise prediction methodology

Assessment of airborne noise impacts from activities associated with the construction works were determined by modelling the noise sources, receiver locations, topographical features, and possible noise mitigation measures using a Cadna-A computer noise model developed for this project. The model calculates the contribution of each noise source at identified sensitive receiver locations and allows for the prediction of the total noise from a site for the various stages of the construction works.

The noise prediction models consider:

- Location of noise sources varying from 0.5m to 2m above the ground depending on the equipment or plant in use;
- Receiver points at 1.5m above each floor level along all building facades. Predicted noise levels presented in APPENDIX D are the maximum noise levels for each building.
- Height of sources and receivers referenced to one metre digital ground contours for the site area and surrounding area;
- Sound Power Levels (L_w) of plant and equipment likely to be used during the various construction activities are included in Table C1 in APPENDIX C. Table C1 also identifies construction hours plant and equipment would be operating. L_{Aeq} sound power levels are identified for assessment against the construction NMLs. L_{A1} (or L_{Amax}) sound power levels are identified for sleep disturbance assessment.
- Separation distances between sources and receivers;
- Ground factors between sources and receivers varying from 1 for absorptive surfaces (e.g. park land) to 0 for reflective surfaces (e.g. water, concrete, paving);
- Attenuation from barriers (natural and purpose built).

Key details regarding the construction work locations, the likely plant and equipment, and hours of operation were informed by the Design and Construction Teams. This information is presented in APPENDIX C and formed the basis for all modelling assumptions used in this assessment. Noise levels were determined by modelling the noise sources, receiver locations, and operating activities, based on the information presented in APPENDIX C.

5.2 Predicted noise levels

Noise impacts during construction works have been predicted and compared to the noise management levels (NMLs) presented in APPENDIX B Table B1. The following sections present a summary of the predicted noise impacts at each work area in terms of compliance with the NMLs. The colours in the

table indicate whether receivers in the NCA comply with the NML and, where exceedance of the NML occurs, the perceived impact of the exceedance.

The construction activities included in this CNVIS are summarised in Table 5-1. Each construction activity has been grouped into the following two sub-categories:

- Typical activities (T), which will exclude high impact sources (e.g. rock hammer, concrete/road/rail saw, chainsaw, vibratory rollers);
- High impact activities (H), which will include high impact sources (e.g. rock hammer, concrete/road/rail saw, chainsaw, vibratory rollers).

Table 5-1: Summary of construction activities

Work Activity (APPENDIX C)	Work area (APPENDIX B)	Typical activities (T)	High impact activities (H)	Scenario reference code (APPENDIX D)
Site preparation works	C3, CU (all compounds operating at the same time)	√		C3-T, C3-H, CU-T, CU-H
Site survey and site investigation works	C3, CU (all compounds operating at the same time)	√		
Initial environmental controls	C3, CU (all compounds operating at the same time)	√		
Remediation	C3, CU (all compounds operating at the same time)	√	√	
Site levelling	C3, CU (all compounds operating at the same time)	√	√	
Hardstand and site access	C3, CU (all compounds operating at the same time)	√	√	
Demolition of nonheritage structures	C3	√	√	
Utilities	C3, CU (all compounds operating at the same time)	√	√	
Installation of offices and workshops	C3, CU (all compounds operating at the same time)	√	√	
Fit out, commissioning and installation of remaining site infrastructure	C3, CU (all compounds operating at the same time)	√	√	

5.2.1 Standard construction hours

Table 5-2 presents the predicted worst-case construction noise levels for each of the construction stages identified in Table 5-1 at the most affected residential receiver in each NCA during standard construction hours. The results are presented in terms of level above the NML. Detailed predicted L_{Aeq} noise levels are presented APPENDIX D.

The impacts presented are as follow for **Standard Hours:**

- ● Complies with NML
- ❍ < 10dB(A) above NML - construction noise clearly audible
- ◆ > 10dB(A) above NML - construction noise moderately intrusive
- □ > 75dB(A) - highly noise affected

Table 5-2: Summary of construction noise impacts– standard hours

NCA	Worksites (see APPENDIX B)			
	C3		Cumulative[1]	
	T	H	T	H
NCA00	●	●	●	●
NCA01	●	●	●	●
NCA01a	●	●	●	●
NCA02a	●	●	●	●
NCA02b	●	●	●	●
NCA03	❍	◆	❍	◆
NCA06	●	●	●	●
NCA08	●	●	●	●
NCA08a	●	●	●	●
OSR	●	◆	❍	◆

Notes: 1) Cumulative impacts would include concurrent operation of all compounds

During the site establishment works, exceedances of the NMLs have been predicted at noise sensitive receivers within the proximity of the construction compounds. The nearest residential receivers within the proximity of C3 compound in NCA03 are predicted to experience a clearly audible construction noise when typical activities are occurring and a moderately intrusive construction noise when high impact activities are occurring. The remaining residential receivers have been predicted the comply with their corresponding NMLs.

A cumulative scenario has been modelled to assess the noise levels at the most noise-affected receivers in NCA03 (which is in proximity to Compound C3) when works are being conducted concurrently in all compounds on state and commonwealth land. Based on the results in Table 5-2 and APPENDIX D.1, the increase in noise levels at the noise sensitive receivers in NCA03 is predicted to be negligible.

Other sensitive receivers such as commercial and industrial receivers within the proximity of the construction compounds are predicted to experience a moderately intrusive construction noise when high impact activities are occurring at C3 compound.

5.2.2 Out-Of-Hour works

Table 5-3 and Table 5-4 presents the predicted worst-case construction noise levels for each of the construction stages identified in Table 5-1 at the most affected residential receiver in each NCA outside standard construction hours (OOH Period 1 and OOH Period 2).

The results are presented in terms of level above the NML. Detailed predicted L_{Aeq} noise levels are presented APPENDIX D.

The impacts are presented as follow for **OOHW Period 1 and OOHW Period 2:**

- ● Below NML
- ◔ < 5dB(A) above NML - construction noise noticeable
- ◆ 5 to 15dB(A) above NML - construction noise clearly audible
- ■ > 15 to 25dB(A) above NML - construction noise moderately intrusive
- □ >25dB(A) above NML - construction noise highly intrusive

The impacts are presented as follow for **sleep disturbance:**

- ● Below initial screening level
- ■ Above initial screening level but below 'awakening reaction' level
- □ Above 'awakening reaction' level

Table 5-3: Summary of construction noise impacts – OOHW Period 1

NCA	Worksites (see APPENDIX B)					
	C3		Cumulative[1]			
	T	H	T	H		
NCA00	●	●	●	●	-	-
NCA01	●	●	●	●	-	-
NCA01a	●	●	●	●	-	-
NCA02a	●	●	●	●	-	-
NCA02b	●	●	●	●	-	-
NCA03	◆	□	◆	□	-	-
NCA06	●	●	●	●	-	-
NCA08	●	●	●	◆	-	-
NCA08a	●	◆	●	◆	-	-
OSR	●	◆	◆	■	-	-

Notes: 1. Cumulative impacts would include concurrent operation of all compounds

Table 5-4: Summary of construction noise impacts – OOHW Period 2 and sleep disturbance (SD)

