Laing O'Rourke – Sydney Metro - Western Sydney Airport, Advanced and Enabling Works, Footbridge St Marys

Construction Environmental Management Plan

Document revision and history

Document details	
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Document Scope	This CEMP and the associated documents apply to the Sydney Metro – Western Sydney Airport Advanced and Enabling Works, Footbridge St Marys, delivered by Laing O'Rourke.

Document revision history and signoff

Revision	Date	Revision description	Prepared	Reviewed	Approval
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[redacted]					
[redacted]					
[redacted]					

Revision	Date	Revision description	Prepared	Reviewed	Approval
5	18/06/2025	LOR Boundary PS details added to CEMP	K Murray	CMcCallum	M. Harris

Distribution

The master-controlled plan will be held within Laing O'Rourke's document management system, where it can be accessed by personnel as necessary.

Issue, revision and re-issue

This plan has been prepared in accordance with the relevant requirements and it has been reviewed by the relevant discipline leader for use on the Sydney Metro Western Sydney Airport Advanced and Enabling works. This plan is to be submitted to the relevant authorities before the start of work on-site.

Revisions of this plan may be required throughout the duration of the contract to reflect changing circumstances or identified opportunities for improvement. Revisions will be proposed by the relevant personnel and reviewed, developed and finalised

Revisions of this plan must not reduce the scope or level of management control. Revisions may result from:

Management review

Changes to the standard system

Internal or external audit

Client's feedback or non-compliance reports

Legislative changes

Improvement initiatives and process changes within Laing O'Rourke

Lessons learned.

This plan will be reviewed as necessary.

Initial updates to this plan will be issued alphabetically for review. Once approved by the client, subsequent updates will be numbered consecutively and transmitted to holders of controlled copies.

Updates to this plan and any other sub-plans will be provided to the client for comment, review and approval within five days of amendment. Amendments will be clearly illustrated in the document.

The nominated Environmental Representative is to have final approval for all amendments and revisions.

Terms and definitions

The following terms, abbreviations and definitions are used in this plan.

Terms and definitions

Term	Definition
ACHAR	Aboriginal Cultural Heritage Assessment Report
ACM	Asbestos-Containing Material
ACHMP	Aboriginal Cultural Heritage Management Plan
AEC	Area of Environmental Concern
AEW	Advanced and Enabling Works
AMMs	Additional Mitigation Measures
ARD	Archaeological Research Design
CARs	Corrective Action Requests
CEMF	Construction Environmental Management Framework
CEMP	Construction Environmental Management Plan
CLMP	Community Liaison Management Plan
CNVMP	Construction Noise and Vibration Management Plan
CoA	Conditions of Approval
CoPC	Contaminants of Potential Concern
CRAW	Construction Risk Assessment Workshop
CSSI	Critical State Significant Infrastructure
CNVS	Construction Noise and Vibration Standard
CTMF	Construction Traffic Management Framework
CTMP	Construction Traffic Management Plan
DPHI	NSW Department of Planning, Housing Infrastructure
DPI Fisheries	NSW Department of Primary Industries - Fisheries
DNVIS	Detailed Noise and Vibration Impact Statement
ECM	Environmental Control Map
EIA	Environmental Impact Assessment
EES	NSW Department of Environment, Energy and Science
EPA	NSW Environment Protection Authority
EPL	Environment Protection Licence
ER	Independent Environmental Representative (Nominated by DPHI)
ERAP	Environmental Risk Action Procedures
EWMS	Environment Work Method Statement
FSM	Footbridge St Marys (The Project)
GIS	Geographic Information System

Term	Definition
HSEMS	Health Safety and Environmental Management System
IBC	Intermediate Bulk Container
ICNG	Interim Construction Noise Guidelines
ICT	Information Communication Technology
INTELEX	Laing O'Rourke's health, safety and environment incident reporting tool
IS	Infrastructure Sustainability
ITPs	Inspection Test Plans
JHA	Job Hazard Analysis
JSEA	Job Safety Environmental Analysis
LORAC	Laing O'Rourke Australia Construction
MCoA	Ministers Conditions of Approval
MTS	Material Tracking System
NATA	National Association of Testing Authorities
NML	Noise Management Level
NOP	Non-Owner Participant
NSW	New South Wales
OCCS	Overarching Community Consultation Strategy
OOHW	Out-of-Hours Works
PCBs	Polychlorinated Biphenyls
PFAS	Per- and Polyfluoroalkyl Substances
PPE	Personal Protective Equipment
Planning Secretary	The Secretary of the NSW Department of Planning and Environment
POEO Act	*Protection of Environment and Operations Act 1997*
Principal	Sydney Metro WSA
PUDCLP	Place, Urban Design and Corridor Landscape plan
RDO	Rostered Day Off
RPO	Revised Performance Outcomes
REMMs	Revised Environmental Mitigation Measures
SDS	Safety Data Sheet
SEPP	State Environmental Planning Policies
SER	Severe Environmental Risk
SES	NSW State Emergency Service
SMP	Sustainability Management Plan
SM-WSA	Sydney Metro - Western Sydney Airport

Term	Definition
SSTOM	Stations, Systems, Trains and Operations and Maintenance
SWMS	Safe Work Method Statement
TfNSW	Transport for New South Wales
TSR	Transport for New South Wales Standard Requirements
TSS	Total Suspended Solids
TTLG	Traffic and Transport Liaison Group
VC	Vibration Curve
VOC	Verification of Competency
WIRES	Wildlife Rescue and Emergency Services
WFDIP	Workforce Development and Industry Participation Plan
WSA	Western Sydney Airport
WQO	New South Wales Water Quality Objectives

Table of contents

1.0 Introduction 9
1.1 Context 9
1.2 Background and Project Description 9
1.3 Environmental Approvals 15
1.4 Scope of Plan 15
2.0 Plan Objectives 15
2.1 Purpose 15
2.2 Objectives 16
3.0 Roles and Responsibilities 16
4.0 Organisational Structure 23
5.0 Environmental and Energy Policy 24
6.0 Environmental Management System 26
6.1 Laing O'Rourke Environmental Management System 30
7.0 Environmental Objectives and Targets 31
8.0 References, Standards, Codes and Regulations 44
9.0 Legal and Compliance Obligations 44
9.1 Project Approval 45
9.2 Planning Assessments and Approvals 47
9.3 Environment Protection Licence 48
9.4 Review 48
10.0 Environmental Risk Assessment and Control 48
10.1 Climate Related Risk and Opportunities 50
10.2 Severe Environmental Risk Controls 50
10.3 Hazard Identification and Risk Assessment Requirements 52
11.0 Training, Awareness and Competence 53
11.1 Induction 53
11.2 Environmental Training Requirements 55
11.3 Environmental Awareness and Toolbox Talks 56
12.0 Construction Controls 56
12.1 Hold Points 57
12.2 Environmental Controls Maps 60
12.3 Design 61
12.4 Procurement 62
12.5 Handling, Storage, Packaging and Transport 62
12.6 Manufacture, Construction and Fabrication Processes 63
12.7 Plant and Equipment 63
12.8 Construction Operational Controls 63
12.9 Cumulative impacts 73
13.0 Emergency Preparedness and Response 74
13.1 Site shutdown planning 75
14.0 Records 75
15.0 Auditing 76
16.0 Review and Approvals 77

17.0 Monitoring, Measurement and Reporting 78
17.1 Assurance Framework and Compliance Monitoring 78
17.2 Environmental Action Tracking 80
17.3 LORAC Incident Management 85
18.0 Stakeholder and Community Involvement 92
18.1 Community Communication Strategy 92
18.2 Complaints Management 93
18.3 Communication With Internal and External Parties 95
Attachment A: Environmental incident investigation guidelines 96
Attachment B: Incident Response Procedure 98
Attachment C: Spill Response Procedure 106
Attachment D: Construction Environmental Management Plan Flowchart 107
Attachment E: Legal and Other Requirements 108
Attachment F: Construction Environmental Control Procedures – Environmental Risk Action Procedures 115
Attachment G: Severe Environmental Risks – LORAC Assessment Process 160
Attachment H: Project Permits, and Approvals Register 162
Attachment I: Risk Assessment and Impacts Register 166
Attachment J: Emergency preparedness and response 180
Attachment K: Unexpected Contaminated Finds Procedure 187
Attachment L: Flora and Fauna Response Procedure 188
Attachment M: Environmental Inspection 190
Attachment N: Environmental Controls Map & CEMF checklist 192
Attachment O: Environmental Management Plan Guideline Compliance Checklist 195
Attachment P: Compliance Matrix 196
Attachment Q: Water Reuse Strategy 356
Attachment R: Heritage Management Procedure 367
Attachment S: Detailed Noise and Vibration Impact Statement 443
Attachment T: Trigger Action Response Plan (TARPs) 569

List of Figures

Figure 1: SM-WSA Footbridge St Marys Project 10
Figure 2: Indicative Delineation for the FSM Project 13
Figure 3: Artistic Interpretation of Completed FSM Project 14
Figure 4: Organisational Structure 23
Figure 5: FSM Organisational Structure 24
Figure 6: Environmental and Energy Policy 25
Figure 7: Laing O'Rourke's Environmental Systems Requirements 27
Figure 8: HSEMS Certification 29
Figure 9 Process for modification or change to the approved project boundary 46
Figure 10: Laing O'Rourke Incident Management Flowchart 98

Figure 11: Sydney Metro Environmental Incident reporting procedure for Class 1 and Class 2 incidents 99
Figure 12: Spill Response Procedure 106
Figure 13: CEMP Flowchart 107
Figure 14: Spoil Management Flowchart 135
Figure 15: LORAC Unexpected Contaminated Finds Procedure 187
Figure 16: LORAC Flora and Fauna Response Procedure 188
Figure 17: LORAC Fauna Response Procedure 189

1.0 Introduction

1.1 Context

The SM-WSA was deemed Critical State Significant Infrastructure and was approved for construction on 23 July 2021 by the Minister for Planning and Public Spaces (Application no: CSSI 10051). The Project is undertaken in accordance with this Approval.

In accordance with the Staging Report for the SM-WSA, Advanced Enabling Works (AEW) for the Footbridge St Marys project are required to establish key construction sites and facilitate construction activities. The Project is included within the Staging Report as AEW – Footbridge St Marys.

This Construction Environmental Management Plan (CEMP) and the associated Environmental Risk Action Procedures ERAPs described in section in the attached appendices forms an integral part of Laing O'Rourke's project management system that will be used to deliver the following Project:

a. Sydney Metro WSA Enabling Works – Footbridge St Marys

1.2 Background and Project Description

Sydney Metro projects are being delivered to improve the safety, efficiency and reliability of Sydney's train network and aims to improve connectivity across the city. Sydney Metro – Western Sydney Airport project will deliver about 23 kilometres of rail line between St Marys Station and the Western Sydney Aerotropolis at Bringelly, and six stations are proposed to be built along the alignment.

In order to facilitate future Sydney Metro station at St Marys, interchanging with the existing suburban railway station, TfNSW and Sydney Metro – Western Sydney Airport has proposed to undertake Advanced Enabling Works (AEW) at the St Marys station.

This Sydney Metro AEW at St Marys are being delivered by Laing O'Rourke to facilitate a future Sydney Metro station with the construction of the Footbridge St Marys Project (CSSI works).

1.2.1 Project Location:

St Marys Railway Station is located on the T1 - North Shore & Western Line between Kalang Avenue and Glossop Street. The station is located about 40 Kilometres west of the Sydney Central Business District (CBD) in the suburb of St Marys, placed in the Penrith Local Government Area. The project, FSM, will connect the north and south of the station precinct. The project location is given in the below Figure 1.

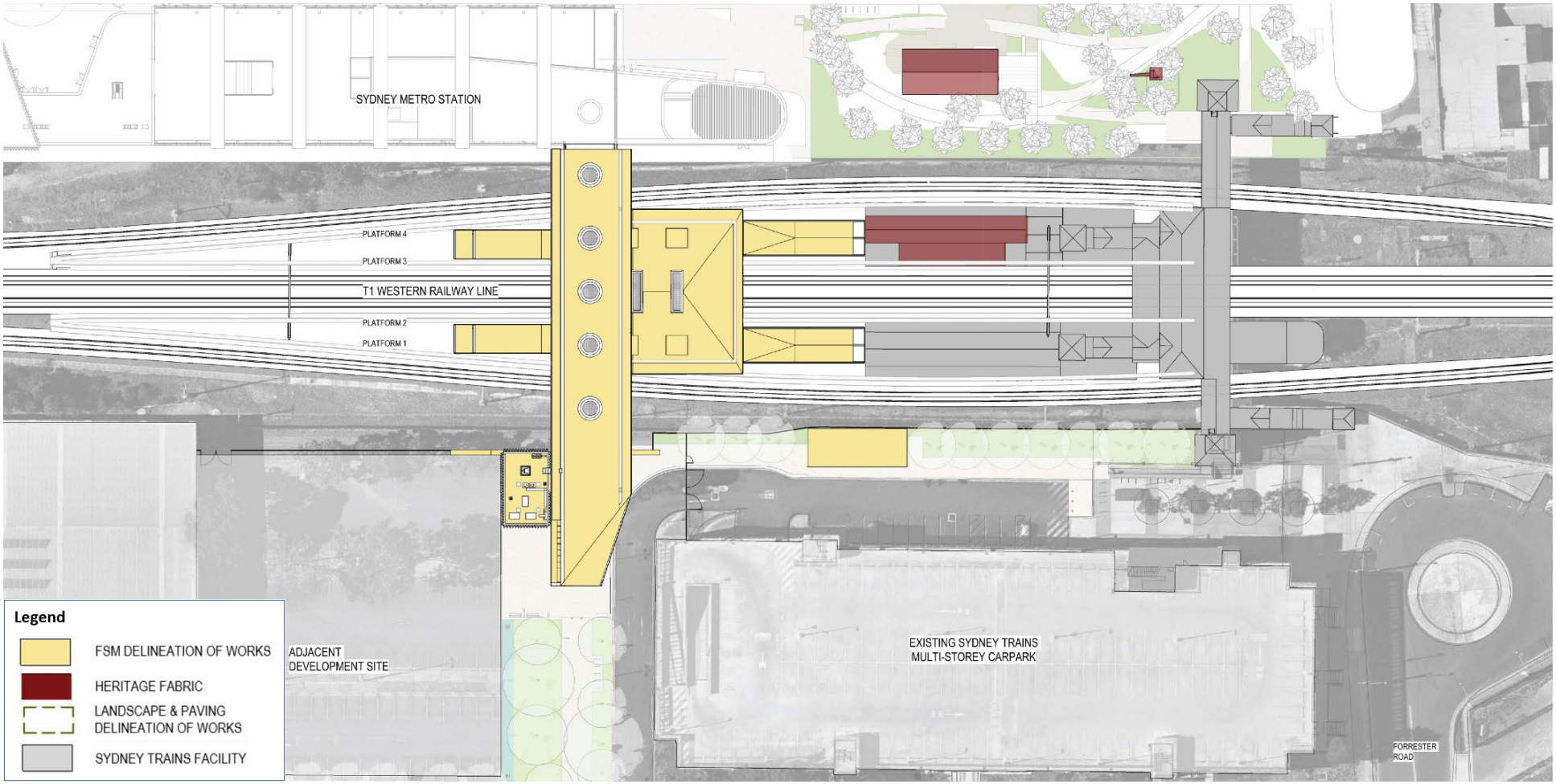


Figure 1: SM-WSA Footbridge St Marys Project

1.2.2 Project Description:

The SM-WSA AEW Footbridge St Marys works will allow for the interchange between the future SMWSA St Marys metro station, Harris Street carpark, and existing Sydney Trains platforms at St Marys. The project involves the following scope of works:

- Demolition and removal of all existing structures and services affected by the FSM Works such as canopy removal, including services, sheeting, insulation and structural steel and, removal/modification of fence line and light pole removals
- Construction of a footbridge spanning the Sydney Trains T1 line at St Marys Station
- Installation of vertical transportation comprising stairs, four (4) escalators and five (5) lifts
- Modifications to existing Sydney Trains assets to enable the construction of the footbridge including relocation of Guards Indicators, CCTV, PA, Over Head Wire System (OHWS), drainage and utility infrastructure, lighting, and platform furniture
- Construction of stairs and canopies which form part of the footbridge structure
- Installation and construction of Sydney Trains services, facilities and rooms
- Installation of new lighting, passenger information display system (PIDS), PA, CCTV, ticketing, communications network equipment, ventilation, plumbing and all related systems in accordance with Sydney Trains and Australian Standards
- Electrical earthing, bonding protection and stray current mitigation
- Northern/Harris Street landscaping, plaza, bike storage, kerb side transport.