NCA	Worksites (see APPENDIX B)					
	C3			Cumulative[1]		
	T	H	SD	T	H	SD
NCA00	●	●	●	●	○	●
NCA01	●	●	●	●	○	●
NCA01a	●	●	●	●	●	●
NCA02a	●	◆	●	●	◆	●
NCA02b	●	○	●	●	○	●
NCA03	■	□	□	■	□	□
NCA06	●	◆	●	●	◆	●
NCA08	●	◆	●	●	◆	●
NCA08a	●	◆	●	●	◆	●
OSR	●	◆	●	◆	■	■

Notes: 1. Cumulative impacts would include concurrent operation of all compounds

Table 5-3 and Table 5-4 present the noise impacts generated from the utility works during OOHW Period 1 and OOHW Period 2. The nearest noise sensitive receivers within the majority of NCAs that are in proximity to the works are predicted to comply with the NMLs when typical activities are occurring. The nearest residential receivers within the proximity of the construction compounds in NCA03 are predicted to experience a highly intrusive construction noise when high impact activities are occurring at C3 compound. JHSW JV has advised that the OOH utility works are likely to occur for one to two nights intermittently. By conducting the OOHW intermittently, the amount of time affected residential receivers are experiencing exceedances is reduced significantly.

A cumulative scenario has been modelled to assess the noise levels at the most noise-affected receivers in NCA03 (which is in proximity to Compound C3) when works are being conducted concurrently in all compounds on state and commonwealth land. Based on the results in Table 5-3,Table 5-4 and APPENDIX D.1, the increase in noise levels at the noise sensitive receivers in NCA03 is predicted to be negligible.

Other sensitive receivers within the proximity of the works are predicted to exceed the OOH NMLs. However, it should be noted that other sensitive receivers such as commercial and industrial receivers are unlikely to be operational during the OOH periods.

Due to the proximity of the residential receivers in NCA03 to the works, it is likely that maximum instantaneous noise levels from OOH utility works are above the sleep disturbance maximum noise level (i.e. 55dBA L_{max} internal level). Toolbox talks will be used to advise all personnel of the need to follow quiet work practices during OOH periods, including avoiding excessive acceleration from a stopped position and vigorous slamming of truck doors and warning personnel of the need to respect the residential receivers surrounding the local area work sites. The potential of loose items or plant/equipment that could generate metal-on-metal bangs will be identified and managed. Other

5.3 Noise mitigation and management

5.3.1 High noise impact activities

All site establishment works assessed in this CNVIS will be mostly completed during standard construction hours, except for a few OOH works such as utility works. Potential impact from high noise impact activities is unavoidable during the site establishment, when there is limited opportunity to install physical noise mitigation measures.

During standard construction hours, respite from activities resulting in high noise impact (i.e. when predicted levels are above 75dB(A) at residential receivers) will be provided by limiting activities as follows to satisfy CoA E15:

- Between the hours of 8:00am to 6:00pm Monday to Friday
- Between the hours of 8:00am to 1:00pm Saturday, and
- In continuous blocks not exceeding three hours each with a minimum respite from those activities and works of not less than one hour between each block, except as expressly permitted by the EPL.

For the purposes of this requirement 'continuous' includes any period during which there is less than one-hour respite between ceasing and recommencing any of the work that is subject to this requirement.

5.3.2 Noise control and management measures

The following noise mitigation and management measures are recommended to reduce potential noise impacts, where reasonable and feasible.

Table 5-5: Site Noise Control Measures

Control Type	Control Measure	Typical Use
At-Source Control Measures	Plant and equipment noise verification monitoring	Attended measurements will be undertaken for items which will be used for more than two months if noisy plant and equipment is identified during inspections and/or attended noise monitoring to confirm actual plant sound power levels are within the limits prescribed in Table C1 (APPENDIX C).
	Noise control kits	Plant that is brought to site should meet the sound power limits identified in Table C1. Where plant exceeds limits then the plant may require installation of 'noise control kits' to comply with the noise limits set in Table C1. Such 'noise control kits' comprise: • high performance 'residential-grade' exhaust mufflers, • additional engine cowling / enclosure lined inside with sound absorbent industrial-grade foam, and • air intake and discharge silencers / louvres. • The requirement of fitting 'noise control kits' onto the identified plant, shall be confirmed during monitoring.
	Limit equipment in use	Only the equipment necessary during each stage of the work will be used.

Control Type	Control Measure	Typical Use
	Timing of equipment in use	Where practicable, limit high noise activities, such as jack hammering and chain sawing, to after 8 am where residential receivers are identified as highly noise affected.
	Limit activity duration	Any equipment not in use for extended periods shall be switched off. For example, heavy vehicles should switch engines off when not in use.
	Use and siting of plant	Avoid/ limit simultaneous operation of noisy plant and equipment within discernible range of a sensitive receiver. Direct noise-emitting plant away from sensitive receivers where practicable. Locate fixed location plant items as far from sensitive receivers as practicable.
	Equipment selection	Use quieter and less noise/ vibration emitting construction methods where feasible and reasonable. Wherever practical, piling activities that affect sensitive receivers shall be undertaken using quieter alternative methods than impact or percussion piling, such as bored piles or vibrated piles.
	Respite periods	Respite periods are to be confirmed following receipt of the EPL and consultation with the surrounding sensitive receivers. In the absence of the EPL, plant and equipment generating noise levels above 75 dB(A) at the nearest residential receiver have been considered as high noise impact.
	Non-tonal reversing alarms	Alternatives reverse alarm, such as 'quackers' will be installed on all plant and equipment, where practicable.
Path Control Measures	Temporary noise screens	Where practicable, construction worksites will utilise temporary noise screens (e.g. FlexShield, Echo-barrier, or similar) to provide noise screening. Temporary noise screens can provide up to 10 dB noise reduction, where they can break line of sight.
Noise Management Measures	Site inductions & Toolbox Talks	All employees, contractors and subcontractors are to receive a Project induction. The environmental component may be covered in toolboxes and should include: • location of nearest sensitive receivers • relevant project specific and standard noise and vibration mitigation measures; • permissible hours of work; • OOHW Procedure and Form • construction employee parking areas.
	Community consultation	Inform community of construction activity and potential impacts a minimum of seven days prior to commencement of works.
	Behavioural practices	No swearing or unnecessary shouting or loud stereos/radios on site. No dropping of materials from height, throwing of metal items and slamming of doors.
	Noise monitoring	Noise monitoring is to be carried out as detailed in this CNVIS

5.3.3 Additional noise mitigation measures

In accordance with the TfNSW CNVS, where, after application of all reasonable and feasible mitigation measures, the $L_{Aeq(15minute)}$ airborne construction noise levels are still predicted to exceed the NMLs, additional airborne noise mitigation measures can be applied to limit the risk of annoyance from construction noise.

APPENDIX D.3 presents a summary of the additional noise mitigation measures applicable for construction activities where, after application of all reasonable and feasible mitigation options, construction noise levels still exceed the NMLs.