All works, including legacy initiatives, outlined in the contract documents will be completed in line with this CEMP.

1.2.3 Construction Compounds and Ancillary Facilities

To support the above activities, the main FSM site compound and laydown area as approved under the EIS will be established at Harris Street. Further Ancillary Facilities (Laydowns 1-5 and 2 Harris Street) have been approved under Ancillary Facilities Checklists.

All Ancillary Facilities and the site compound area is shown in the Environmental Control Maps available on the project drive and also displayed on site.

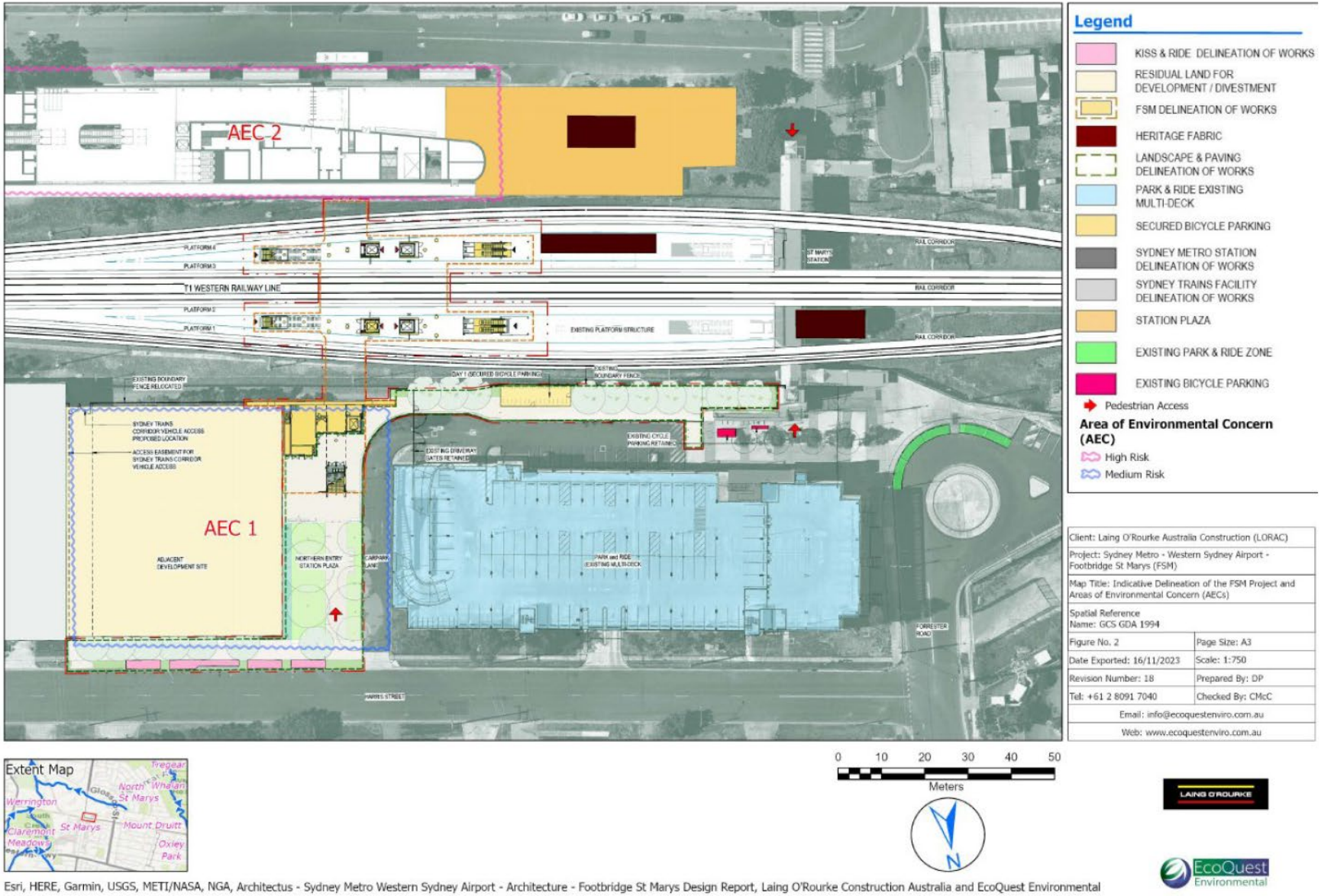
All Ancillary Facilities meets the criteria specified by CoA A17for Ancillary Facilities. Further details of additional Ancillary Facilities are provided in Section 12.8.15.

1.2.4 Staging of works:

The various work activities involved in the Sydney Metro - Western Sydney Airport Advanced and Enabling Works (SM-WSA AEW) Footbridge St Marys (FSM) works is given below in the Table 1. The indicative design and drawing of the Footbridge St Marys works is given in Figure 2 and the artistic interpretation of the finalised project is given in Figure 3, respectively.

Table 1: Stages of Works in SM-WSA Footbridge St Marys

Activity Description	Proposed Start	Proposed Finish
Early Works	27-May-23	19-May-24
Site Compound Establishment	01-Sep-23	30-Nov-23
1995 Canopy Removal	27-May-23	31-Aug-23
Platform Tie Piles	27-May-23	19-May-24
Service Relocation	27-May-23	19-May-24
Main Works	01-May-24	17-Dec-26
Piling foundations: excavation/trim piles/blinding/FRP	01-May-24	17-Dec-24
Platform Stairs (1 & 2)	31-May-25	13-May-26
Footbridge	2-Jun-25	03-Aug-26
Platform Lifts (1-4)	27-Feb-26	03-Jul-26
Concourse	2-Jun-25	03-Aug-26
Escalators (1-4)	21-Feb-26	05-Aug-26
Platform Works (drainage & Pits, Canopy, Resurfacing, Platform Furniture)	21-Jun-25	18-Sep-26
Services (OHW, Electrical/Comms, Utilities)	16-Mar-24	17-Sep-26
Northern Plaza, Utility Building & Deflection Wall	14-Oct-24	14-Jul-26
Landscaping (Northern Entry)	27-Feb-26	06-Aug-26
Bike shelter	22-Feb-25	13-May-26



Client: Laing O'Rourke Australia Construction (LORAC)	
Project: Sydney Metro - Western Sydney Airport - Footbridge St Marys (FSM)	
Map Title: Indicative Delineation of the FSM Project and Areas of Environmental Concern (AECs)	
Spatial Reference Name: GCS GDA 1994	
Figure No. 2	Page Size: A3
Date Exported: 16/11/2023	Scale: 1:750
Revision Number: 18	Prepared By: DP
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Web: www.ecoquestenviro.com.au	

Esri, HERE, Garmin, USGS, METI/NASA, NGA, Architectus - Sydney Metro Western Sydney Airport - Architecture - Footbridge St Marys Design Report, Laing O'Rourke Construction Australia and EcoQuest Environmental

Figure 2:
LORAC Sydney Metro – WSA AEW FSM

Indicative Delineation for the FSM Project

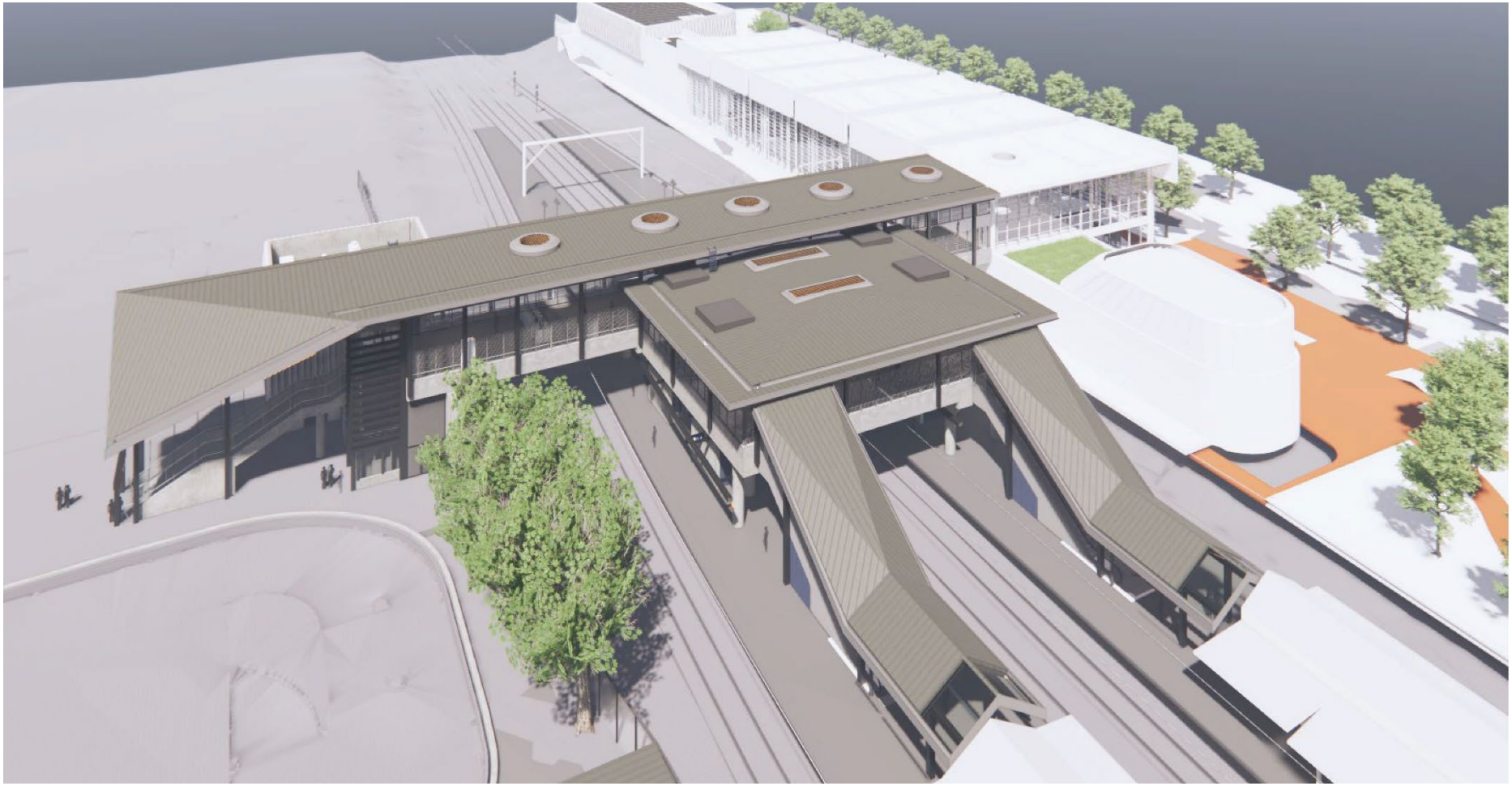


Figure 3: Artistic Interpretation of Completed FSM Project

1.3 Environmental Approvals

The conditions of approval pertaining to the works fall under the Sydney Metro - Western Sydney Airport CSSI 10051. A summary of environmental approvals is provided in the below Table 2.

Table 2: Summary of Environmental Approvals

Planning Approval Type	Location
Sydney Metro WSA Low Impact Works	St Marys Geotechnical Investigations and Early Works
Sydney Metro – WSA CSSI (10051)	Footbridge St Marys

1.4 Scope of Plan

This CEMP has been developed to address the project specific requirements as well as the requirements of Laing O'Rourke's Health, Safety and Environmental Management System (HSEMS).

Conditions of approval (CoA) and Revised Environmental Mitigation Measures (REMMs) relevant to the design and construction phases of the Project are addressed in the CEMP. This CEMP has been prepared in accordance with the Construction Environmental Management Framework of Sydney Metro WSA - CSSI 10051.

Construction shall not commence until this CEMP and procedures have been approved by the Environmental Representative (as outlined in CoA C10, and Staging Report). The approved and/or endorsed CEMP and procedures by the ER, including any minor amendments approved by the ER, must be implemented for the duration of construction.

2.0 Plan Objectives

2.1 Purpose

The plan will:

- Ensure positive and negative effects on the environment are assessed as they relate to organisational stakeholders, including those described in Laing O'Rourke's Health, Safety and Environmental Management System (HSEMS)
- Ensure that the works meet contractual, legal and other environmental requirements
- Ensure the works meet the requirements of ISO 14001, including the need for continual improvement
- Link to Laing O'Rourke's integrated management systems
- Provide all personnel with the systems, procedures and documentation necessary to undertake all activities associated with the works in accordance with the environmental requirements.

All works carried out will be in accordance with:

- TfNSW requirements as detailed in the contractual agreement
- Sydney Metro-WSA CSSI 10051 - Specifically the Ministers Conditions of Approval, Revised Environmental Mitigation Measures, CEMF, CTMF, OCCS and the Staging Report
- Project objectives outlined in Staging Report
- This plan and the Environmental Management System as part of the HSEMS

- ISO 14001 Environmental Management System
- Laing O'Rourke's compliance obligations, including mandatory and voluntary requirements.

Forming the overarching environmental management framework for the works, the plan details the environmental management process and controls to be implemented and applies to environmental approval pathways. Environmental risk assessments will be updated to include relevant risks and opportunities for each project. Operational control measures included in this plan will apply across the Program. Project-specific obligations and control measures will be included within this plan as necessary and implemented on the project through the location-specific Environmental Control Maps.

2.2 Objectives

The CEMP is to serve as a reference document to provide a systematic and integrated method for planning and performing environmental management during construction works on the current SM-WSA AEW – Footbridge St Marys works. It is to provide guidance on the management processes that will facilitate the timely implementation and maintain compliance with the following:

a. Contractual requirements for environmental management
b. NSW Government Environmental Management System Guidelines
c. Relevant environmental legislation
d. Specific project approvals
e. Other environmental obligations associated with the works.

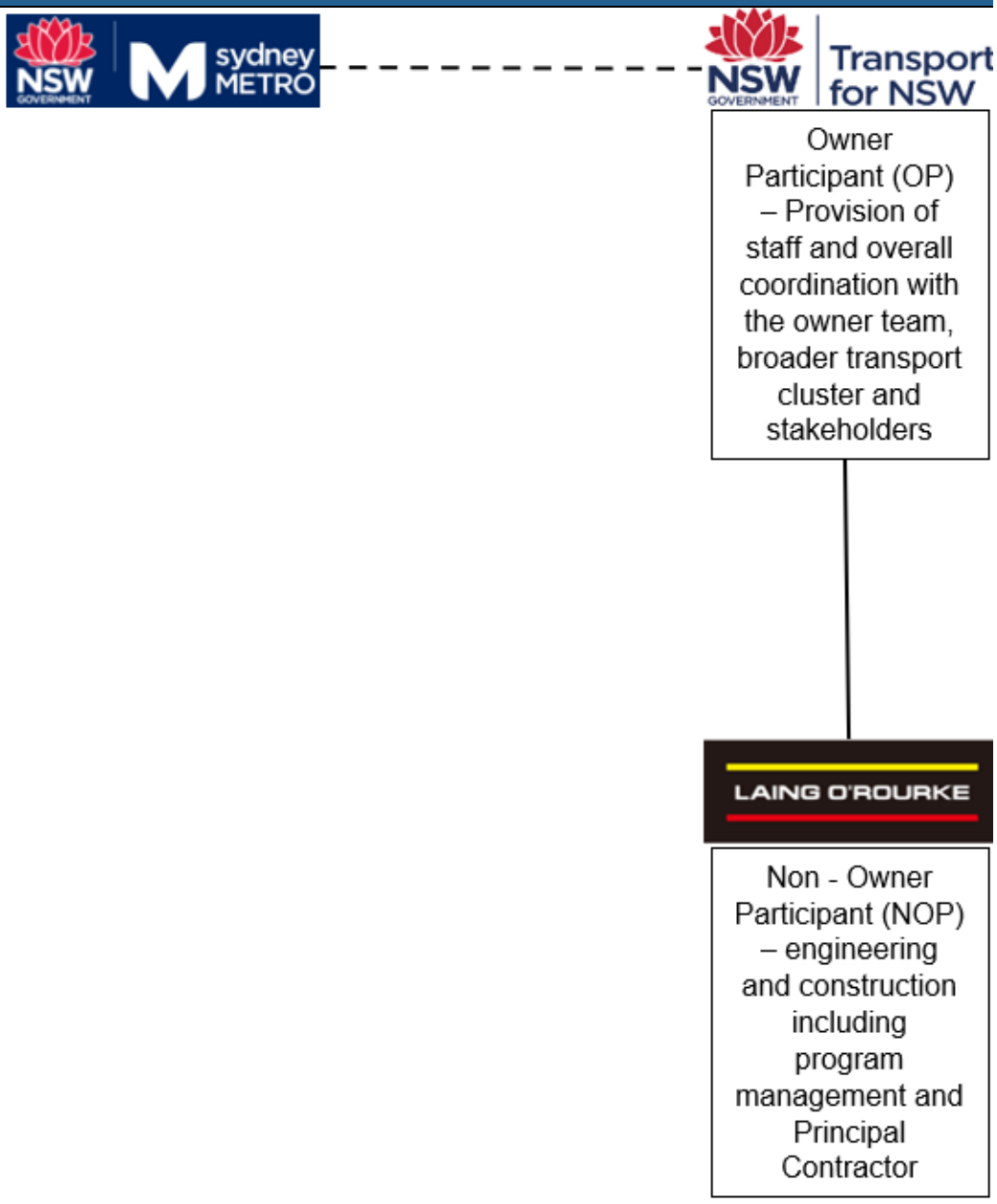
3.0 Roles and Responsibilities

Appropriate responsibilities are provided to all key LORAC personnel and the wider project team to ensure effective environmental management for the duration of the Project. Achievement of identified environmental objectives and targets relies on all site personnel to diligently carry out their duties and to report all environmental incidents and hazards immediately to the Environmental Manager/Advisor.