Table 5-6: Additional airborne noise mitigation measures

Construction hours	Predicted airborne $L_{Aeq(15min)}$ noise level at receiver			Additional mitigation measures	Additional mitigation measure code
	Receiver perception	dB(A) above RBL	dB(A) above NML		
Standard Hours	Noticeable	5 to 10	0	-	-
	Clearly Audible	10 to 20	≤ 10	-	-
	Moderately intrusive	20 to 30	10 to 20	PN, V	**AM2**
	Highly intrusive	> 30	> 20	PN, V	**AM2**
	75dBA or greater	N/A	N/A	PN, SN, V	**AM3**
OOHW Period 1	Noticeable	5 to 10	≤ 5	-	
	Clearly Audible	10 to 20	5 to 15	PN	AM1
	Moderately intrusive	20 to 30	15 to 25	PN, V, SN, RO	AM4
	Highly intrusive	> 30	> 25	PN, V, SN, RO, RP#, DR#	**AM5**
OOHW Period 2	Noticeable	0 to 10	< 5	PN	AM1
	Clearly Audible	10 to 20	5 to 15	PN, V	AM2
	Moderately intrusive	20 to 30	15 to 25	PN, V, SN, RP, DR	**AM6**
	Highly intrusive	> 30	> 25	PN, V, SN, AA, RP, DR	**AM7**

Notes: PN = Project notification V = Verification monitoring SN = Specific notifications, individual briefing or phone call

RO = Project specific respite offer RP = Project specific respite offer DR = Duration reduction

AA = Alternative accommodation (only offered if HNIW are on more than two nights over a seven day rolling period in accordance with CoA E20)

Respite periods and duration reduction are not applicable when works are carried out during OOHW Period 1 Day only (i.e. Saturday 6am – 7am and 1pm to 6pm, Sundays/ Public Holidays 8am to 6pm)

5.3.4 Notification of out-of-hours works

Prior to the commencement of construction works, receivers identified in APPENDIX D (Table D.3) will be notified to advise that noise from the works may at times be audible. Affected receivers will be notified prior to commencement of works (recommendation: not less than 5 calendar days and not more than 14 calendar days before the works are to be undertaken). All potentially impacted receivers will be kept informed of:

- the nature of works to be carried out and reason that the work is required to be undertaken outside standard hours,
- a diagram that clearly identifies the location of the proposed works in relation to nearby cross streets and local landmarks,
- dates and times of the works, and any relevant time restrictions that apply to the works (i.e. respite nights, as described in APPENDIX C,
- the expected noise levels and duration of the works,
- appropriate enquiries and complaints contact details.

5.3.5 Attended noise monitoring

Attended noise monitoring is to be undertaken to verify that noise levels resulting from construction works are in accordance with the levels predicted in this CNVIS, subject to obtaining the property owner/occupier's consent to access the property (where required). Noise monitoring should be carried out on or near the property boundary at a location representative of the worst affected location (i.e. in publicly accessible areas on or near the nominated receivers, typically at ground level).

Table 5-7 identifies potential monitoring locations to confirm the construction noise levels are consistent with the predicted noise levels in this CNVIS.

Table 5-7: Nominated verification monitoring locations

Worksite	NCA	Nominated receiver address
C3	NCA03	5 South Street, Tempe NSW 2044
C3	NCA03	43 South Street, Tempe NSW 2044

Noise monitoring should follow the procedures outlined in the Noise Monitoring Program.

5.3.6 Managing site specific activities and cumulative noise impacts (Gatewave)

This CNVIS has established the overall impacts associated with the proposed works. A 3D construction noise and vibration management tool (Gatewave, www.gatewave.com.au) has been developed specifically for the Sydney Gateway Project to allow specific work areas and activities to be assessed as construction works progress. It also allows cumulative noise impact from other aspects of the Project or, where relevant noise from other construction projects, to be assessed and managed in accordance with relevant CoA.

Gatewave will be used regularly to plan, assess and manage works progressively.

Gatewave incorporates ground elevation contours, building heights, the built environment and atmospheric conditions to predict construction noise in accordance with the International Standard ISO 9613-2:1996 implementing quality standard ISO 17534-1:2015. All sensitive receivers identified by the land use survey are integrated into the Gatewave tool.

6 Construction vibration impacts

6.1 Minimum working distances for vibration intensive plant

From the plant and equipment listed in APPENDIX C, high vibration generating plant and equipment are summarised for each work activity in Table 6-1 below.

Table 6-1: Vibration generating plant and equipment

Activity	Plant/ equipment	Work area (see APPENDIX B)/ Work activity
		Compound C3
Site preparation works	-	-
Site survey and site investigation works	Drill rig	√
	Wacker packer	√
Initial environmental controls	-	-
Remediation	Smooth drum roller (13T) – High Vibration	√
	Wacker packer	√
Site levelling	Smooth drum roller (13T) – High Vibration	√
Hardstand and site access	Smooth drum roller (13T) – High Vibration	√
	Wacker packer	√
Demolition of nonheritage structures	Excavators with hammers (35-45T)	√
	Concrete cutting saw	√
	Wacker packer	√
Utilities	Excavators with hammers (35-45T)	√
	Concrete cutting saw	√
	Wacker packer	√
Installation of offices and workshops	Concrete cutting saw	√
Fit out, commissioning and installation of remaining infrastructures	Concrete cutting saw	√

Potential vibration generated to receivers is dependent on separation distances, the intervening soil and rock strata, dominant frequencies of vibration, and the receiver structure. The recommended minimum working distances for vibration intensive plant in Table 6-2 and Table 6-3 are taken from a database of vibration levels measured at various sites or obtained from other sources (e.g. BS5228-2:2009). They are not specific to these works as final vibration levels are dependent on many factors including the actual plant used, its operation and the intervening geology between the activity and the receiver.

Site specific minimum working distances for vibration significant plant items must be measured on site where plant and equipment are likely to operate close to or within the recommended minimum working distances for cosmetic damage (Table 6-2).

Table 6-2: Minimum working distances (m) for structural damage (continuous vibration)

Plant item	Minimum working distance (m)		
	Reinforced or frame structures (Line 1)[1]	Screening criteria for non-heritage structures	Screening criteria for heritage structures
		Unreinforced or light framed structures (Line 2)[1]	Structurally unsound heritage structures[2]
Concrete cutting saw	5[3]	5[3]	5[3]
Compactor / Wacker packer	5	5	5
Drill rig	5	5	10
Excavators with hammers (35-45T)	5	5	10
Smooth drum roller (13T) – High Vibration	5	5	15

Notes:

1: Initial screening test criteria reduced by 50% due to potential dynamic magnification in accordance with BS7385.

2: In accordance with CNVMP, a site inspection should determine whether a heritage structure is structurally unsound.

3: Minimum working distances are in 5m increments only to account for the intrinsic uncertainty of this screening method.

The minimum working distances for human annoyance from vibration significant plant items are identified in Table 6-3. Note that these distances are determined considering continuous vibration (e.g. plant operating in the same spot for 15h during the day and 9h at night) as an initial screening limit. This is a conservative approach as the likelihood of this occurring is very low considering normal use of these vibration generating plant. The daily use of this plant in the same location will unlikely to be more than a couple of hours.

Table 6-3: Minimum working distances (m) for human annoyance (screening limit)

Plant item	Minimum working distances (m)				
	Critical areas[1,4]	Residences		Offices[3,4]	Workshops[4]
		Day[2]	Night[2]		
Concrete cutting saw	15	10	10	5	5
Compactor / Wacker packer	20	10	15	5	5
Drill rig	30	20	20	10	10
Excavators with hammers (35-45T)	40	25	30	20	15
Smooth drum roller (13T) – High Vibration	105	55	75	30	15

Notes 1: Examples include hospital operating theatres and precision laboratories where sensitive operations are occurring.

2: Daytime is 7 am to 10 pm; Night-time is 10 pm to 7am.

3: Examples include offices, schools, educational institutions and place of worship.

4: Applicable when in use.

5: Minimum working distances are in 5m increments only to account for the intrinsic uncertainty of this screening method.

6.2 Vibration assessment

6.2.1 Structural damage

The numbers of buildings which are close to or within the minimum working distances for cosmetic damage are shown in Table 6-4. More detailed results are presented in APPENDIX E.

Table 6-4: Number of buildings within minimum working distances for cosmetic damage

Activity	Plant/ equipment	Number of buildings[1]	
		C3	
		NH[2]	H[3]
Site survey and site investigation works	Drill rig	0	0
	Wacker packer	0	0
Remediation	Smooth drum roller (13T) – High Vibration	0	0
	Wacker packer	0	0
Site levelling	Smooth drum roller (13T) – High Vibration	0	0
Hardstand and site access	Roller smooth/padfoot (12T)	0	0
	Wacker packer	0	0
Demolition of nonheritage structures	Excavators with hammers (35-45T)	0	0
	Concrete cutting saw	0	0
	Wacker packer	0	0
Utilities	Excavators with hammers (35-45T)	0	0
	Concrete cutting saw	0	0
	Wacker packer	0	0
Installation of offices and workshops	Concrete cutting saw	0	0
Fit out, commissioning and installation of remaining infrastructures	Concrete cutting saw	0	0

Notes: 1. Site inspection should determine structural conditions of all potentially vibration affected buildings.
2. NH = number of buildings potentially above the screening criteria for non-heritage structures
3. H = number of buildings potentially above the screening criteria for heritage structures

There are no buildings/structures within the minimum working distances established for cosmetic damage. No vibration mitigation and management measures are required.

6.2.2 Human annoyance

The numbers of buildings where there is potential for adverse comment from or disturbance from vibration are shown in Table 6-5. More detailed results are presented in APPENDIX E.

Table 6-5: Number of buildings within minimum working distances for human annoyance

Worksite	Plant/ equipment	Maximum number of buildings[6]				
		Critical areas[1,4]	Residences[5]		Offices[3,4]	Workshops[4]
			Day[2]	Night[2]		
C3 compound	Concrete cutting saw Compactor / Wacker packer Drill rig Excavators with hammers (35-45T) Smooth drum roller (13T) – High Vibration	0	0	0	0	0

Worksite	Plant/ equipment	Maximum number of buildings[6]				
		Critical areas[1,4]	Residences[5]		Offices[3,4]	Workshops[4]
			Day[2]	Night[2]		

Notes:
1) Examples include hospital operating theatres and precision laboratories where sensitive operations are occurring.
2) Daytime is 7 am to 10 pm; Night-time is 10 pm to 7am.
3) Examples include offices, schools, educational institutions and place of worship.
4) Applicable when in use.
5) Hotels and childcare centres are included in the residence category
6) The most vibration intensive plant has been used to estimate the maximum number of buildings within MWD for human annoyance

From Table 6-5, there are no receivers exposed to vibration above the screening limit for human annoyance. No vibration mitigation and management measures are required.

7 Conclusion

In conclusion, construction noise and vibration associated with the site establishment of all construction compounds for the Sydney Gateway project have been identified and described in this report. The noise sensitive receivers surrounding the works areas and the relevant construction noise objectives have been identified and discussed to allow the assessment of potential construction noise and vibration impacts.

The works would be mainly carried during standard construction hours for approximately 4 months. However, some unavoidable works would need to be undertaken outside standard construction hours where Road Occupancy Licence (ROL) or utility service operators restrictions will not allow works during the day.

Construction noise

The expected construction noise levels have been predicted and presented in Section 5.2 and APPENDIX D. During the site establishment works, exceedances of the NMLs have been predicted at noise sensitive receivers within the proximity of the construction compounds. The nearest residential receivers within the proximity of C3 compound in NCA03 are predicted to experience a clearly audible construction noise when typical activities are occurring and a moderately intrusive construction noise when high impact activities are occurring. The remaining residential receivers have been predicted the comply with their corresponding NMLs.

A cumulative scenario has been modelled to assess the noise levels at the most noise-affected receivers in NCA03 when works are being conducted concurrently in all compounds on state and commonwealth land. The increase in noise levels at the noise sensitive receivers in NCA03 is predicted to be negligible.

All relevant mitigation measures are presented in Section 5.3 to reduce potential noise impact.

Construction traffic

Construction traffic associated with site establishment works assessed in this CNVIS will be mostly generated during standard construction hours, except for a few OOH deliveries of plant and equipment during utility works. Based on the proposed activities and operations, construction traffic noise impact is likely to be low.

Ground-borne noise

Potential impact of ground-borne noise is expected to be negligible.

Construction vibration

Vibration impacts have been presented in Section 6. There are no receivers/buildings/structures within the minimum working distances for both structural damage and human annoyance. No vibration mitigation and management measures are required.

References

1. Transport for NSW, Construction Noise and Vibration Strategy, ST-157/4.1, version 4.1, 24 April 2019

2. Sydney Gateway Road project, Road Technical advisory and Environmental Advisory Services, Technical Working Paper 2 – Noise and Vibration, LSR ref: 610.17848-R02, version v1.3, November 2019

3. Department of Environment and Climate Change 2009 NSW Interim Construction Noise Guideline (ICNG),

4. Department of Environment Conservation NSW 2006 Assessing Vibration: a technical guideline

5. BS 7385 Part2-1993, Evaluation and measurements for vibration in buildings Part 2

6. German Standard DIN 4150-3: 1999-02, Structural vibration - Effects of vibration on structures, February 1999

7. British Standard BS 6472-2008, Evaluation of human exposure to vibration in buildings (1-80Hz)

8. ASHRAE Applications Handbook (SI) 2003, Chapter 47 Sound and Vibration Control, pp47.39-47.40

9. Australian Standard 2834-1995 Computer Accommodation, Chapter 2.9 Vibration, p16

10. Australian Standard AS/NZS 2107:2000 *Acoustics - Recommended design sound levels and reverberation times for building interiors*

APPENDIX A Glossary of terminology

The following is a brief description of the technical terms used to describe noise to assist in understanding the technical issues presented.