Each member of the LORAC wider project team and sub-contractors will be site inducted and made aware of their responsibilities in the site inductions. Sub-contractors will be made aware of CEMP requirements during tendering and will be expected to demonstrate as part of their tender response how they intend to meet the Project's CEMP and sustainability requirements. This will ensure that environmental competence is retained for all subcontractors. The responsibilities of key LORAC personnel are summarised in the table below. The relationship between LORAC, TfNSW personal and SM-WSA is depicted in an organisation chart presented in Figure 4.

Table 3: Construction Environmental Management Roles and Responsibilities

Role	Responsibilities
Delivery Entity	• Laing O'Rourke and TfNSW delivering the SM WSA AEW – Footbridge St Marys works.

Role	Responsibilities
	
Sydney Metro WSA (Principal)	• Sydney metro has responsibility in ensuring compliance with Planning Approval for the project works, as the Proponent under the EP&A Act. • Sydney metro is responsible for the provision of contracts and procurement of Principal Contractors. • The project will regularly report to Sydney Metro as requested to comply with regulatory approvals and licences. • Sydney Metro will undertake submission of the required environmental documents to the Planning Secretary and will confirm approval to the Principal Contractor. • Sydney Metro will undertake regular audits of the Contractors against their environmental obligations. • Sydney Metro will engage the Environmental Representative for the project in accordance with the Project Approvals.

Role	Responsibilities
Environmental Representative (MCoA A32)	• Receive and respond to communication from the Planning secretary in relation to the environmental performance of the CSSI • Consider and inform the Planning Secretary of any improvements that may be made to work practices to avoid or minimise adverse impact to the environment and community • Review, provide comment on and endorse (where required) any relevant environmental documentation to verify it is prepared in accordance with relevant environmental legislation, planning approval conditions, Environment Protection Licences, relevant standards and this CEMF; • Monitor and report on the implementation and performance of the above mentioned documentation and other relevant documentation; • Provide independent guidance and advice to Sydney Metro and the Contractors in relation to environmental compliance issues and the interpretation of planning approval conditions; • Be the principal point of advice for the DPHI in relation to all questions and complaints concerning the environmental performance of the project; • Ensure that environmental auditing is undertaken in accordance with all relevant project requirements; and • Recommend reasonable steps, including 'stop works', to be taken to avoid or minimise adverse environmental impacts. • Will participate in the resolution of community complaints received directly by the department, if requested by the planning secretary. • Consider or assess the impacts of ancillary facilities as required by the Conditions of Approval MCoA A17-A22. • Consider any minor amendments to the CEMP and provide comment and endorsement • Endorse Low Impact Work Applications as per the Sydney Metro proforma; o Operation of ancillary facilities if the ER has determined the operational activities will have minimal impact on the environment and community; o Relocation and connection of utilities where the relocation or connection has a minor impact to the environment as determined by the ER; o Other activities determined by the ER to have minimal environmental impact which may include but not limited to demolition, construction of minor access roads, temporary relocation of pedestrian and cycle paths and the provision of property access.
Independent Certifier	• Assess and certify the Project for compliance, including environmental requirements
General Manager (LORAC)	• Accountable for the implementation of CEMP • Ensure internal audits of the system are conducted • Review audit corrective actions and act as necessary to ensure timely closeout of issues • Authorise expenditure on environmental issues within limits of authority • Ensure adequate resources are made available to meet environmental obligations and objectives • Resolve major issues that cannot be resolved by Project Managers.
Project Operational Leader (LORAC)	• Ensure that environmental performance and knowledge is communicated at senior management team meetings • Ensure that environmental obligations are met across all projects • Consult with the environmental team on sustainability matters or opportunities as they arise during project development • Champion the environmental program objectives.

Role	Responsibilities
Project Manager (LORAC)	• Ensure the project responsibilities and authorities are defined and communicated • Provide adequate resources to meet environmental obligations and objectives • Ensure the CEMP is effectively implemented and maintained • Appoint and provide support for the Environmental Manager • Report to senior management on the performance of the system and environmental breaches • Take action to resolve environmental non-compliances and incidents • Ensure suppliers and subcontractors comply with requirements • Report environmental incidents to the client and local authorities as required.
Construction Manager (LORAC)	• Reports to the Project Leader • Supervise all site construction activities and personnel to ensure they meet environmental and other requirements • Organise and manage site plant, labour, and temporary materials • Ensure that site environmental controls are properly maintained and provide support for the implementation of the requirements • Report all environmental incidents • Take action to resolve non-compliances and incidents.
Commercial, Finance and Procurement Lead (LORAC)	• Carefully select suppliers and subcontractors based upon their ability to meet stated requirements • Ensure purchase orders and agreements include environmental requirements as necessary • Select environmentally friendly materials where possible.
Environmental Manager (LORAC)	• Ensure the CEMP is effectively established, implemented and maintained • Ensure compliance with all relevant statutes, regulations, rules, procedures, standards and policies • Liaise with Sydney Metro Environmental Representatives on environmental issues, including compliance matters. (incidents, conditions of approval, change management, emergencies or deviations from the CEMP) • Oversees and advises the onsite Environmental Site Representative in the establishment, implementation, maintenance and compliance with Instrument of Approval SSI 10051, CEMF, REMMs, and upgrades to these documents (as needed) to remain current with the progress of the works • Ensure that all personnel on site receive appropriate environmental induction and training and are aware of their environmental responsibilities under relevant legislation and the contract • Report to the General Manager / Project Managers on the performance of the system and improvement opportunities • Provide support to the team to enable them to meet their environmental commitments • Ensure environmental records and files management process are established and implemented • Conduct regular compliance checks as required by this plan • Stop activities where there is an actual or immediate risk of harm to the environment or to prevent environmental non-compliances until risk is rectified and advise the Project Manager and the Site Supervisor • Assess any change to the Project scope and activities against approvals and licences • Ensure environmental actions raised by Sydney Metro, TfNSW and the ER are closed out and reported by the project team

Role	Responsibilities
	• Ensure non-compliances and environmental incidents are recorded and written reports provided to Sydney Metro Environmental Manager and Environmental Representative as necessary • Must have tertiary qualification in Environmental Science, Environmental Engineering or equivalent, and a minimum of three (3) years' experience in environmental management of projects.
Environmental Advisor / Coordinator (LORAC)	• Provide onsite support to oversee the implementation of the environmental aspects of the project • Collaborating with client's team, project management team, and other personnel on the project to provide strategic advice on environmental outcomes, to ensure compliance and improve the environmental performance • Implementing the project's environmental management system • Ensuring that the CEMP is established, implemented and maintained in compliance of the Instrument of Approval SSI 10051, Revised Environmental Mitigation Measures, Low Impact Minor Works Approvals, unexpected finds procedures including, procedures and upgrades to these documents (as needed) to remain current with the progress of the works • Completion of environmental inspections and assurance actions on site. • Facilitate environmental induction and toolbox talks for all site personnel • Review completed environmental records to ensure compliance with specified requirements • Ensure environmental Non-compliance and incidents are reported and recorded • Overall responsibility for the establishment, management, monitoring and maintenance of environmental controls within the Site, including noise monitoring • Monitor, develop and implement environmental change management processes and out of hours works approvals documentation • Specific authority to stop work on any activity where deemed it necessary to prevent environmental nonconformities • Notify relevant parties of any environmental incidents • Ensure environmental records and files are collected and maintained • Relevant tertiary qualification in Environmental Science, Environmental Engineering or equivalent.
Communication and Stakeholder Relations Manager	• Leadership and management of the Communications, Stakeholder and Community Relations Team • Build and maintain effective working relationship with TfNSW's representative and Stakeholder and Community Liaison team • Develops and oversees the implementation of the CCS and subplans • Responsible for a stakeholder and community relations induction and training program for all personnel involved in the performance of the project • Approves the Communications, Stakeholder and Community Relations team roles, role descriptions and responsibilities • Ensures the Community Communications Strategy and key activities are integrated into the project schedule • Attends the TfNSW led Communications Management Control Group and reports on activities, strategies and issues • Attends the monthly Project Management Review Group meeting to discuss project status and issues • Issues and crisis management • Manages media issues and acts as media spokesperson for JHLORJV (subject to media protocols)

Role	Responsibilities
	• Responsible for the Communications and Stakeholder Management KPI as well as the Communications and Stakeholder management component of the Quality of Information and Relationship with the Principal's representative KPI • Required to be on call 24 hours based on the team rotation • Liaise directly with the Independent Environment Representative as required and where appropriate to facilitate any environmental management requirements, including those identified within the Planning Approvals.
Community Place Manager	• Build and maintain effective working relationship with community, businesses, and stakeholders • Support the successful delivery of the project's Community Communication's Strategy and requirements • Implementation of the Community Communications Strategy and any relevant Sub-plans • Establish effective working relationships with local stakeholder to support the effective delivery of the project • Required to be on call 24 hours based on the team rotation to respond to enquiries and complaints. • Review, approve and oversee the development and distribution of all notification, newsletter, social media, photography, and other communication material. • Maintain the Consultation Manager database and generate reports as required. • Drives Communications and Stakeholder Management KPIs as well as the Communications and Stakeholder management component of the Quality of Information and Relationship with the Principal's representative KPI
Non-owner Participant corporate environmental leaders	• Provide coordinated functional environmental support to the team • Coordinate internal audits as part of NOP corporate business-wide audit schedule.
All personnel (incl. subcontractors)	• Comply with the relevant acts, regulations and standards • Comply with Laing O'Rourke's Environmental Policy and procedures • Promptly report to management on any non-compliances, environmental incidents and/or breaches of the system • Undergo induction and training in environmental awareness as directed by management • Report all incidents • Act in an environmentally responsible manner.
Supply chain partners	• Comply with all legal and contractual requirements • Comply with site environmental requirements • Comply with management and supervisory directions • Participate in induction and training as directed • Report all incidents. • Subcontractors to operate within Laing O'Rourke's EMS documentation.
Environmental Consultants	• Noise and Vibration specialist advice – RWDI Australia Pty Ltd ((refer to the DNVIS in attachment S) • Aboriginal and Built Heritage specialist advice during Construction – Artefact Heritage • Excavation Director (refer to the Heritage Management Procedure for detailed responsibilities) – Sophie Jennings & Kat McRae, GML • Heritage Architects – specialist input into design development – Artefact Heritage (Sydney Metro - Western Sydney Airport Technical Paper 4: Non-Aboriginal heritage) • Arborist Reports – Tree Survey

Role	Responsibilities
	• Tree Lopping Services – Treelink • Environmental Consultants are to comply with all Supply Chain Partner responsibilities • Consultants are to have relevant experience required to undertake and provide professional advice and deliver reports.

4.0 Organisational Structure

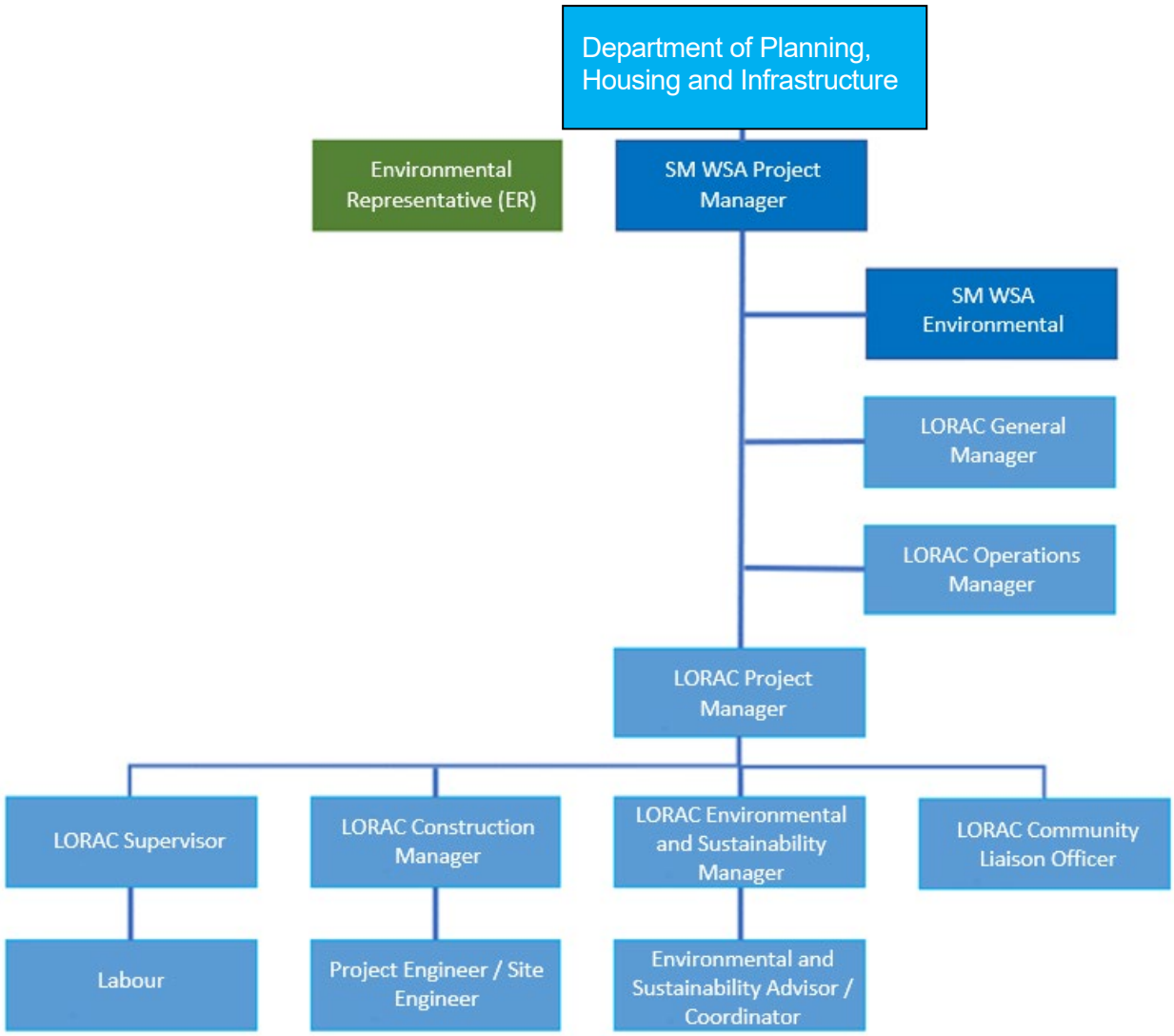


Figure 4: Organisational Structure

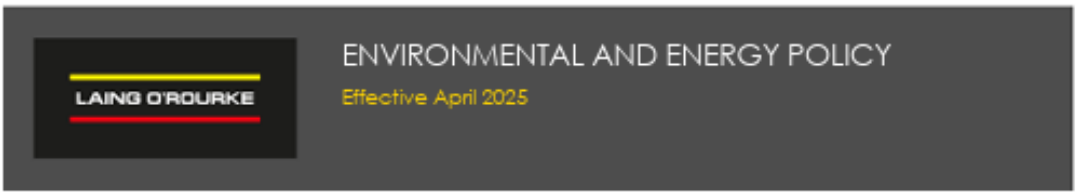
The Environmental and Sustainability team for the project reports functionally to the Project technical Lead and is integrated within the programme management and delivery teams as shown in figure 5.



5.0 Environmental and Energy Policy

Laing O'Rourke is committed to the protection and enhancement of the environment and embracing sustainability as an integral part of fulfilling the Program objectives and targets. Laing O'Rourke's Management Systems, Environmental and Energy Policy will form part of the policy framework and will apply to all aspects of the works.

Laing O'Rourke is committed to be consistent with the Sydney Metro – Western Sydney Airport Sustainability Plan and the Sydney Metro Environment and Sustainability Statement of Commitment (CEMF 3.1b vi), with all subcontractors to work under LORAC's EMS (CEMF 3.1c).



ENVIRONMENTAL AND ENERGY

Laing O'Rourke is an engineering enterprise, focused on major construction projects and strategic programmes, delivering certainty for clients from the earliest engagement and throughout the project lifecycle. Through a focus on certainty of delivery, we will maintain an enduring and sustainable enterprise.

We are committed to protecting and enhancing the environment through implementation and continual improvement of our environmental and energy management systems. This policy sits alongside our sustainability and supply chain policies as part of our global policy framework, underpinned by our Global Code of Conduct.

Our commitment is to enhance environmental performance and energy efficiency through the implementation of leading practices and innovation throughout all of our operations, offices, and facilities, spanning the entire project lifecycle.

This policy will be realised by:

- Demonstrating leadership through our environmental agenda
- Complying with relevant legislation, our client, and environmental management system requirements, and regularly evaluating and reporting on our compliance obligations
- Preventing harm to the environment
- Proactively minimising environmental impacts, including direct and embodied carbon emissions and emissions intensity and providing energy-efficient/low-carbon assets for our clients
- Continually improving our environmental and energy performance through clear objectives, targets, and programmes
- Providing sufficient and competent resources to achieve our environmental and energy-related objectives and targets
- Pursuing opportunities in the design and sourcing of our products, services, and supply chain to reduce carbon emissions and improve energy efficiency in the delivery and operation of the assets we build
- Engaging with our stakeholders including clients, suppliers, regulators and industry bodies to address lifecycle aspects and minimise our impacts on the environment
- Improving resource efficiency through by applying the principles of a circular economy and reducing waste using the waste hierarchy
- Reducing our water consumption and improving water efficiency in all our operations
- Protecting, preserving and identifying opportunities to enhance biodiversity and land quality
- Communicating and addressing the risks and opportunities associated with the impacts of our activities, products and services
- Enhancing employee understanding of environmental sustainability by providing clear direction and stimulating cultural change
- Maintaining ISO 14001 certification for our principal businesses and ISO 50001 certification in the UK and progressing further certifications for our products and services as appropriate

The Board of Directors of Laing O'Rourke fully endorses this policy.

Ray O'Rourke KBE
Chairman

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Figure 6: Environmental and Energy Policy

Our goal is to work with stakeholders to minimise any negative impacts of our operations and maximise the quality of the built infrastructure for future generations. Through innovation and application of leading practice, we aim to steer the industry to design sustainable and high-quality built infrastructure with as little negative environmental impact as possible throughout the asset lifecycle. We will balance negative impacts with innovative opportunities to improve environmental outcomes associated with the works.

All personnel associated with the works, including subcontractors and supply chain partners, will be required to comply with the spirit and intent of the policy. It will be:

- Displayed at prominent locations on site and at associated facilities
- Communicated to personnel during induction and training
- Made accessible to stakeholders and interested members of the community.

6.0 Environmental Management System

For the purposes of the works, Laing O'Rourke's Environmental Management System, currently certified (No. 4749) with Sci Qual will be implemented. The system has been continuously certified as compliant with AS/NZS ISO 14001 since 1997. The Environmental Management System forms part of Laing O'Rourke's integrated Health, Safety and Environmental Management System and can be accessed at: HSEMS – Environmental Requirements.

Laing O'Rourke is committed to be consistent with the Sydney Metro – Western Sydney Airport Sustainability Plan and the Sydney Metro Environment and Sustainability Statement of Commitment (CEMF 3.1b vi), with all subcontractors to work under LORAC's EMS (CEMF 3.1c).

This plan acts as a link to and roadmap for the elements of Laing O'Rourke's Environmental Management System relevant to the works. The Environmental System Requirements and the shared system requirements have been designed and developed to address the processes necessary to meet environmental compliance obligations, policy and objectives as part of the EMS. Collectively they form the Laing O'Rourke Environmental Management System. The system collectively complies with the requirements of AS/NZS ISO 14001.

Figure 6 depicts The Environmental System Requirements, while Figure 7 presents its certification.

Environmental System Requirements

Figure 7: Laing O'Rourke's Environmental Systems Requirements

SCI QUAL INTERNATIONAL

Environment Management Systems

Certificate of Registration

Laing O'Rourke Australia Construction Pty Limited

LORA National Pty Ltd

Laing O'Rourke Australia PM Pty Ltd

Level 21, 100 Mount Street, North Sydney NSW 2060
Level 2, M & A Building, 825 Ann Street, Fortitude Valley QLD 4006
Level 24, IBM Centre, 60 City Road, Southbank VIC 3006
Level 13, 197 St Georges Terrace, Perth WA 6100

In recognition of the implementation of a management system conforming to

ISO 14001:2015

The Scope of Certification covers the following activities:

Processes associated with the design, construction and project management of multi-discipline engineering construction and building projects including rail; commercial, residential and special purpose buildings; roads and bridges; gas; water and associated infrastructure and civil works.

Certificate No.	Date of Issue	Certification Date	Expiry Date
4749	28 September 2023	6 September 1991	30 October 2026

Alain Etchegaray
GENERAL MANAGER

Signed for and on behalf of
Sci Qual International Pty Ltd

JAS-ANZ

Level 7, 10 Felix Street, Brisbane Qld 4000

The certificate of Registration, which remains the property of Sci Qual International Pty Ltd, is granted subject to the Regulations governing the certification scheme operated by Sci Qual International Pty Ltd and in respect of goods or services described in the schedule hereto, bearing the same number as this certificate.



Environment Management Systems

Certificate of Registration

LOR Rail Operations Pty Ltd

Level 21, 100 Mount Street, North Sydney NSW 2060
1 Distribution Place, Seven Hills NSW 2147
Lot 643 Junction Street, Telarah NSW 2320
107 William Angliss Drive, Laverton North VIC 3026

In recognition of the implementation of a management system conforming to

ISO 14001:2015

The Scope of Certification covers the following activities:

The provision of engineering, design, construction, maintenance and project management services for multi-discipline Rail Systems and Civil Infrastructure projects, renewals, enhancements and upgrades.

Certificate No.	Date of Issue	Certification Date	Expiry Date
5807	20 September 2023	20 September 2023	30 October 2026

Alain Etchegaray
GENERAL MANAGER

Signed for and on behalf of
Sci Qual International Pty Ltd

JAS-ANZ

Level 7, 10 Felix Street, Brisbane Qld 4000

The certificate of Registration, which remains the property of Sci Qual International Pty Ltd, is granted subject to the Regulations governing the certification scheme operated by Sci Qual International Pty Ltd and in respect of goods or services described in the schedule hereto, bearing the same number as this certificate.

Figure 8: HSEMS Certification

6.1 Laing O'Rourke Environmental Management System

The project management system consists of the Environmental Risk Actions Plans contained within this CEMP and Environmental Control Maps.

The CEMP details a project wide approach describing intricacies of the project site with Environmental Control Maps developed progressively with detail specific control measures required at for each stage of works.

It should be noted that the CEMP has been developed to comply with project's MCoA, CEMF, REMMS Staging Report and Sydney Metro requirements.

The LORAC Environmental Management System is to align with the Sydney Metro Environment and Sustainability Management System as per Figure 1 in the CEMF (CEMF 3.1d).

6.1.1 Management of Sustainability

Managing sustainability requires a holistic approach and will naturally interface with many disciplines and management plans across the works.

Laing O'Rourke's approach to sustainability for this project is documented in the Sydney Metro Enabling Works Sustainability Management Plan (SMP). Laing O'Rourke is committed to be consistent with the Sydney Metro – Western Sydney Airport Sustainability Plan and the Sydney Metro Environment and Sustainability Statement of Commitment (CEMF 3.1b vi), with all subcontractors to work under Laing O'Rourke EMS (CEMF 3.1c).

6.1.2 TfNSW Sustainable Design Guidelines (SDG)

Laing O'Rourke is seeking to deliver "Gold" Rating under the TfNSW Sustainable Design Guidelines (SDG) Requirements Version 4.0 as per the requirements of TfNSW for this scale of project.

6.1.3 Sydney Metro-WSA Standard Requirements

Laing O'Rourke will ensure that all works are carried out in accordance with the Sydney Metro-WSA Environmental Management Framework documents. Laing O'Rourke will provide sufficient competent environmental resources on and offsite to ensure effective implementation of the Construction Environmental Management Plan (CEMP). Laing O'Rourke's activities will have regard to the following reference documents:

- Exhibit DI - PA-FSM-001 Sydney Metro Western Sydney Airport CSSI- Conditions of Approval
- Exhibit D1 - PA-FSM-002 Sydney Metro CSSI Aboriginal Cultural Heritage Management Plan
- Exhibit D1 - PA-FSM-003 Sydney Metro Unexpected Heritage Finds Procedure
- Exhibit D1 - PA-FSM-004 Revised PD, PO and EMMs
- Exhibit D1 - PA-FSM-005 Sydney Metro Overarching Community Communications Strategy
- Exhibit 01- PA-FSM-006 Sydney Metro Construction Environmental Management Framework
- Exhibit D1 - PA-FSM-007 Sydney Metro Construction Noise and Vibration Standard
- Exhibit D1 - PA-FSM-008 Sydney Metro Revised Biodiversity Development Assessment Report
- Exhibit D1 - PA-FSM-009 Sydney Metro Revised Aboriginal Cultural Heritage Assessment Report
- Exhibit D1 - PA-FSM-010 Sydney Metro Aboriginal Archaeological Report
- Exhibit D1 - PA-FSM-011 Sydney Metro Archaeological Research Design
- Exhibit D1 - PA-FSM-012 Sydney Metro Construction Traffic Management Framework
- Exhibit D1 - PA-FSM-013 Sydney Metro OOHW Protocol
- Exhibit D1 - PA-FSM-014 Sydney Metro Environment and Sustainability Statement of

Commitment

- Exhibit D1 - PA-FSM-01S Transport Environment and Sustainability Policy
- Exhibit D1 - PA-FSM-016 Sydney Metro Contaminated Land Management Procedures
- Exhibit 01- PA-FSM-017 Sydney Metro Environmental Compliance and Sustainability Reporting Procedure
- Exhibit 01- PA-FSM-018 Sydney Metro Environmental Incident and Non-compliance Reporting Procedure
- Exhibit D1 - PA-FSM-019 Sydney Metro Water Discharge and Re-use Procedure
- Exhibit D1 - PA-FSM-020 Sydney Metro Out-of-hours work application form
- Exhibit D1 – PA – FSM-021 SMWSA Staging Report v11_FINAL

6.1.4 Lifecycle Perspective

Laing O'Rourke's partners take a lifecycle approach and perspective to business activities, which we will apply to the environmental aspects of the works. This involves understanding the relevant stages of a product or service system, from raw material acquisition or generation from natural resources to final incorporation or disposal. Delivery can be divided into five broad categories:

- **Development:** Environmental planning, estimating and cost planning and proposals
- **Commercial:** Head contract and subcontract formation
- **Engineering:** Feasibility studies, concept design, front-end engineering design and detailed design
- **Procurement:** Supply and delivery of goods and services
- **Delivery:** Construction and commissioning.

When applying a lifecycle perspective, Laing O'Rourke will consider the:

- Stage in the lifecycle of the product or service
- Degree of control we have over the lifecycle stages
- Degree of influence we have over the lifecycle
- Life of the product
- Ability to influence the supply chain.

At each stage of delivery, Laing O'Rourke will consider aspects and opportunities to influence lifecycle outcomes.

7.0 Environmental Objectives and Targets

Laing O'Rourke's overarching environmental objectives are to:

- Encourage best-practice management through planning, commitment and continuous improvement
- Prevent and minimise adverse impacts on the environment
- Identify the potential for, and respond to environmental incidents, accidents and emergencies and take corrective action to limit the environmental impact
- Identify and control possible environmental hazards associated with the works

- Establish procedures to ensure no hazardous substance is stored on site without approval
- Recognise and protect any special environmental values and characteristics of the site, including cultural heritage significance
- Define environmental roles and responsibilities for personnel
- Ensure employees and supply chain partners undertake environmental training and awareness programs
- Ensure supply chain partners implement and adhere to the CEMP
- Describe monitoring procedures required to identify impacts on the environment resulting from the works
- Establish and maintain programs and procedures for periodic CEMP audits to be carried out
- Comply with all CSSI 10051 Minister's Conditions of Approval, Revised Environmental Mitigation Measures, Construction Environmental Management Framework, Staging Report Objectives and other environmental requirements.

Laing O'Rourke will review the Program objectives and targets as required, with non-compliances and corrective actions tracked in our digital data capture and action tracking system INTELEX. INTELEX is a cloud-based, tablet-enabled software system that will allow our site team to complete inspection activities and raise and assign environmental actions in real-time. A copy of the audit and any findings will be issued to TfNSW and Sydney Metro-WSA. Table 4 sets out the key metrics we will use to measure environmental performance.

Table 4: Environmental performance metrics

Objective	Target	Reporting and Monitoring
Effective site environmental controls	Environmental assessment and set-up completed prior to and during works in identified or affected areas which require environmental management protocols Effective environmental controls, monitoring and sampling requirements maintained for the duration of the work scope for environmental compliance Up-to-date environmental control maps, erosion and sediment control plans and records implemented throughout the works.	Inspection reporting
Environmental performance	Zero major environmental incidents No breaches of the CEMP, permits, or documents under conditions of approval No breaches of any other environmental approvals relevant to the scope of works Any minor incidents such as minor spillages reported and dealt with quickly and efficiently within appropriate periods Major incidents reported immediately to the Principal's Representative No Class 1 or Class 2 incidents.	Monthly reports
Environmental lead indicators	30/60/90 risk reviews are completed each month 100% of actions from environmental inspections closed out within the agreed timeframes	Monthly reports

Objective	Target	Reporting and Monitoring
	Environmental training program implemented 100% of personnel participate in at least one environmental toolbox talk per month Severe environmental risk (SER) program implemented Supply chain inspection audit program implemented.	
Effective implementation of the environmental system	No level, 1 corrective action requests (CARs) Under three level, 2 risks each report Under 10 level, 3 risks each report Closure of CARs within the nominated timeframe Timely release of environmental hold points Statutory reporting and contract reporting completed within the agreed timeframes to the agreed quality.	Audit report

Sustainability objectives and targets

Laing O'Rourke is integrating sustainability across our entire project offering, ensuring all team members understand the contribution of their role to the project's sustainability success. Sustainability is part of the shared team vision for project success and ways of working, rather than a bolt-on feature delivered separately by the Sustainability team. Details of the requirements are detailed in the Sustainability Management Plan and reported through the Monthly Sustainability Report. This CEMP includes references to sustainability outcomes that will be evidenced in TfNSW Sustainability Design Guidelines tracking

Laing O'Rourke is committed to be consistent with the Sydney Metro – Western Sydney Airport Sustainability Plan and the Sydney Metro Environment and Sustainability Statement of Commitment (CEMF 3.1b vi), with all subcontractors to work under LORAC's EMS (CEMF 3.1c).
The management measures to address the Environmental Performance Objectives of the Footbridge St Marys works are given in Table 5.