Adverse weather	Weather effects that enhance noise (that is, wind and temperature inversions) that occur at a site for a significant period of time (that is, wind occurring more than 30% of the time in any assessment period in any season and/or temperature inversions occurring more than 30% of the nights in winter).
Ambient noise	The all-encompassing noise associated within a given environment at a given time, usually composed of sound from all sources near and far.
Assessment period	The period in a day over which assessments are made.
Assessment point	A point at which noise measurements are taken or estimated. A point at which noise measurements are taken or estimated.
Attenuation	The reduction in the level of sound or vibration.
AVTG	Assessing Vibration – a technical guideline (DEC 2006)
Background noise	Background noise is the term used to describe the underlying level of noise present in the ambient noise, measured in the absence of the noise under investigation, when extraneous noise is removed. It is described as the average of the minimum noise levels measured on a sound level meter and is measured statistically as the A-weighted noise level exceeded for ninety percent of a sample period. This is represented as the L90 noise level (see below).
CNVG	Construction Noise and Vibration Guideline (Roads and Maritime 2016)
CNVIS	Construction Noise and Vibration Impact Statement
CoA	Condition of Approval
Decibel [dB]	The units that sound is measured in. The following are examples of the decibel readings of every day sounds: 0dB The faintest sound we can hear 30dB A quiet library or in a quiet location in the country 45dB Typical office space. Ambience in the city at night 60dB CBD mall at lunch time 70dB The sound of a car passing on the street 80dB Loud music played at home 90dB The sound of a truck passing on the street 100dB The sound of a rock band 115dB Limit of sound permitted in industry 120dB Deafening
dB(A)	A-weighted decibels. The A- weighting noise filter simulates the response of the human ear at relatively low levels, where the ear is not as effective in hearing low frequency sounds as it is in hearing high frequency sounds. That is, low frequency sounds of the same dB level are not heard as loud as high frequency sounds. The sound level meter replicates the human response of the ear by using an electronic filter which is called the "A" filter. A sound level measured with this filter switched on is denoted as dB(A). Practically all noise is measured using the A filter.
dB(C)	C-weighted decibels. The C-weighting noise filter simulates the response of the human ear at relatively high levels, where the human ear is nearly equally effective at hearing from mid-low frequency (63Hz) to mid-high frequency (4kHz), but is less effective outside these frequencies.
DEC	Department of Environment and Conservation (now EPA)
DECC	Department of Environment and Climate Change (now EPA)
DECCW	Department of Environment, Climate Change and Water (now EPA)

DP&E	NSW Department of Planning and Environment
ECRTN	Environmental Criteria for Road Traffic Noise (EPA 1999)
EIS	Environmental Impacts Statement
EPA	NSW Environment Protection Authority
Feasible and reasonable	Consideration of best practice taking into account the benefit of proposed measures and their technological and associated operational application in the NSW and Australian context. Feasible relates to engineering considerations and what is practical to build. Reasonable relates to the application of judgement in arriving at a decision, taking into account mitigation benefits and cost of mitigation versus benefits provided, community views and nature and extent of potential improvements.
Frequency	Frequency is synonymous to pitch. Sounds have a pitch which is peculiar to the nature of the sound generator. For example, the sound of a tiny bell has a high pitch and the sound of a bass drum has a low pitch. Frequency or pitch can be measured on a scale in units of Hertz or Hz.
GIS	Geographic Information System
ICNG	Interim Construction Noise Guideline (DECC, 2009)
INP	NSW Industrial Noise Policy (EPA, 2000)
Impulsive noise	Having a high peak of short duration or a sequence of such peaks. A sequence of impulses in rapid succession is termed repetitive impulsive noise.
Intermittent noise	The level suddenly drops to that of the background noise several times during the period of observation. The time during which the noise remains at levels different from that of the ambient is one second or more.
L_{Max}	The maximum sound pressure level measured over a given period.
L_{Min}	The minimum sound pressure level measured over a given period.
L_1	The sound pressure level that is exceeded for 1% of the time for which the given sound is measured.
L_{10}	The sound pressure level that is exceeded for 10% of the time for which the given sound is measured.
L_{90}	The level of noise exceeded for 90% of the time. The bottom 10% of the sample is the L90 noise level expressed in units of dB(A).
L_{eq}	The "equivalent noise level" is the summation of noise events and integrated over a selected period of time.
MWD	Minimum Working Distance
NCA	Noise Catchment Areas
NML	Noise management levels
NSR	Noise Sensitive Receivers
OEH	Office of Environment and Heritage
OOHW	Out-of-Hours Works – work completed outside of standard construction hours
PPV	Peak Particle Velocity
RBL	The Rating Background Level for each period is the medium value of the ABL values for the period over all of the days measured. There is therefore an RBL value for each period (day, evening and night)
Reflection	Sound wave changed in direction of propagation due to a solid object obscuring its path.
SEL	Sound Exposure Level (SEL) is the constant sound level which, if maintained for a period of 1 second would have the same acoustic energy as the measured noise event. SEL noise measurements are useful as they can be converted to obtain Leq sound levels over any period of time and can be used for predicting noise at various locations.
RNP	NSW Road Noise Policy (DECCW 2011)

Roads and Maritime	Roads and Maritime Services
Sound	A fluctuation of air pressure which is propagated as a wave through air.
Sound absorption	The ability of a material to absorb sound energy through its conversion into thermal energy.
Sound level meter	An instrument consisting of a microphone, amplifier and indicating device, having a declared performance and designed to measure sound pressure levels.
Sound pressure level (SPL)	The level of noise, usually expressed in decibels, as measured by a standard sound level meter with a microphone.
Sound power level (SWP)	Ten times the logarithm to the base 10 of the ratio of the sound power of the source to the reference sound power.
Standard construction hours	Hours during which construction work is permitted by the CoA.
Tonal noise	Containing a prominent frequency and characterised by a definite pitch.

APPENDIX B Sensitive receivers and noise management levels

Table B1: Noise Sensitive Receivers and Construction Noise Management Levels **SITE ESTABLISHMENT**