Table 5. Key Environmental Performance Objectives as per Staging Report

Environmental Performance Objective Topic	Environmental Performance Objective	Triggered in Staging Report	Target	Management Measure
Supporting the provision of successful places – the project is integrated with and enhances the environment where it is located. Including improved accessibility and connectivity for communities.	The Applicable – Western Sydney Airport Design Guidelines and Design quality framework are implemented to deliver a rail corridor, stations and ancillary facilities that achieve the project vision and design objectives	Yes	The Footbridge St Marys works will be carried out generally in accordance with the design prepared by SM-WSA/TfNSW that is consistent with the appropriate design guidelines.	Any proposed changes to the design of the Footbridge St Marys works during construction will be referred to SM-WSA for review to ensure it meets the applicable design guidelines. This Performance Objective will be documented and illustrated in the Place, Urban Design and Corridor Landscape Plan
	Design excellence is exhibited in the project to complement the anticipated character of the precincts in which the project is located	Yes	The Footbridge St Marys works are located immediately adjacent to the exiting St Marys Station and will facilitate interchange between the future SMWSA St Marys metro station, Harris Street car-park, and existing Sydney Trains platforms at St Marys. The works are therefore consistent with the current and anticipated character of the precinct.	The works will be delivered as per the reference design objectives. Any design changes will be referred to SM-WSA for review.
	Accessibility and connectivity between future communities is supported by the project through opportunities to integrate with key project components such as stations	Yes	The Footbridge St Marys works facilitates the interchange between the future Sydney metro station and tunnels, the footbridge traverses above the existing Sydney Trains platforms at St Marys to maintain access. The new footbridge will also maintain access to the taxi rank and kiss and ride facilities.	The works will be delivered as per the reference design objectives. Any design changes will be referred to SM-WSA for review.
	Within Western Sydney International, the project is integrated with and supports the outcomes and design objectives set out in the Airport Plan, future master plans for Western Sydney International and design guidelines for Western Sydney International	No	Not Applicable	Not Applicable
The project contributes to greener places through supporting the	The number of trees within the project area is increased at a ratio of 2:1 (for vegetation	No	All vegetation within the Footbridge St Marys construction boundary has been allowed for	Vegetation removal is to be undertaken as per design objectives with TPZs to be

Environmental Performance Objective Topic	Environmental Performance Objective	Triggered in Staging Report	Target	Management Measure
enhancement and provision of green infrastructure	removal not subject to biodiversity offset); and tree canopy coverage is increased, using a range of local species, subject to the constraints on tree planting associated with safe airport operations		removal under the EIS. A preference to trim over remove is to be undertaken. The works are therefore consistent with the current and anticipated character of the precinct.	erected around trees to be retained. Tree impact survey to be supplied to SM to enable consideration for the PUDCLP for the tree replacement.
Network connectivity, safety and efficiency of the transport system in the vicinity of the project are managed to minimise impacts. The safety of transport system customers is maintained Impacts on network capacity and the level of service are effectively managed.	Safe and efficient routes are provided for pedestrians, cyclists and road users at/near construction sites.	Yes	Safe routes to the Motorists, Pedestrians and cyclists will be provided. Impacts to traffic and transport are minimised.	Traffic management measures will be undertaken in accordance with the MCoAs, REMMs, CTMF and CTMP.
	Access to the existing St Marys station is maintained while train services are operating.	Yes	Access to the existing St Marys station will be maintained throughout the construction of the Footbridge St Marys works.	Management measures will be undertaken in accordance with the LORAC CTMP.
	Safe access to properties and businesses is maintained during construction, unless alternatives are agreed with property owners and businesses.	Yes	Impacts to traffic and transport are minimised. Commuters' safety will be maintained. Safe access to properties and business will be maintained throughout construction.	Management measures will be undertaken in accordance with the CTMP, CLMP and Small Business Owners Engagement plan (incl. wayfinding signage)
	Heavy vehicles access the arterial network as soon as practicable on route to, and immediately after leaving a construction site	Yes		
	The local community and relevant authorities are informed of transport, access and parking changes/impacts to minimise inconvenience to the public.	Yes		
	Safe and efficient interchanges are provided between transport modes.	Yes		
	Transport interchange facilities provided at station precincts are designed in accordance with the modal access hierarchy	Yes		
	Each station and station plaza is provided with sufficient customer capacity to achieve a minimum Fruin's level of Service C (for 2056 demand)	Yes		
	Stations and interchanges are fully accessible and compliant with the Disability Discrimination	Yes		

Environmental Performance Objective Topic	Environmental Performance Objective	Triggered in Staging Report	Target	Management Measure
	Act 1992 (Cth) and the Disability Standards for Accessible Public Transport (Australian Government, 2002)			
Works are compatible with existing infrastructure and future transport corridors	The project is designed to be compatible with existing infrastructure and future transport corridors	Yes	The Footbridge St Marys works will be carried out in accordance with the design prepared by SM-WSA/TfNSW that is consistent with the appropriate design guidelines. The proposed footbridge will be constructed above the existing Sydney Trains to facilitate the future and existing transport corridors	The works will be delivered as per the reference design objectives. Any design changes will be referred to SM-WSA for review.
Construction noise and vibration (including airborne noise, ground-borne noise and blasting) is effectively managed to minimise adverse impacts on acoustic amenity construction noise and vibration (including airborne noise, ground-borne noise and blasting) are effectively managed to minimise adverse impacts on the structural integrity of buildings and items including aboriginal places and environmental heritage	Construction noise and vibration impacts on local communities (including airborne noise and ground-borne noise and vibration) are managed in accordance with the Construction Noise and Vibration Standard, the Interim Construction Noise Guideline, and the airports (Environment Protection) Regulations 1997.	Yes	The project will implement measures to minimise the noise and vibration impacts where reasonable and feasible, of construction activities on local receivers in accordance with the ICNG.	Noise and Vibration management will be undertaken throughout the construction in accordance with the Sydney Metro Construction Noise and Vibration Standard, Noise and Vibration management Procedure (Attachment F- ERAPs: Noise and Vibration Management Procedure) Completed DNVIS (Attachment S) Use of non-vibratory and smaller equipment to be utilised where practicable. Monthly notification and AMMs to be provided to potentially impacted receivers as identified in DNVIS.
	Structural damage to buildings, heritage items and public utilities and infrastructure, including the Warragamba to Prospect Water Supply Pipelines, from construction vibration to be avoided	Yes		
Increases in noise emissions and vibration affecting nearby properties and other sensitive receivers during operation of the project are effectively managed to protect the amenity and well-being of the community.	Operational noise and vibration levels from rail operations are managed in accordance with the Rail Infrastructure Noise Guidelines and Airports (Environment Protection) Regulations 1997	No	Not Applicable	Not Applicable
	Operational noise levels for the stabling and maintenance facility, stations and other fixed infrastructure are managed in accordance with the Noise Policy for Industry 2017	No	Not Applicable	Not Applicable

Environmental Performance Objective Topic	Environmental Performance Objective	Triggered in Staging Report	Target	Management Measure
The project design considers all feasible measures to avoid and minimise impacts on terrestrial and aquatic biodiversity	Minimise or where possible avoid impacts on threatened flora and fauna species, and ecological communities listed under the Biodiversity Conservation Act 2016 (NSW) and Environment Protection and Biodiversity Conservation Act 1999 (Cth)	No	Not Applicable	Not Applicable
	Manage groundwater drawdown at Orchard Hills to avoid or minimise impacts on groundwater dependent ecosystems	No	Not Applicable	Not Applicable
	No removal of any vegetation within the Thompsons Creek riparian zone or any adjacent areas that are non-certified under the south West Growth Area	No	Not Applicable	Not Applicable
	Culverts and bridges would be appropriately sized to maintain fauna habitat connectivity	No	Not Applicable	Not Applicable
	Maintain integrity and functionality of rail corridor fencing to minimise wildlife-train collision while providing opportunities for cross-corridor wildlife movement	No	Not Applicable	Not Applicable
	Re-establish native vegetation in accordance with the National Airports Safeguarding Framework Principles and Guidelines including Guideline C: Managing the Risk of Wildlife Strikes in the Vicinity of Airports (Australian Government, 2014)	No	Not Applicable	Not Applicable
Offsets and/or supplementary measures are assured which are equivalent to any residual impacts of project and operation	Impacts on threatened ecological communities and threatened species are offset in accordance with the requirements of the NSW Biodiversity Assessment Method (OEH, 2017)	No	Not Applicable	Not Applicable
The design, construction and operation of the project facilitates, to the greatest extent possible, the long-term protection, conservation	Impacts on the State heritage significant St Marys Railway Station Group are avoided or minimised so that the overall heritage value of the item is maintained	Yes	Impact to the heritage items is managed in accordance with the relevant legislation, including the EP&A Act, the Heritage Act 1997, and relevant guidelines.	Management of non-Aboriginal heritage will be undertaken through the delivery of the project in accordance with the MCoA, REMMs, CEMF and Heritage Management

Environmental Performance Objective Topic	Environmental Performance Objective	Triggered in Staging Report	Target	Management Measure
and management of the heritage significance of items of environment heritage. The design, construction and operation of the project avoids or minimises impacts, to the greatest extent possible, on the heritage significance of environmental heritage	Impacts on non-aboriginal heritage items and archaeology are minimised or where possible avoided.	Yes		procedure given under the CEMP: Attachment R - Heritage Management procedure. Completion of heritage impact assessment as part of Design phase
	The design of St Marys station is sympathetic to retained and adjacent heritage items	Yes		
	The design of the project incorporates non-aboriginal heritage interpretation.	Yes		
The design, construction and operation of the project facilitates, to the greatest extent possible the long term protection, conservation and management of the heritage significance of items of Aboriginal objects and places. The design, construction and operation of the project avoids or minimises impacts, to the greatest extent possible, on the heritage significance of Aboriginal objects and places	The heritage significance of Aboriginal objects and places are protected, conserved and/or managed in order to ensure the project does not diminish the story and cultural understanding associated with the objects and places of Aboriginal people in New South Wales.	Yes	Impacts on Aboriginal heritage are managed in accordance with relevant legislation, including the EP&A Act, the Heritage Act 1977, and relevant guidelines. The potential impacts to aboriginal places and objects are mitigated by the mitigation measures provided.	The project documents have not identified any Aboriginal sites or areas of archaeological potential at St Marys Station. Therefore, no mitigation is expected to be required as part of the enabling works. The Sydney Metro Unexpected Heritage Finds Procedure will be implemented for the project.
	Impacts on areas of archaeological sensitivity and significance are avoided or minimised, where practical	Yes		
	The design of the project incorporates Aboriginal heritage interpretation and aboriginal cultural design principles in consultation with Aboriginal knowledge holders	Yes		
The project minimises adverse impacts on flooding characteristics. Construction and operation of the project avoids or minimises the risk of, and adverse impacts from, infrastructure flooding, flooding hazards, or dam failure. Long term impacts on surface water and ground water hydrology (including drawdown, flow rates and volumes)	Land and property beyond the construction footprint would not be impacted by construction for the 0.5 Exceedances per Year (EY) storm event	No	Not Applicable	Not Applicable
	No aspect of construction to materially adversely affect existing water quality in receiving waters to a minimum 0.5 EY storm event, or in line with the 'Blue Book' (Managing Urban Stormwater: Soils & Construction Volume 1 (Landcom, 2004)	Yes	The project would protect or contribute to achieving the Water Quality Objectives, during Construction. Construction water quality discharge (if required) would comply with the requirements of the CoAs. Management of water within the construction works area would	Progressive erosion and sediment control plans to be implemented with appropriate controls for the level of risk.

Environmental Performance Objective Topic	Environmental Performance Objective	Triggered in Staging Report	Target	Management Measure
are minimised. The environmental values of nearby, connected and affected water sources, groundwater and dependent ecological systems including estuarine and marine water (if Applicable) are maintained (where values are achieve) or improved and maintained (where values are not achieved) Sustainable use of water resources. The project is designed, constructed and operated to protect the NSW Water Quality Objectives where they are currently being achieved, and contribute towards achievement of the Water Quality Objectives over time where they are currently not being achieved, including downstream of the project impact including estuarine and marine waters (if Applicable)			be completed in accordance with the Blue Book Vol 2.	
	No material change to channel shape within the construction footprint for the 0.5 EY storm event for streams classified first order and higher	No	Not applicable	Not applicable
	Water discharged from the project, including runoff from hardstand areas, surface and ground water storages would: • contribute towards achieving ANZECC guideline water quality trigger values for physical and chemical stressors for slightly disturbed ecosystems in lowland rivers in southeast NSW, or • meet any water quality criteria determined in consultation with the NSW Environment Protection Authority (off-airport) where an EPL is required or in consultation with Western Sydney Airport in accordance with the Airports (Environmental Protection) Regulations 1997 (on-airport)	Yes	The project would protect or contribute to achieving the ANZECC guidelines and any other water quality criteria for water leaving the site during Construction. Construction water quality discharge (if required) would comply with the requirements of the CoAs.	Small volumes of groundwater are expected to be encountered during the works, a Cme has not been allocated by Sydney Metro to the FSM project. If groundwater is encountered and dewatering is required, it will be tested, treated if required and discharged to the ballast if it meets the discharge criteria. If groundwater does not meet the discharge criteria after treatment, it will be transported to a suitably licensed waste facility for disposal. No groundwater will be discharged directly to stormwater. Progressive erosion and sediment control maps and controls are to be installed to mitigate water leaving the construction site. No EPL is applicable to these works.
	Drainage from the project (including the stabling and maintenance facility, service facilities and stations) designed in accordance with local council requirements for managing urban stormwater quality and quantity	Yes	The project will be constructed in accordance with the design prepared by SM-WSA/TfNSW that is consistent with the appropriate design guidelines.	The works will be delivered as per the reference design objectives. Any design changes will be referred to SM-WSA for review.
	For all land currently flooded up to the one per cent annual exceedance probability event, no change to peak flood levels up to the following limits, unless otherwise agreed with the affected property owner:	No	Not Applicable	Not applicable

Environmental Performance Objective Topic	Environmental Performance Objective	Triggered in Staging Report	Target	Management Measure
	• residential, commercial, critical infrastructure – no new above floor flooding, maximum change of 10 millimetres for existing flooded buildings and maximum of 50 millimetres for properties where flooding is below floor level • roads – maximum change of 50 millimetres • Crown land open space, farming, grazing and cropping land – maximum change of 200 millimetres			
	Where flood water velocities are currently below one metre per second (m/s), the project is designed and operated to ensure they remain below one metre per second. Where velocities are above one m/s, an increase of no more than 20 per cent is permitted	No	Not Applicable	Not Applicable
	No change to flood hazard vulnerability classification limits for residential and commercial buildings or roads	Yes	Construction is undertaken in a manner that minimises the potential for adverse flooding impacts, the implementation of mitigation measures. Construction compounds and work sites are laid out such that flows are not significantly impeded. The project avoids long term impacts to surface water	Progressive erosion and sediment control plans to be implemented with appropriate controls for the level of risk
	No change to flood hazard vulnerability classification limits for all land types as a result of the location of the permanent spoil placement areas at Western Sydney International	No	Not Applicable	Not Applicable
	No change to the one per cent annual exceedance probability duration of inundation up to the following limits: • residential, commercial, critical infrastructure – no increase for above floor flooding • roads	No	Not Applicable	Not applicable

Environmental Performance Objective Topic	Environmental Performance Objective	Triggered in Staging Report	Target	Management Measure
	– maximum change of 10 per cent increase in duration • agricultural land for cropping – dependant on cropping type			
	For moderate and high fragility watercourses impacted by the project (as defined by the NSW River Styles mapping (NSW, Department of Planning, Industry and Environment 2019)), maintain existing flow regimes and velocities as best as possible to preserve and minimise changes to the watercourses	No	Not Applicable	Not Applicable
	Critical infrastructure (including stations entries and tunnel portals) to have immunity against the probable maximum flood event	Yes	Construction is undertaken in a manner that minimises the potential for adverse flooding impacts.	Progressive erosion and sediment control plans to be implemented with appropriate controls for the level of risk. Station entrance is above the probable maximum flood event line and considered in Climate Risk Assessment during the design phase.
Long term impacts on surface water and groundwater hydrology (including drawdown, flow rates and volumes) are minimised	Groundwater availability and quality for water supply and environmental benefit (e.g., groundwater dependent ecosystems) is not affected beyond the requirements outlined in the NSW Aquifer Interference Policy	Yes	Construction is undertaken in a manner that minimises impact to the groundwater availability, Water Quality and Groundwater dependent ecosystems.	Surface and groundwater management will be undertaken throughout the delivery of the Project in accordance with the mitigation measures. The project avoids long term impact to the ground water.
	Structural damage to buildings, heritage items and public utilities and infrastructure, including the Warragamba to Prospect Water Supply Pipelines, from ground movement to be avoided	Yes	Construction is undertaken in a manner that minimises the potential for adverse impacts to the buildings, heritage items and public utilities.	Management of Public utilities, heritage items and infrastructures would be carried out throughout the delivery of the project in accordance with the mitigation measures listed in the ERAPs.
The environmental values of land, including soils, subsoils and landforms, are protected Risks arising from the disturbance and	Contamination risks to human health and ecological receivers are minimised through effective management of existing contaminated land	Yes	Any unexpected, contaminated finds would be managed in accordance with the SM Unexpected Finds Procedure and WHS guidelines.	Management of soil and surface water will be undertaken throughout the delivery of the Project in accordance with the mitigation measures.