		Existing Noise Levels, dB(A)						Residential NMLs based on ICNG (external)				Sleep Disturbance L_{Amax}		Comments
NCA	Reference RBL	RBL Day	RBL Evening	RBL Night	LAeq_D	LAeq_E	LAeq_N	NMLDS	NMLDO	NMLE	NMLN	Screening	Max[1]	
NCA00	L00	54	45	40	68	65	61	64	59	50	45	55	65	
NCA01	L01	65	62	53	75	74	72	75	70	67	58	68	65	
NCA01a	L01	65	62	53	75	74	72	75	70	67	58	68	65	
NCA02	L02	64	60	48	75	74	72	74	69	65	53	63	65	
NCA02a	L02	64	60	48	75	74	72	74	69	65	53	63	65	
NCA02b	L02	64	60	48	75	74	72	74	69	65	53	63	65	
NCA03	L03	42	40	38	61	60	53	52	47	45	43	53	65	
NCA04	L05	58	54	49	67	65	63	68	63	59	54	64	65	
NCA05	L06	63	60	52	73	72	70	73	68	65	57	67	65	
NCA06	L07	60	56	50	71	68	67	70	65	61	55	65	65	
NCA07	L06	63	60	52	73	72	70	73	68	65	46	67	65	
NCA08	L09	54	51	45	67	65	62	64	59	56	46	60	65	
Other sensitive receivers														
Studio building (music recording studio)								45	45	45	45			Source: AS2107 'maximum', assuming a conservative façade loss of 20 dB(A)
Studio building (film or television studio)								50	50	50	50			Source: AS2107 'maximum', assuming a conservative façade loss of 20 dB(A)
Cinema space, theatre, auditorium								55	55	55	55			Source: AS2107 'maximum', assuming a conservative façade loss of 20 dB(A)
Hotel (Sleeping areas: Hotels near major roads)								60	60	60	60			Source: AS2107 'maximum', assuming a conservative façade loss of 20 dB(A)
Classrooms at schools and other educational institutions								55	55	55	55			Source: ICNG, assuming a conservative façade loss of 10 dB(A)
Chilcare centre (internal play and sleeping areas)								50	50	50	50			Source: AAAC - guideline for Child Care Centre Acoustic Assessment, assuming a conservative façade loss of 10 dB(A)
Hospital wards and operating theatres								65	65	65	65			Source: ICNG, assuming a conservative façade loss of 20 dB(A)
Places of worship								55	55	55	55			Source: ICNG, assuming a conservative façade loss of 10 dB(A)
Library (reading areas)								65	65	65	65			Source: AS2107 'maximum', assuming a conservative façade loss of 20 dB(A)
Hotel (bars and lounges)								70	70	70	70			Source: AS2107 'maximum', assuming a conservative façade loss of 20 dB(A)
Community centres – Municipal Buildings								60	60	60	60			Source: AS2107 'maximum', assuming a conservative façade loss of 10 dB(A)
Restaurant, bar (Bars and lounges/ Restaurant)								70	70	70	70			Source: AS2107 'maximum', assuming a conservative façade loss of 20 dB(A)
Railway platform and concourse areas								75	75	75	75			Source: AS2107 'maximum', assuming a conservative façade loss of 20 dB(A)
Café/ Restaurant/ Bar (outdoors)								60	60	60	60			Source: AS2107 'maximum1'
Passive recreation areas (e.g. area used for reading, meditation)								60	60	60	60			Source: ICNG
Active recreation areas (e.g. sports fields)								65	65	65	65			Source: ICNG
Commercial premises (including offices and retail outlets)								70	70	70	70			Source: ICNG
Industrial premises								75	75	75	75			Source: ICNG

Notes:
1 - Levels are estimated assuming an open windows (i.e. 10dBA façade losss)
D(S): standard construction hours from 7 am to 6 pm Monday to Friday and from 8 am to 6 pm Saturday
D(O): out-of-hours day period from 8 am to 6 pm Sunday and Public holidays - OOHW P1
E: evening period from 6 pm to 10 pm Monday to Sunday - OOHW P1
N: night-time period from 10 pm to 7 am Monday to Friday, from 10 pm am to 8 am Saturday, Sunday and Public holidays - OOHW P2

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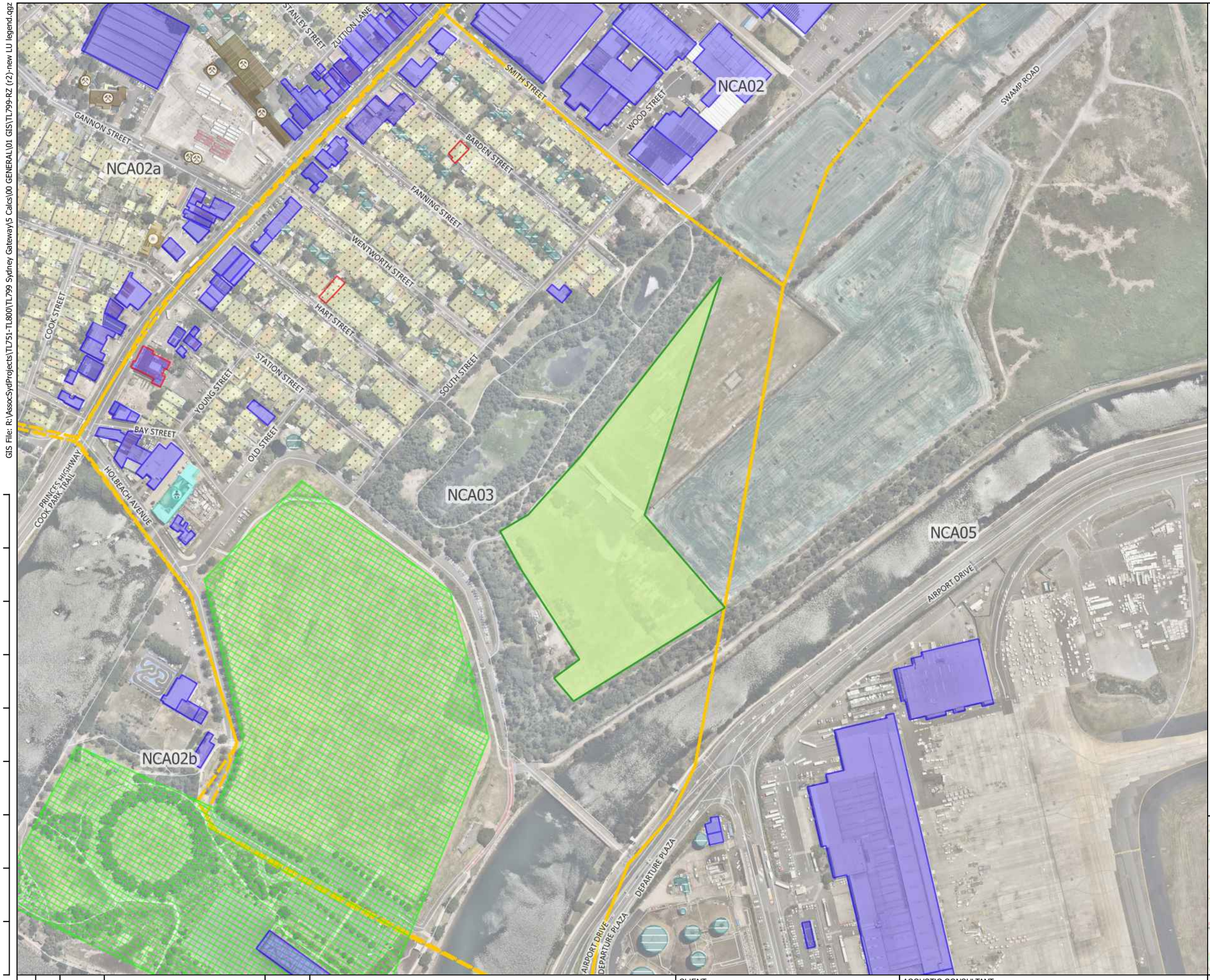


LEGEND

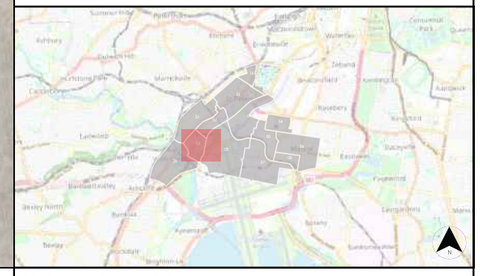
Noise sensitive receivers

- Residential
- Mixed use
- Commercial
- Industrial
- Hotel/Motel/Hostel
- Medical facility
- Place of Worship
- Community centre
- Recording studio
- Library
- Flight simulator
- Childcare
- Educational
- Theatre/Auditorium
- Cinema
- Laboratory
- Recreational - Passive
- Recreational - Active
- Other
- Heritage

Work Areas

- Work area

- NCA



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A3 Original | Co-ordinate System: MGA Zone 56 | NOTE: Do not scale from this drawing.

CLIENT

SYDNEY GATEWAY

A Joint Venture Project

JOHN HOLLAND | SEYMOUR WHYTE

ACOUSTIC CONSULTANT

RENZO TONIN & ASSOCIATES

inspired to achieve

Ph (02) 8218 0500 Fax (02) 8218 0501

SYDNEY GATEWAY

Site Establishment Works
Land Use, NCAs
Work area: C3

APPENDIX C Construction timetable/ activities

Table C1: Construction timetable/ activities/ equipment — **SITE ESTABLISHMENT**

Activity	Aspect	Work area	Timing of Activity: Start Date	End Date	Duration (Weeks)	Plant/ Equipment	Plant/ Equipment (as provided by client)	Day: 7am - 6pm	Evening: 6pm - 10pm	Night: 10pm - 7am	Sound Power Level (Lw re: 1pW) in Noise Model, L_{Aeq}	Penalty	L_{Amax}	High noise plant	Vibration intensive plant	Notes
C3 - Former Tempe Tip siteSwamp Road, Tempe																
Site preparation works including early works site compounds	• Provision of site security, including: - temporary fencing panels and perimeter fencing - project specific boundary screening installation • Provision of minimum WHS requirements, including: - Toilet facilities - Offices - Lunch rooms - First aid facilities • Signage and pedestrian diversions - Installation of traffic barriers	C3 - Former Tempe Tip siteSwamp Road, Tempe	19/04/2021	30/04/2021	2	Light vehicles / traffic control utes	Tool Truck	2 per hour	-	-	89	-	100	-	-	Excluded early works establishment
						Hand tools	Hand Tools	4	-	-	107	-	111	-	-	
						Handtool - grinder	Grinders	2	-	-	107	-	118	-	-	
						Generator	Generators	2	-	-	94	-	95	-	-	
						Hiab	Hi-Ab	2	-	-	98	-	102	-	-	
						Telehander / Franna crane (20t)	Franna Crane	1	-	-	99	-	103	-	-	
						Water cart	Water cart/ Street Sweeper	1	-	-	104	-	107	-	-	
						Light vehicles / traffic control utes	Light vehicles	2 per hour	-	-	89	-	100	-	-	
Site survey and site investigation works	• Ground penetrating radar or electromagnetic ground investigation • Utility investigation by potholing with a vacuum truck • Phase 2 contamination investigation	C3 - Former Tempe Tip siteSwamp Road, Tempe	3/05/2021	7/05/2021	1	GPR	GPR	1	-	-	-	-	-	-	-	
						Vacuum Truck	Vacuum Truck	1			107	-	111	-	-	
						Drill Rig	Drill rig	1	-	-	106	-	116	-	X	
						Light vehicles / traffic control utes	Tool truck	1	-	-	89	-	100	-	-	
						Hand tools	Hand Tools	2	-	-	107	-	111	-	-	
						Generator	Generators	1	-	-	94	-	95	-	-	
						Compactor / Wacker packer	Plate Compactors	1	-	-	108	-	110	-	X	
						Light vehicles / traffic control utes	Light vehicles	2 per hour	-	-	89	-	100	-	-	
Initial environmental controls	• Erosion and sediment controls, including: - Installation of rip rap - Drainage sump - Diversion of offsite flows - Erosion, sediment and water flow controls • Delineation of sensitive areas and temporary fencing/hoardings - Implement wheel wash facilities - Implement groundwater and sludge treatment facility	C3 - Former Tempe Tip siteSwamp Road, Tempe	3/05/2021	7/05/2021	1	Excavator w bucket (13t)	Excavator (<14 tonne)	1	-	-	103	-	108	-	-	
						Vacuum Truck	Vacuum Truck	1	-	-	107	-	111	-	-	
						Dump truck	Bogie Truck	2 per hour	-	-	106	-	111	-	-	
						Light vehicles / traffic control utes	Tool Truck	1	-	-	89	-	100	-	-	
						Hand tools	Hand Tools	2	-	-	107	-	111	-	-	
						Generator	Generators	1	-	-	94	-	95	-	-	
						Water cart	Water cart/ Street Sweeper	1	-	-	104	-	107	-	-	
Remediation	• Remediation of contaminated materials (if required, pending contamination report)	C3 - Former Tempe Tip siteSwamp Road, Tempe	10/05/2021	14/05/2021	1	Excavator w bucket (13t)	Excavator (<14 Tonne)	1	-	-	103	-	108	-	-	
						Vacuum Truck	Vacuum Truck	1			107	-	111	-	-	
						Dump truck	Bogie Truck	2 per hour	-	-	106	-	111	-	-	
						Roller smooth/padfoot (12t)	Rollers	1	-	-	109	5	113	HN	X	
						Compactor / Wacker packer	Plate Compactors	1	-	-	108	-	110	-	X	
						Hand tools	Power Tools	2	-	-	107	-	111	-	-	
						Generator	Generators	1	-	-	94	-	95	-	-	
						Water cart	Water cart/ Street Sweeper	1	-	-	104	-	107	-	-	
Site levelling	• Clearing and grubbing (including chain saws/ mulchers) • Site levelling, grading and compaction • Temporary stockpiling of materials for site levelling	C3 - Former Tempe Tip siteSwamp Road, Tempe	10/05/2021	21/05/2021	2	Excavator w bucket (13t)	Excavator (<14 tonne)	1	-	-	103	-	108	-	-	
						Skid steer / Bobcat (10T)	Skid Steer	1	-	-	104	-	109	-	-	
						EWP	EWP	1	-	-	95	-	98	-	-	
						Chainsaw	Chainsaw	1	-	-	116	5	120	HN	-	
						Mulcher	Mulchers	1	-	-	120	5	124	HN	-	
						Roller smooth/padfoot (12t)	Rollers	1	-	-	109	5	113	HN	X	
						Dump truck	Bogie Truck	2 per hour	-	-	106	-	111	-	-	
						Hand tools	Power Tools	2	-	-	107	-	111	-	-	
						Generator	Generators	1	-	-	94	-	95	-	-	
						Water cart	Water cart/ Street Sweeper	1	-	-	104	-	107	-	-	
Hardstand and site access	• Formalisation of access and egress points - Implementing hardstand for car parking • Sealing of hard stand areas • Internal haul roads installed	C3 - Former Tempe Tip siteSwamp Road, Tempe	24/05/2021	4/06/2021	2	Excavator w bucket (13t)	Excavator	1	-	-	103	-	108	-	-	
						Skid steer / Bobcat (10T)	Skid Steer	1	-	-	104	-	109	-	-	
						Roller smooth/padfoot (12t)	Rollers	1	-	-	109	5	113	HN	X	
						Dump truck	Bogie Truck	1	-	-	106	-	111	-	-	
						Hand tools	Power Tools	2	-	-	107	-	111	-	-	
						Generator	Generators	1	-	-	94	-	95	-	-	
						Concrete Agi	Concrete Truck	2 per hour	-	-	108	-	111	-	-	
						Compactor / Wacker packer	Plate Compactors	1	-	-	108	-	110	-	X	
						Water cart	Water cart/ Street Sweeper	1	-	-	104	-	107	-	-	
Demolition of nonheritage structures	• Removal of hazardous materials • Internal strip out • Structure disassembly and demolition	C3 - Former Tempe Tip siteSwamp Road, Tempe	24/05/2021	4/06/2021	3	Excavators with hammers (35-45T)	Excavator with hydraulic hammer	1	-	-	118	5	123	HN	X	
						EWP	EWP	1	-	-	95	-	98	-	-	
						Dump truck	Bogie Truck	3 per hour	-	-	106	-	111	-	-	
						Hand tools	Power Tools	2	-	-	107	-	111	-	-	
						Generator	Generators	2	-	-	94	-	95	-	-	
						Compactor / Wacker packer	Plate Compactors	1	-	-	108	-	110	-	X	
						Water cart	Water Cart	1	-	-	104	-	107	-	-	
						Concrete / road / rail saw	Demo Saw	1	-	-	119	5	129	HN	X	
						Handtool - grinder	Grinders	2	-	-	107	-	118	-	-	
Utilities	• Protection of existing services (overhead wiring) • Removal of redundant utilities • Installation of services to the site including - Water, sewer, power, internet, and security systems Where possible, connection of site utilities (water, sewer, and power) to existing infrastructure	C3 - Former Tempe Tip siteSwamp Road, Tempe	21/06/2021	2/07/2021	2	Excavators with hammers (35-45T)	Excavator with hydraulic hammer	1	1	1	118	5	123	HN	X	OOHW due to ROL required and/or utility provider restrictions. Wont be 2 weeks non stop, likely 1-2 nights intermittentlv
						EWP	EWP	1	1	1	95	-	98	-	-	
						Vacuum Truck	Vacuum Truck	1	1	1	107	-	111	-	-	
						Dump truck	Bogie Truck	2 per hour	1	1	106	-	111	-	-	
						Hand tools	Hand Tools	2	2	2	107	-	111	-	-	
						Handtool - grinder	Grinders	1	1	1	107	-	118	-	-	
						Generator	Generators	1	1	1	94	-	95	-	-	
						Compactor / Wacker packer	Plate Compactors	1	1	1	108	-	110	-	X	
						Water cart	Water Cart	1	1	1	104	-	107	-	-	
						Concrete / road / rail saw	Road Saw	1	1	1	119	5	129	HN	X	
Installation of offices and workshops	• Layout, e.g. Blockwork and foundations • Installation of office buildings and shipping containers • Installation of staff amenities • Mechanical workshop structures and areas	C3 - Former Tempe Tip siteSwamp Road, Tempe	7/06/2021	25/06/2021	3	Telehander / Franna crane (20t)	Franna Crane	1	-	-	99	-	103	-	-	
						Mobile crane (20t-250t)	Slew Crane <100t	1	-	-	104	-	108	-	-	
						EWP	EWP	1	-	-	95	-	98	-	-	
						Concrete Agi	Concrete Truck	2 per hour	-	-	108	-	111	-	-	
						Hand tools	Hand Tools	2	-	-	107	-	111	-	-	
						Concrete / road / rail saw	Power Saw	2	-	-	119	5	129	HN	X	
						Handtool - grinder	Grinders	2	-	-	107	-	118	-	-	
						Generator	Generators	2	-	-	94	-	95	-	-	
						Water cart	Water cart	1	-	-	104	-	107	-	-	
						Delivery truck	Flat bed Truck	4			106	-	111	-	-	
Fit out, commissioning and install of remaining site infrastructure including	• Chemical and hazardous material storage • Designated stockpile/laydown areas • Office furniture fit out • Formalisation of on-site car parking (line marking etc) • Site lighting installed	C3 - Former Tempe Tip siteSwamp Road, Tempe	21/06/2021	2/07/2021	2	Telehander / Franna crane (20t)	Franna Crane	1	-	-	99	-	103	-	-	
						EWP	EWP	1	-	-	95	-	98	-	-	
						Concrete Agi	Concrete Truck	4 per hour	-	-	108	-	111	-	-	
						Hand tools	Hand Tools	2	-	-	107	-	111	-	-	
						Concrete / road / rail saw	Power Saw	2	-	-	119	5	129	HN	X	
						Handtool - grinder	Grinders	2	-	-	107	-	118	-	-	
						Generator	Generators	2	-	-	94	-	95	-	-	
						Water cart	Water Cart	1	-	-	104	-	107	-	-	