Environmental Performance Objective Topic	Environmental Performance Objective	Triggered in Staging Report	Target	Management Measure
excavation of land and disposal of soil are minimised, including disturbance to acid sulfate soils and site contamination	Contaminated land and soil within the footprint of the project is remediated where required, to ensure the land is suitable for the intended future land use	Yes	Any soil waste is assessed, classified, managed and disposed of in accordance with the Waste Classification Guidelines (EPA, 2014)	
The project reduces the NSW Government's operating costs and ensures the effective and efficient use of resources Conservation of natural resources is maximised	The project achieves a minimum 'Design' and 'As built' rating score of Leading +75, using the Infrastructure Sustainability Council of Australia Infrastructure Sustainability Rating Scheme Version 1.2 or equivalent	Yes	As per TfNSW TSR, TfNSW SDGs will be implemented for this scale of project. As per the submission report ISCA is not required during the construction phase.	Sustainability initiatives will be incorporated in the design and construction of the project through the Sustainability Management Plan.
	Sustainability initiatives are incorporated into the planning, design and construction of the project	Yes		
	100 per cent of the greenhouse gas emissions associated with consumption of electricity during operation are offset	No		
	25 per cent of the greenhouse gas emissions associated with consumption of electricity during construction are offset	Yes		
The project is designed, constructed and operated to be resilient to the future impacts of climate change	The project is designed to withstand known impacts associated with climate change to year 2100	Yes	Climate change considerations will be incorporated in the design and construction.	Climate change workshops to be undertaken as SDG requirement. Design reports to include mitigation measures for construction and operation phases.
Conservation of natural resources is maximised	100 per cent of useable spoil is reused in accordance with the spoil reuse hierarchy	Yes	SDG and contractual requirement to achieve 100% beneficial reuse.	Spoil is to be reused dependant on waste classification undertaken and transported to approved reuse facilities / locations.
	A minimum 95 percent recycling target is achieved for construction and demolition waste	Yes	SDG requirements to achieve 94% beneficial reuse for Silver Target, and 95% requirement under LORAC contract.	Waste reuse opportunities in the project will be investigated and Off-site recycling options will be utilised.
	Products from recycled content are prioritised	Yes		
	The use of potable water for non-potable purposes is avoided if non-potable water is available	Yes	5% Use of Non-potable water for construction as per SDG Requirement.	Non-potable water is to be utilised where practicable on site
	The reuse of water is maximised, either on-site or off-site	Yes		

Environmental Performance Objective Topic	Environmental Performance Objective	Triggered in Staging Report	Target	Management Measure
Cumulative Impacts	Cumulative impacts are managed through coordination of construction activities and communication processes with nearby projects (Western Sydney International, M12 Motorway, The Northern Road, St Marys Intermodal and St Marys Commuter Car Park Expansion)	Yes	Cumulative impacts to be managed with coordination with the nearby projects.	Community Liaison Group will manage the cumulative impacts arising from the project.

8.0 References, Standards, Codes and Regulations

The works will be undertaken in accordance with relevant standards, codes, acts and regulations. For a register of legislative instruments applicable to the works, refer to Attachment E to this plan. Access to the latest Australian standards will be available via Laing O'Rourke's intranet.

9.0 Legal and Compliance Obligations

This section summarises mandatory compliance obligations and requirements relevant to the works and HSEMS outlines the process, Laing O'Rourke will use to determine legal and other mandatory requirements. All personnel associated with the Project will comply with all relevant requirements, including:

- Laws – acts, regulations and policies
- SSI approval and MCoAs
- Staging Report
- Revised Environmental Mitigation Measures (REMMs)
- Relevant industry standards and codes
- Contract requirements
- Sydney Metro – Western Sydney Airport Construction Environmental Management Framework (CEMF)
- Other compliance obligations outlined in this plan, including any voluntary compliance obligations. (See Attachment E for full list of relevant legislation)

For an assessment of the relevant legislative instruments, refer to Attachment E to this plan. Licences, permits and approvals are outlined in the permits and approvals register in Attachment H. The register must be finalised prior to the commencement of works to outline the full scope of required authority approvals.

The requirements associated with the register will be monitored and reviewed where there has been a change to relevant legislation.

Compliance conditions relating to items listed on the permits and approvals register are incorporated into this plan. Specific details and controls are included in Environmental Risk Action Plans (ERAPs) available in Attachment F. Copies of relevant permits, licences and development consents will be kept as controlled documents in Laing O'Rourke's document management system.

Any guidelines, protocols, standards or policies that are referenced in the terms of the approvals have been incorporated into Laing O'Rourke's operational controls include, but are not limited to:

- Sydney Metro - WSA Out of Hours Protocol
- Sydney Metro Unexpected Heritage Finds and Human Remains Procedure
- Laing O'Rourke Unexpected Contamination Finds Procedure
- Sydney Metro Exhumation Management Plan
- Acid Sulfate Soil Manual (Acid Sulfate Soil Management Advisory Committee, 1998)

- Storage and Handling of Dangerous Goods Code of Practice (WorkCover NSW, 2005)
- Sydney Metro - Construction Noise & Vibration Strategy
- Assessing Vibration: A Technical guideline (DEC, 2006)
- Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom 2004)- Blue Book
- Waste Classification Guidelines EPA (2014)
- NSW: Acid Sulphate Soils Manual (EPA 1998)
- Photographic Recording of Heritage Items using Film or Digital Capture (NSW Heritage Office, 2006)
- How to prepare Archival Records of Heritage Items (NSW Heritage Office, 1998)
- ASINZS 4282:2019 Control of the obtrusive effects of outdoor lighting, relevant Australian Standard
- ASINZS 1158 – Lighting for Roads and Public Spaces
- Contaminated Land Guidelines (EPA, 2020)
- BS 7385 Part 2-1993 “Evaluation and measurement for vibration in buildings Part 2” as they are “applicable to Australian conditions”
- ISO 14001 Environmental Standard Guidelines
- Australian and New Zealand Guidelines for Fresh and Marine Water Quality
- Heritage Technical Note: Fixing methods at Heritage Site (2017)
- NSW Environment Protection Authority (EPA) Assessing Vibration: A Technical Guideline (DEC, 2006) (for human exposure)
- German Institute for Standardisation – DIN 4150 (2015) Part 3 (DIN4150:3) – Structural Vibration - Effects of Vibration on Structures.
- Australian Standard AS 2187.2 – 2006 “Explosives Storage and Use – Use of Explosives”
- Standards Australia AS 2436–2010 (AS2436) – Guide to Noise and Vibration Control on Construction, Demolition and Maintenance Sites
- Standards Australia AS1055–2018 (AS1055) – Description and Measurement of Environmental Noise

9.1 Project Approval

The SM AEW Footbridge St Marys project is assessed and approved under a Critical Significant State Infrastructure Approval (10051). The approval includes specific planning conditions and commitments that must be addressed in this plan and delivered throughout the works. Prior to the commencement of the project, an Environmental Impact Statement (EIS) was completed to assess impact to the community and environment in relation to the works for the Sydney Metro - Western Sydney Airport Project. Prior to the commencement of works, the construction footprint, including any temporary works and changes in scope, will be reviewed to ensure it remains within the approved boundaries. Any works outside of the approved boundary will be subject to

further assessment. Where the requirement of an additional environmental assessment is identified, this will be undertaken prior to the undertaking of construction activities in accordance with the Sydney Metro – Western Sydney Airport Construction Environmental Management Framework (CEMF) requirements for additional environmental assessments.

Project boundary changes may arise from design change requests, changes to methodology, altered access requirements, or the inclusion of additional work scope. Work outside the approved project boundary generally has not been assessed for environmental impacts and any associated impacts and is therefore not approved. A change to the approved project boundary is a Laing O'Rourke HSEMS hold point, Primary Standard and must be formally released through the agreed project-specific processes before use of the additional area. Prior to implementing a project boundary change, the Project Leader must approve the change. Project Leader approval is required prior to contacting TfNSW.

The process for the documentation of the approved project boundary and a process for modification or change to the approved project boundary is outlined below.

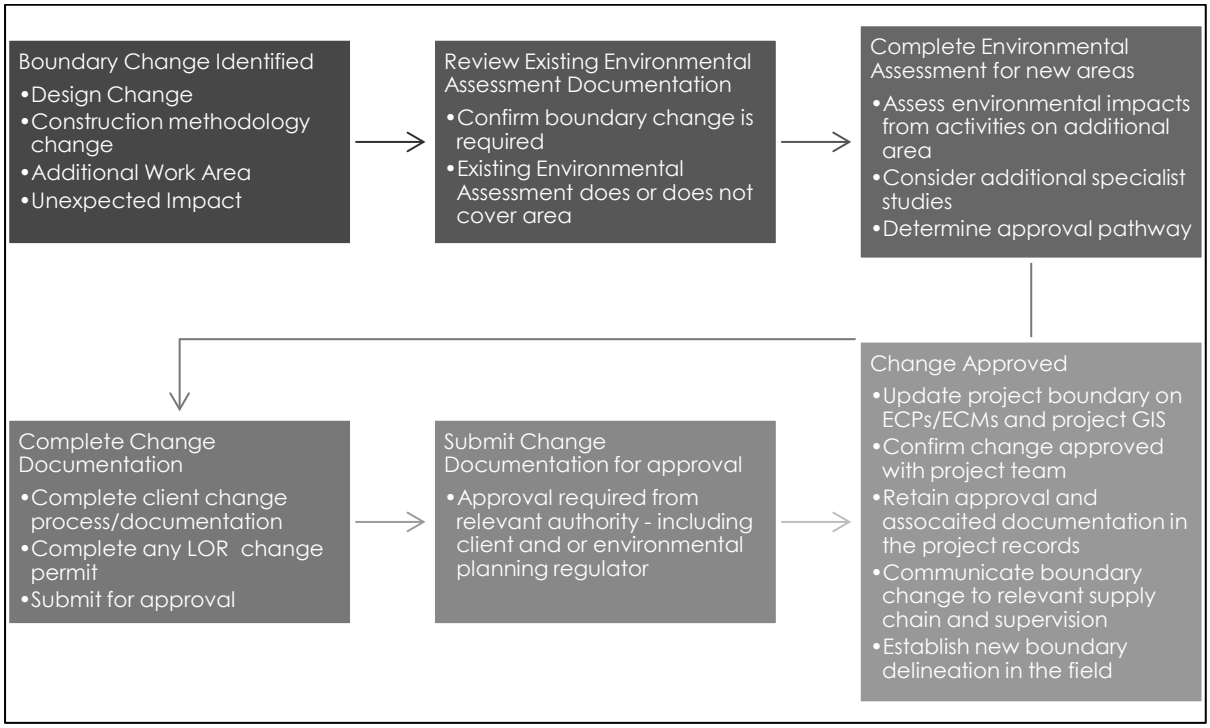


Figure 9 Process for modification or change to the approved project boundary

Should a change be required to the project boundary timeframes for the assessment, review and approval of the approved project boundary need to be considered. Likely timeframes are as follows:





Note: timelines above are indicative. Major approvals have been known to take longer than the advertised timeline above.

A Conditions of Approval Compliance Tracking Matrix (see Attachment P) will be established upon commencement to ensure the approval conditions are captured, addressed and closed out. The matrix includes all conditions relevant to the scope of work. The matrix will be updated as the works progress and reviewed as necessary to verify compliance with each condition. Specific conditions of approval relevant to construction activities are included in the ERAPs in Attachment F. Non-compliances with the conditions will be documented and addressed through INTELEX, Laing O'Rourke's health, safety and environment incident management system.

The project is carried out in accordance with all procedures, commitments, preventative actions, performance criteria and mitigation measures set out in the approval documents. In the event of any inconsistency between the conditions of approval and approval documents, the conditions of approval will prevail to the extent of inconsistency. Where changes to the design, construction methodology or other refinements to the project are proposed, consideration is required as to whether the proposed changes are consistent with the project approval. Changes to approved projects will be managed in accordance with the relevant planning approval proponent and determining authority processes. Where pre-construction or minor works are proposed, details of such works will be addressed through the relevant planning approval proponent and determining authority processes. Laing O'Rourke will comply with all requirements or directions of the planning authorities in relation to any notification, documentation, audit, additional monitoring or mitigation measures or any compliance under the terms of the approval. Any documents that must be submitted to the planning authorities under the conditions of the approval will be submitted within a timeframe or within a later timeframe agreed with the planning authorities.

9.2 Planning Assessments and Approvals

The various planning assessments and approvals pertaining to the SM AEW Footbridge St Marys project is given below:

- Environmental Impact Statement (EIS) - dated 21 October 2020
- Submissions Report - Submitted April 2021

- CSSI (10051) Approval - Determined by Department of Planning, Industry and Environment
- Staging Report
- Revised Environmental Mitigation Measures (REMMs)
- Construction Environmental Management Framework (CEMF)
- Archaeological Design Report (ADR)

The requirements relevant to this CEMP are included in the Attachment P of this plan. A cross reference is also included to indicate where the conditions are addressed within this Plan or other Project management documents. As per SM AEW Staging Report, Laing O'Rourke will submit any strategies, plans or programs required by this approval on a progressive basis, within each stage of the CSSI.

9.3 Environment Protection Licence

Should it be determined that the initial project or subsequent projects or activities require an EPL in accordance with the *Protection of the Environment Operations Act 1997* (NSW) (POEO Act) Schedule 1, Laing O'Rourke will apply for and secure the required project/location specific Environment Protection Licence.

Additional conditions, obligations and mitigation measures will be included in this Construction Environmental Management Plan and associated documents as necessary.

No EPL is required for the Footbridge St Marys scope.

9.4 Review

A Conditions of Approval Compliance Matrix will be consistently tracked, analysed and updated as the work progresses and reviewed on a six monthly basis in conjunction with the independent audit. The conditions of Approval Compliance Matrix will be provided to Sydney Metro and the ER upon request to verify compliance with each condition. Specific conditions of approval relevant to construction activities are included in the operational controls in the aspect specific ERAPs. Non-compliances will be documented and addressed internally via INTELEX in addition to being reported to Sydney Metro.

10.0 Environmental Risk Assessment and Control

Laing O'Rourke has established an Environmental Aspects and Impacts Register in accordance with the system requirements of our Environmental Management System. The register outlines the environmental aspects that must be assessed and effectively managed to meet the environmental obligations of the works.

The environmental risk and opportunity system requirement outlines the process by which environmental aspects and impacts are assessed. Project-wide environmental risks and opportunities are assessed in the overall Risk Assessment and Impacts Register (Attachment I). This assessment must consider at a minimum:

- Obligations and requirements associated with the environmental approval conditions
- Emissions and releases to air, water and land
- Waste management
- Contamination

- Emission of noise, including vibration
- Impact on the natural environment, including wildlife, biodiversity and cultural heritage
- Resource efficiency and the use of materials
- Consumption of energy.

The assessment for significant environmental aspects is based on the risk and opportunity assessment matrix in the Risk and Opportunity Register. Project risk and opportunity assessments are to be reviewed and updated as the works progress and at a minimum as part of the management review of this plan. The Risk and Opportunity Register is to be maintained monthly or as required and must include project-wide environmental risks and opportunities. Table 6 sets out the definitions that will apply to our environmental risk and opportunity assessment process and the associated matrix.

Table 6: Red, amber and green risk matrix

Risk	Details
Green	Environmental impacts associated with the action are generally constrained to the site and accord with the environmental assessment documentation. There is a low probability of occurrence.
Amber	Environmental impacts associated with the action have potential to result in offsite impacts, where the environment recovers over the medium term. There is reasonable probability that the impact will occur in the absence of suitable controls.
Red	Environmental impacts with significant offsite impacts. The environment recovers over the long term, and there are impacts on the local community. There is a high probability that the impact will occur. Environmental impacts occurring offsite are considered major. Impacts have resulted in the destruction of protected species, sensitive habits or other impacts not envisaged as part of the environmental assessment process. The environment is not able to recover without substantial intervention.

ERAPs or environmental issue–specific sub-plans will be developed for aspects or impacts representing an amber or red risk after the initial risk assessment. The ERAP or sub-plan will reference and address the strategic mitigation and control measures determined following the initial risk assessment and as outlined in the relevant environmental primary standards.

In addition, an ERAP is required to be developed and implemented where an environmental obligation, environmental mitigation requirement or legal requirement dictates issue-specific controls are required despite a low risk to the environment. Activities, aspects and potential impacts considered to represent an extreme risk following the application of the strategic mitigation and control measures must be redesigned or re-sequenced or be approved by the General Manager or delegate. If additional risks are encountered on site during delivery, these will be addressed either by updating this plan or by using separate ERAPs.

Laing O'Rourke is committed to be consistent with the Sydney Metro – Western Sydney Airport Sustainability Plan and the Sydney Metro Environment and Sustainability Statement of Commitment (CEMF 3.1b vi), with all subcontractors to work under LORAC's EMS (CEMF 3.1c).

10.1 Climate Related Risk and Opportunities

Climate related risks and opportunities are considered throughout Laing O'Rourke's business systems and the HSEMS. This includes but is not limited to:

- Laing O'Rourke's Sustainability Strategy
- Project Execution Plan
- Design Management Plan
- Carbon data capture and greenhouse gas reporting and disclosures

As it relates to the Laing O'Rourke HSEMS, climate related risks are considered in the Business's Environmental Aspects and Impacts register. Physical risks related to weather events are addressed through the risk and opportunity register, project specific aspects and impacts register, the operational control measures within this CEMP. Specifically, weather related mitigation processes are considered in the following:

- Operational controls and mitigation measures contained in the ERAPs and issue specific subplans
- Section 13.0 Emergency Preparedness and Response and Attachment J Emergency Preparedness and Response
- Trigger Action Response Plans

Climate related risks are considered throughout the project life cycle. Climate related objectives and targets are included in the business's Sustainability Strategy and the project's Sustainability Management Plan.

10.2 Severe Environmental Risk Controls

The Severe Environmental Risks (SERs) Controls Standard describes the various minimum mandatory requirements which must be in place, demonstrated and working effectively to manage severe environmental harm risks on the works as part of the HSEMS. Attachment G to this plan outlines severe environmental risks relevant to the works.

SERs relate to environmental harm caused by site operations which can result in long-term damage to the environment. The focus of these risks is on high-consequence environmental harm risks rather than regulatory exposure. The SERs Control Standard provides clear guidance on the required controls and expectations relating to preventing high-consequence environmental impact. The implementation and verification of the SERs Control Standard is in addition to the environmental inspection regime for the project. Additional SER controls are included as necessary to address site-specific conditions. Table 7 lists the SERs on the works as determined by the risk assessment.

Table 7: Applicable SERs

Standard SERs	Project relevant SERs
Air Quality and Dust	Air Quality and Dust

Standard SERs	Project relevant SERs
Biodiversity	Biodiversity
Biosecurity	Contamination Management
Contamination Management	Cultural and European Heritage
Cultural and European Heritage	Erosion and Sediment Control
Dangerous Goods Chemical Management	Noise and Vibration
Erosion and Sediment Control	Spoil and Waste Management
Ground Dewatering	
Groundwater Management	
Noise and Vibration	
Spoil and Waste Management	
Surface Water Management	
Temporary Waterway Structures	

- The required elements for the successful completion of the monthly SER activities are:30/60/90 monthly workshop conducted with the project team. The engineers present up coming scopes of work. The works are discussed with the environmental team and assigned a risk rating. High risk activities and some medium risk activities may trigger a SER assessment to be conducted to ensure that the required critical controls are in place and working effectively.
- Monthly checks of field and system criteria in INTELEX or on the Severe Environmental Risk Assessment Tool
- Review of system-based controls for application and effectiveness within the bounds of this plan
- Monitoring activity frequency dependent on the programming of activities with the potential to cause high-consequence environmental impact and reflecting the current construction risk processes and methodologies. This will be defined in the 30/60/90 Day risk review process.
- Deeming of risks as managed and controlled when all aspects of the performance criteria are working effectively in all areas where the risk applies
- Designation of the absence of critical controls as a 'no go' and raising of actions to address no-go in the action-tracking system of INTELEX
- Monthly completion of the SER assessment and monitoring of SER outcomes during project reviews and captured in the INTELEX 30/60/90 forms.

The Severe Environmental Risks Assessment Tool is to be used as guidance for the implementation of the standard. The Severe Environmental Risks Control Adequacy Assessment Work Instruction defines the procedural requirements for completing the monitoring activities.

10.3 Hazard Identification and Risk Assessment Requirements

Laing O'Rourke will ensure that environmental hazards are identified, assessed, analysed and ranked using consistent methodologies. Hazard identification tools, Job hazard analysis (JHAs), Safe Work Method Statements (SWMS) and Job safety environmental analysis (JSEAs), must be used to identify and assess environmental hazards and controls before, and during the execution of activities on the works.

Risk assessments must incorporate an adequate consultation process involving key stakeholders and all relevant parties for comment. Environmental risks must be managed to as low as reasonably practicable. The selection of controls must be aligned to the greatest practical extent to the hierarchy of controls.

Environmental risks must be updated at least annually, based on the nature of risk. Risk and controls must be reviewed following a significant event or when change occurs to capture lessons learned.

10.3.1 Planning for high–environmental risk activities

Worksite planning processes for high–environmental risk activities are outlined in the environmental planning system requirement of the Environmental Management System. Details of specific activities considered high-risk are provided in the system requirement. Additional activities may be identified in the environmental risk assessment.

For all activities with the potential to cause high-risk environmental impacts or which are nominated as high-risk activities by the environmental risk assessment, activity-specific method statements are to be developed and implemented.

The activity-specific method statement to address environmental–high risk activities may be combined with existing construction planning documentation. It is to be developed in consultation with the environmental team, engineering team and relevant workplace supervisors.

Prior to the commencement of the activity, the site team will be instructed on the key environmental risks and the required mitigation measures provided in the activity-specific work method statement to address high-risk activities. This also applies to supply chain partners operating on site. Supply chain partners involved in activities that represent a high risk to the environment are to address the requirements in their activity methodologies and method statements. Supply chain partners involved in these activities are to complete an environmental risk assessment workshop prior to the commencement of the activity.

10.3.2 30/60/90 Day Environmental Risk Review

The Laing O'Rourke 30/60/90 Day Environmental Risk Review Process has been developed to outline the approach for project level cyclical risk forecasting and management. The intent is to assess the environmental risks associated with activities over the full project lifecycle. The wider project team is to be involved such that environmental risks may be collectively managed. Wherever possible, meetings and collaboration activities to discuss environmental risks will be coordinated with other disciplines and their respective approach to risk forecasting and management.

The performance of the risk mitigation measures over the preceding 30 days should also be considered.

The steps associated with the strategy and approach for the 30/60 /90 day risk review are outlined below.

Contract program (i.e. P6 contractual program) is reviewed each month for environmentally high risk activities and or those that trigger the Severe Environmental Risk (SERs) protocols.

Update the project environmental risk assessment as necessary should previously unidentified risks, aspects or impacts be identified.

Consider the environmentally high-risk activities and identify proactive management measures and site assurance activities that are to be planned and completed to effectively mitigate the risk of the identified activities. Management measures would include additional training, toolbox talks, SER system review activities, development of activity specific method statements, reviews of SWMSs. Assurance activities may include SERs (system and field), additional site inspections, construction process audits

Identify high-risk environmental deliverables or submissions from the contract documents, licences and or environmental planning conditions. Develop plans to complete these deliverables accordingly, engaging other team members as necessary.

Update 30/60/90 day risk review form in INTELEX with planned activities, proactive measures and potential site assurance activities.

Include site assurance activities and SERs in the Project's HSE Activity Schedule. Ensure tasks are assigned to relevant members of the wider project team.

Site assurance activities should be completed / documented in INTELEX.

Review the effectiveness of the proactive management measures and assurance activities and their completion in terms of planned v actual.

Further details are provided in the Laing O'Rourke Environmental System Requirement Risk and Opportunity.

11.0 Training, Awareness and Competence

11.1 Induction

Requirements for environmental training, awareness and competence are outlined in the onboarding, training, induction and verification of competency (VOC) system requirement and this plan. All employees will receive suitable environmental induction and training to instil awareness of their responsibilities and ensure their competence to carry out the works. Environmental requirements will be explained to employees during site induction and ongoing toolbox meeting, briefing, notification and other training. Environmental content will also be included in toolbox talks

and pre-start briefings, with all training and toolbox meetings to be recorded. The three main forms of training will be primarily provided on site by the Environmental Manager, Environmental Advisor and the Safety Manager includes:

- Site Induction including roles and responsibilities
- 'Toolbox' Training, and
- Environmental Awareness training

Site Inductions will include the following:

- The purpose and objectives of the CEMP
- Contractor's environmental and sustainability policy (s) and key performance indicators
- Requirements of due diligence and duty of care
- Approval / licence conditions
- Site specific issues and controls including those described in the environmental procedures
- Potential environmental emergencies on the site and emergency response procedures (including locations and training in the use of spill kits)
- Reporting, notification and management requirements
- Communication protocols for interactions with community and stakeholders
- High risk issues and sensitive areas, including traffic impacts, noise and vibration impacts
- Site specific issues including the following:
    - Overview of the Environmental Control Maps (ECMs), including the key environmental constrains and control measures
    - Access requirements
    - Transport to and from site and parking
    - Flora and fauna management
    - Noise and vibration
    - Air quality
    - Weed management
    - Sediment and erosion management
    - Waste Management
    - Concrete management
    - Heritage management
    - Incident response and reporting
    - Unexpected finds

Additional specific targeted training workshops may be held on a case-by-case basis and will identify any sensitive receivers, cover all relevant environmental issues/risks identified within the Project's environmental risk assessment to minimise potential environmental impacts (for e.g. noise, vibration and heritage) and provide direction on the proper implementation and maintenance of environmental controls etc. These workshops (if required) will include representatives from Laing O'Rourke project team and relevant sub-contractors. These workshops will be coordinated by the Laing O'Rourke Environmental Manager / Advisor.

The Environmental Manager / Advisor may authorise amendments to the induction at any time. Amendments may be required due to project modifications, legislative changes or amendments to this CEMP or related documentation.

11.2 Environmental Training Requirements

A training needs analysis has been undertaken which identifies the competency requirements of staff that hold environmental roles and responsibilities as outlined in Table 8.

The Training Needs Analysis considered the following:

- Identifies that all staff are to receive an environmental training
- Identifies the competency requirements of staff that hold environmental roles and responsibilities documented within the Construction Environmental Management Plan and sub-plans
- Identifies appropriate training courses/events and the frequency of training to achieve and/or maintain these competency requirements
- Implements and documents as part of the CEMP a training schedule that plans attendance at environmental training events, provides mechanisms to notify staff of their training requirements, and identifies staff who do not attend scheduled training events or who have overdue training requirements

Table 8: Environmental training, awareness and competency requirements

Training	PM	Site Supervisor	Engineers	Env. Manager / Advisor	Community staff	Labour and sub contractors
Project Induction	✓	✓	✓	✓	✓	✓
Site Induction	✓	✓	✓	✓	✓	✓
Environmental Control Maps and ErSed controls	✓	✓	✓	✓		✓
Emergency response, reporting and incident response	✓	✓	✓	✓		✓
Heritage Awareness	✓	✓	✓	✓		✓
Community and stakeholder awareness	✓	✓	✓	✓	✓	✓

Records of induction and training will be kept on a database including the training carried out, dates, names and trainer details. Inductees will be required to sign-off that they have been informed of the environmental issues and that they understand their responsibilities.

11.3 Environmental Awareness and Toolbox Talks

Environmental awareness training will be provided within the project induction and to individuals or groups of workers with a specific authority or responsibility for environmental management or those undertaking an activity with a high risk or environmental impact.

Laing O'Rourke will conduct environmental awareness training before commencing construction and when new personnel commence work on the Construction Site as part of the Contractor's Site Induction. LORAC will undertake refresher environmental awareness training as required, based on environmental risk assessment and turnover of project personnel.

To promote environmental awareness amongst the construction team, environmental toolboxes will be implemented. The Environmental Manager / Advisor will also review and approve the training program and monitor implementation as required.

Toolbox talks will be one method of raising awareness and educating personnel on issues related to all aspects of construction including environmental issues. The toolbox talks are used to ensure environmental awareness continues throughout construction. Prior to commencing works in a new area of the site or activity, a toolbox include but not limited to:

- A description of the activity and the area;
- Identification of the environmental issues and risks for the area (including heritage);
- Outline the mitigations measures for the works and the area;

Toolbox talks will also be tailored to specific environmental issues relevant to upcoming works. Relevant environmental issues may include (but are not limited to);

- Noise and Vibration Management;
- Emergency and spill response;
- Unexpected finds, including potential contamination;
- Erosion and sedimentation control;
- Heritage management.

Environmental awareness training and Toolbox Talks will be provided to individuals or groups of workers with a specific authority or responsibility for environmental management or those undertaking an activity with a high risk of environmental impact. Topics covered may include those detailed above, or others deemed necessary during construction.

12.0 Construction Controls

Activities and business processes with the potential to significantly affect our environmental performance must be identified, planned, and documented, and control measures must be implemented to ensure Laing O'Rourke's policy, objectives and compliance obligations are met.

Within the Environmental Management System, Environmental Primary Standards provide the operational controls necessary to meet compliance obligations. These standards have been developed from aspects, impacts and compliance obligations of the works. Additional LORAC and site-specific operational controls have been identified and included in the ERAPs and issue-specific plans. Collectively, these provide the framework for eliminating or minimising the risk of environmental harm, as well as creating opportunity for innovation and enhancing environmental benefits.

Specific Construction controls to manage environmental issues are defined in:

- Environmental Risk Action Procedures (ERAPs);

- SWMS, Environmental Work Method Statements (EWMS), JSEAs, hazard identification, construction risk assessment workshops (CRAWs), ITPs and check sheets (as appropriate);
- Work instructions (e.g. refuelling and servicing, exclusion zones on ECM).

Significant environmental issues identified in the risk assessment and impacts register in Attachment I to this plan will be controlled with ERAPs and issue-specific sub-plans as required.

Additional controls and criteria identified from compliance obligations (such as conditions of approval, environmental mitigation measures and contract requirements) will be established and maintained where the absence of such could result in failure to meet our environmental policy, objectives and targets.

12.1 Hold Points

Table 9 outlines activities which are not to proceed without objective review and approval by the nominated authority. These activities below are considered hold points and will be incorporated into the working plans for the works such as SWMS, work instructions, and construction methodologies. Proceeding past a specified hold point without authorisation represents a system non-compliance.

Table 9: Environmental hold points

Item	Hold Points	Acceptance criteria	Released by
Notification	Commencement of construction of FSM	The DPHI, Liverpool City Council and Penrith City Council must be notified in writing at least seven (7) days before the commencement of each stage, of the date of the commencement of that stage.	Sydney Metro
Construction Environmental Management Plan	Construction activities (where other appropriate environmental management documents are not in place)	Site-specific Environmental Management Plan developed, reviewed, approved and endorsed by the ER	ER Endorsement Environmental Representative
Dewatering	Dewatering or pumping water	Water discharge criteria in consultation with EPA prior to this being permitted (in accordance with CoA - E130). Discharging to ballast only and not to stormwater will be carried out under this CEMP. Water pollution study to be undertaken if the need to discharge to stormwater becomes a requirement. Verification that water quality criteria have been met. Water tested to verify compliance and approval to discharge. Full details	Environmental Manager or Delegate

Item	Hold Points	Acceptance criteria	Released by
		of the Water Discharge and Reuse process can be found in Attachment Q.	
Out of hours work	Works to be carried out outside the standard hours	Noise Assessment, Out of Hours Permit, Out of Hours Works Protocol, Community Notification, DNVIS Approval as per CNVS (v4.3)	Sydney Metro & Environmental Representative Endorsement and Approval
Sediment and erosion control measures	Construction activities involving ground disturbance	Sediment and Erosion Control Plans developed, reviewed, approved and implemented	Environmental Manager
Vegetation removal	Vegetation removal within the construction boundary	Clearing limits verified against the Project Approval environmental assessment, limits set out.	Environmental Manager, Qualified Ecologist/Arborist
		Pre-clearing surveys and inspections for endangered and threatened flora and fauna species to be undertaken	
		Trained ecologist to be present during the clearing of native vegetation or removal of potential fauna habitat where required	
Traffic Management	Construction activities involving traffic management Signage	CTMP developed and approved as per the CTMF and provided to DPHI as per CoA E103 prior to construction commencing Wayfinding signage and project signage as per CoA A47	Project Manager, Construction Manager, SM WSA, DPHI
Use of local roads	Local roads usage by Heavy vehicles	Road Dilapidation report must be provided to the Relevant Road Authority(s) within three (3) weeks of completion of the survey and at no later than one (1) month before the road being used by Heavy Vehicles associated with the construction of the CSSI. The HVLR to be approved by DPHI if the local roads not identified in the documents listed under condition A1 as per CoA E105 and E107	Local Council, TTLG, DPHI
Buildings	Construction identified as affecting buildings	Building Condition Survey as per CoA E84. Copies of Pre-construction Condition Survey	Nominated Appropriate professional

Item	Hold Points	Acceptance criteria	Released by
		Reports must be provided to the relevant owners of the items surveyed in the vicinity of the proposed work, and no later than one (1) month before the commencement of the work that could impact on the subject surface / subsurface structure.	
Spoil transport	Removal of spoil from site	Verification that the spoil has been classified and the disposal location can lawfully receive the waste Signage on spoil transportation vehicles	Project Manager, Environmental Manager
Heritage	Construction activities involving heritage items	Verification that heritage approval has been sought from the relevant authority prior to commencement as per CoA E19 – E36, REMMs and CEMF requirements	Environmental Manager
Non-Aboriginal Heritage	Unexpected non-indigenous heritage finds	Sydney Metro Unexpected Heritage Finds and Human remains procedure to be followed. Written Consent of the ER.	Environmental Manager
Aboriginal Heritage	Unidentified aboriginal objects of cultural significance discovered	Sydney Metro Unexpected Heritage Finds and Human remains procedure to be followed. Written Consent of the ER	Environmental Manager
Unexpected human remains	Unexpected human remains find	As per the Unexpected Heritage Finds and Human Remains Procedure in Attachment R	Environmental Manager
Unexpected finds	Unexpected chemical and asbestos contamination finds	Inspection of the suspected contaminant by a qualified contaminated lands consultant	Health & Safety Manager
Project Boundary Change	Utilisation of additional areas or storage of material in areas outside the approved project boundary.	Verification that any additional environmental assessment has been completed and has been approved by the relevant authority (e.g. Ancillary Facilities Checklist) and that the boundary change has been communicated to the site team and the supply chain via updated ECMs/ECPs or other suitable measure.	Project Leader Environmental Representative Endorsement and Approval

12.2 Environmental Controls Maps

Environmental Controls Maps (ECMs) will be prepared in accordance with Section 3.6 (c) of the Sydney Metro CEMF, to assist in the planning and delivery of the works. Specific to each site or work area, they outline the location of protection measures, monitoring requirements, conditions of approval and environmentally sensitive areas and represent the practical application of the control measures. ECMs will be progressively reviewed and updated to ensure current works and changing site characteristics are addressed. This includes amending environmental protection measures where those identified do not ensure continuous compliance with environmental and compliance obligations.