APPENDIX D Noise impact

D.1 Predicted noise levels

The detailed predicted levels have been provided to JHSW JV in a spreadsheet table in order to more adequately mitigate and manage potential noise impacts.

D.2 Number of receivers above NMLs

The number of exceedances has been provided to JHSW JV in a spreadsheet table.

D.3 Additional mitigation measures

The additional mitigation measures have been provided to JHSW JV in a spreadsheet table in order to more adequately mitigate and manage potential noise impacts.

APPENDIX E Vibration impact

E.1 Minimum working distances – Vibration

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LEGEND

Noise sensitive receivers

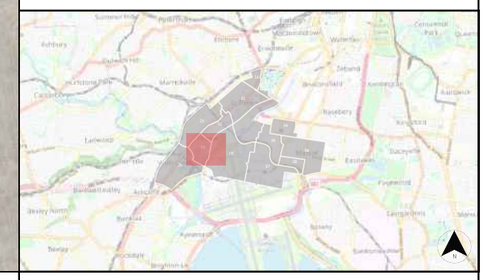
- Residential
- Mixed use
- Commercial
- Industrial
- Hotel/Motel/Hostel
- Medical facility
- Place of Worship
- Community centre
- Recording studio
- Library
- Flight simulator
- Childcare
- Educational
- Theatre/Auditorium
- Cinema
- Laboratory
- Recreational - Passive
- Recreational - Active
- Other
- Heritage

MWD for cosmetic damage and human annoyance for Smooth drum roller (13T) - High Vibration

- Unreinforced structures (7.5mm/s ppv)
- Heritage structures (2.5mm/s ppv)
- Human annoyance - Residential (day)

Work Areas

- Work area
- Receivers affected by MWD for cosmetic damage
- NCA



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A3 Original

Co-ordinate System: MGA Zone 56

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FULL SIZE A3

NOTE: Do not scale from this drawing.

CLIENT

SYDNEY GATEWAY

A Joint Venture Project

JOHN HOLLAND

SEYMOUR WHYTE

ACOUSTIC CONSULTANT

RENZO TONIN & ASSOCIATES

inspired to achieve

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SYDNEY GATEWAY

Site Establishment Works
MWD for cosmetic damage and human annoyance
Work area: C3