ECMs will be approved by suitably qualified Environmental Manager prior to the commencement of the relevant works. The ECM is to be used in inductions, worksite set-up, and reviewing ongoing environmental performance, and is to be included as information in tender documents to subcontractors where applicable and in support of ancillary environmental approvals. The ECMs would be placed on site sheds or other central locations for reference by all project personnel.

All construction personnel and subcontractors undertaking a task governed by an ECM must participate in training on relevant ECMs and acknowledge that they have read and understood their obligations by signing off prior to commencing works on the specific activity. A copy of the LORAC Environmental Control Map for Footbridge St Marys AEW can be found on the project drive and is also displayed on site. ECMs will be updated as required and submitted to the ER for review.

The ECM will generally include:

a. The worksite layout and boundary, including entry and exit points and internal roads and clearing limits;
b. North point, legend, scale, names of roads and landmarks;
c. Location of adjoining land use and nearest noise-sensitive receivers;
d. Location and type of sediment and erosion control measures, including size and capacity of detention basins and wheel-wash facilities;
e. Location of monitoring equipment (e.g. dust, noise, vibration monitors) and frequency of monitoring/inspections;
f. Location of site offices;
g. Location of spill containment and clean-up equipment;
h. Location of worksite waste management facilities;
i. Training and competency requirements of relevant workers;
j. Contact details (including after hours) for key staff (including Environment Manager and Project Manager);
k. Hours of work applicable to the worksite (including deliveries and any restrictions on high noise-generating activities);
l. Construction Response Line number (1800 775 465);
m. TfNSW Project Infoline (1800 684 490);
n. Document control and approval details;

o. Location of environmentally sensitive areas (e.g. threatened species, critical habitat, contaminated areas, or heritage zones);

p. Vegetation and trees to be protected;

q. Location of worker car parking and any parking restrictions;

r. Location of known Indigenous and non-Indigenous heritage items;

s. Location of stormwater drainage and watercourses leading to and from the worksite;

t. Specific environmental management requirements from licences, approvals or permit conditions;

u. Key environmental risk issues and the specific mitigation measures;

v. Contours/elevation points and/or direction of slope/s;

w. Location of concrete washouts.

These maps supplement any erosion and sediment control plans or other documentation that specify the location of environmental controls on site.

12.3 Design

Environmental design requirements are to be managed in accordance with the Environmental Design System Requirement provided in the HSEMS. As Laing O'Rourke is responsible for the completion of design activities and design risk and compliance obligations, these are to be included in the environmental risk assessment and the risk and opportunity assessment. The following environmental issues will be considered during the design phase:

a. How to minimise any adverse impacts on the environment, including energy-efficient operation and incorporation of sustainable or recycled materials;

b. How to improve design efficiency to conserve natural resources;

c. Addressing the requirements of our sustainability agenda;

d. Meeting or exceeding the environmental sustainability requirements of the contract;

e. How to meet environmental codes, regulations and other requirements;

f. Conditions of approval and development consent requirements;

g. Mitigation measures outlined in the environmental assessments;

h. Contractual environmental design requirements.

These issues should be considered, while taking into account the environmental, economic and social aspects of the works.

Design Execution Plans outline the environmental compliance requirements necessary for the works to meet environmental obligations. In particular, they will describe the specific design approach to minimising the impact of the works on the surrounding ecology, heritage, water, flora, fauna and atmosphere, carbon accounting and design environmental assessments.

Design Execution Plans are also meant to outline the environmental design review process and nominate the environmental resources required to ensure environmental compliance obligations are addressed during the design phase. Environmental compliance obligations are to be reviewed and verified at each design stage.

12.4 Procurement

The supply of goods and services by suppliers and subcontractors will be managed in accordance with our procurement and supply chain system requirements and business processes. In particular:

a. Supply chain partners are to be evaluated for their ability to meet environmental obligations;

b. Environmental issues should be taken into account when selecting subcontractors and suppliers and evaluated using the ITT Part 3 Supply Chain HSES Evaluation;

c. Assessment of suitable contractors where there is the potential for impacts to heritage;

d. Supply, subcontract and consultancy agreements must address the relevant environmental compliance obligations and outline the contractual requirements to be delivered by the supply chain through each scope of works and as outlined in the procurement and supply chain system requirement;

e. Suppliers of chemicals and hazardous substances will be required to submit safety data sheets (SDS) with delivery or prior to chemicals arriving at site;

f. Supply chain partners are to be required to nominate relevant environmental risks and proposed mitigation measures associated with their scope of work within their documentation. As a minimum, subcontractors' SWMS must address the environmental risks associated with their site activities;

g. The environmental performance of subcontractors will be monitored during site inspections and in accordance with the obligations in their agreements and contracts.

12.5 Handling, Storage, Packaging and Transport

The handling, storage, packaging and transport of goods will be controlled in accordance with the procedure outlined in the quality management system. Dangerous goods and hazardous materials will be stored and handled in accordance with SDS and the requirements of the Australian Dangerous Goods Code. All hazardous substances are assessed and approved for use before being brought onto site.

The *Dangerous Goods (Road and Rail Transport) Act 2008* (NSW) includes specific requirements in relation to the transport of dangerous goods. Where dangerous goods are to be transported as a result of the works, the requirements of the Act must be complied with. In particular, regardless of the quantity, appropriate transport documentation must be included with each load unless a specific exemption exists.

Transport documentation must include:

a. Project/workplace name, contact number;

b. Transporter name, contact number;

c. Transport date, origin and destination;

d. Product name, classification, container type, quantity.

These materials will be stored in a safe area (e.g., bunded and/or store) which will prevent or contain accidental spillage and harm to the environment. Further details are provided in the

Delivery and Storage of Chemicals, Fuels and Oils including Dangerous Goods requirements ERAP.

12.6 Manufacture, Construction and Fabrication Processes

Manufacture, construction and fabrication processes will be controlled in accordance with the quality management requirements for monitoring, workmanship, quality inspections and commissioning. Requirements relating to manufacture, construction and fabrication processes may be defined in:

a. Construction methodologies, SWMS and JSEAs;
b. ITPs, Task Complete Checklists and associated documents;
c. Contract documents;
d. Environmental control procedures;
e. Environmental Work Method Statements.

12.7 Plant and Equipment

Primary standard spill prevention includes requirements related to the fuelling and servicing of plant and equipment. Additional specific requirements and controls are included in the issue-specific sub-plans or ERAPs.

All plant and equipment owned associated with the works will be maintained in a safe and serviceable manner. In particular, the following requirements generally apply:

- Plant will be inspected prior to operation on site. Fuel lines, hydraulic hoses or other items with the potential to impact the environment are to be inspected. Items found to be worn, damaged or otherwise degraded are to be replaced prior to operation;
- Plant will be serviced, re-fuelled and washed down only in approved areas where hydrocarbons can be captured and then properly disposed;
- Fuelling will be carried out in bunded areas when fuelling from bulk tanks. If refuelling from mobile bowsers is carried out then it must be undertaken away from, and down gradient from, site boundaries and stormwater drains;
- Plant and equipment will be maintained to prevent or fix oil leaks;
- Plant will be driven and operated only in approved areas;
- Plant will have effective pollution control and sound attenuation devices fitted.

12.8 Construction Operational Controls

The following section provides an outline of the environmental controls to be implemented on the SM WSA AEW Footbridge St Marys Project. They have been developed from Laing O'Rourke's Environmental Primary Standards included in our HSEMS, project specific requirements and TfNSW and Sydney Metro - WSA specific requirements. Additional details and the mitigation measures are provided in the Environmental Risk Action Plans (ERAPs) in Attachment F to this CEMP. Where deemed necessary by the Environmental Manager and as a result of revisions to works scope or changes to project risks, additional ERAPs to control potential impacts will be developed. It is envisaged that additional ERAPs will be required as the programme developed to ensure environmental risks are mitigated.

The ERAPs in this Construction Environmental Management Plan substitutes the issue specific sub-plans, as sub-plans are not a requirement for this project under the Approval Conditions. Based on the residual risk level of the various environmental controls given the Attachment G (AEW risk context and risk assessment) of the Staging report for SSI 10051, the risk action plans for the environmental controls are determined and detailed in the Attachment F – ERAPs of this CEMP.

12.8.1 Noise and Vibration

As per Staging Report (CSSI 10051), Footbridge St Marys works have a potential to cause noise and vibration impacts on the surrounding community without controls due to the proximity of plant and equipment to residential areas, however these will be short-term and discrete pieces of work.

A lack of mitigation measures and management systems in relation to Noise and Vibration management leads to unreasonable impacts on residents and businesses, and structural damage to buildings or heritage items. Standard and project specific mitigation measures in accordance with the MCoAs and REMMs are included in the ERAPs in Attachment F to this plan.

12.8.2 Transport

Construction works may have a potential to cause temporary traffic, transport and parking impacts on the surrounding community without controls due to the requirements for lane closures, use of heavy vehicles, alterations to access and removal of parking.

Traffic will be managed in accordance with a standalone Construction Traffic Management Plan (CTMP) that is consistent with the Sydney Metro Construction Traffic Management Framework (CTMF), the HVLR, and traffic mitigation measures outlined in the SMWSA Submissions Report, Minister's Condition of Approval (MCoA) and REMMs for this project.

12.8.3 Air Quality Monitoring (Dust)

Ground disturbing works and the use of plant and light vehicles could mobilise dust in work areas, and due to the proximity of these works to residential and business receivers it is likely dust impacts would occur if air quality management and appropriate suppression procedures are not adopted. Management measures are contained in the ERAPs in Attachment F to this plan.

12.8.4 Erosion and Sediment Control Measures

FSM works are located within areas identified as being of environmental concern (AEC) as is outlined in the EIS, Chapter 16, Soils and Contamination. Lift shaft and escalator pits will be excavated to a depth of approximately 2.5-3m. Piling works will require excavations to a depth of approximately 18m. Utility works will progressively expose and backfill soil along the routes, limiting the risk of water quality impacts. While soil is exposed, rainfall has the potential to cause sedimentation to enter the into the adjacent stormwater systems.

Temporary water quality impacts may be caused due to spills, erosion and discharge of contaminated water. Construction works may increase quantities of sediment, which must be controlled as much as possible to reduce impacts on current public road surface areas and surface water drains.

A lack of mitigation measures and management systems in relation to soil and water management leads to unexpected pollution events, water quality impacts on adjacent water bodies, and soil erosion. Standard and Project Specific Erosion and sediment control measures

are detailed in Environmental Risk Action Plan in Attachment F, describing measures to prevent sediment laden runoff from the site.

12.8.5 Contamination and Hazardous Materials (within soil)

As per the Staging report (Appendix F - Risk assessment), several areas of contamination have been identified at St Marys within the EIS documents for the CSSI 10051. Works will be undertaken within areas categorised as being areas of environmental concern (AEC) as is shown on the Environmental Control Maps (ECMs), Figure 7. A Sydney Trains facility building, a north-south oriented stair with canopy and a single 33 person lift will be constructed within AEC 1. A temporary site compound will also be established within AEC 1, laydown/stockpile areas will be established partially within AEC 2. No works will occur within AEC 3A or AEC 3B. Potential contaminations sources within each of these AECs include the following:

AEC 1

- Former fuel, oil and chemical storage and use associated with historical wrecker's yard and associated potential workshops;
- Past use of hazardous building materials (impacts to soil);
- Off-site industrial land use including a former bus depot and plastic manufacturing businesses.
- 'Medium' overall risk

AEC 2

- Potential former fuel storage within Sydney Trains Emergency Response Depot;
- Former railway siding activities including historical spills of fuel and oils and stockpiling;
- Imported fill;
- Off-site up-gradient sources of groundwater contamination: former dry cleaners and service station in Phillip Street.
- 'High' overall risk

AEC 3A

- Potential former use of hazardous building materials.
- 'Medium' overall risk

AEC 3B

- Potential chemical storage for back-up generators and air conditioning units and potential use of ACM in plaza building. Historical demolition of former buildings containing hazardous building materials.
- 'Medium' overall risk

As per REMM SCI, for medium and high risk areas of environmental concern, detailed site investigations and/or review of further available information would be undertaken prior to the start of construction in those areas. In situ waste classification will be undertaken to determine the level of contamination in the construction footprint. The preparation of a detailed site investigation (DSI) to delineate potential contamination of St Marys Station beyond the construction footprint is unlikely to be triggered as part of the FSM works.

In accordance with REMM SC2, if a medium or high risk area of environmental concern is reassessed as low risk, the site would be managed in accordance with the Soil and Water Management ERAP in the CEMP. This would typically occur where there is minor, isolated contamination that can be readily remediated through standard construction practices such as excavation and off-site disposal. For areas of environmental concern that remain or change to medium risk, visual inspections and monitoring would be performed during earthworks. If suspected contamination is encountered, the materials would be subject to sampling and analysis to assess management requirements in accordance with statutory guidelines made or endorsed by the NSW Environment Protection Authority statutory guidelines as detailed below.

Excavated material

Spoil generated onsite will be beneficially reused on site, off-site, recycled or disposed of in accordance with the following hierarchical preference criteria:

1. Reuse on-site criteria
    - The material is suitable for the final land use at the placement location in accordance with guidelines made or approved under the *Contaminated Land Management Act 1997* and would not cause pollution under the *Protection of the Environment Operations Act 1997*;
    - The material meets engineering requirements for the placement location.
2. Reuse off-site criteria
    - The material meets Virgin Excavated Natural Material or Excavated Natural Material definition but has potential for reuse and a Resource Recovery Exemption/Resource Recovery Order has been granted;
    - Suitable off-site reuse locations have been identified and have necessary approvals to receive the material.
3. Recycling off-site criteria
    - The material has value for recycling;
    - Suitable off-site reuse locations have been identified and have necessary approvals to receive the material.
4. Disposal off-site criteria
    - The material is classified as General Solid Waste, Restricted Solid Waste, Special Waste or Hazardous Waste;
    - Appropriately licensed waste management facilities have been identified and have necessary approvals to receive the material.

Contaminated and/or excess material which cannot be beneficially reused on-site, will be temporarily stockpiled at the locations shown on the ECMs, covered with geofabric, sampled and will undergo laboratory analysis by a suitably qualified environmental consultant. Contaminated and/or excess material Excess material will then be classified in accordance with the NSW EPA Waste Classification Guidelines (2014).

Medium risks could potentially arise, in unexpected pollution events, water quality impacts on adjacent water bodies and soil erosion in the absence of mitigation measures and management systems in relation to soil and water management. Some work elements may also require

removal of existing infrastructure and trenching or excavation activities that may encounter unexpected finds, such as asbestos-containing materials (ACM), fill or waste material, chemicals and other hazardous materials or contaminated soils. These must be considered when planning works within these areas. Excavations and soils material will be monitored and assessed under the unexpected finds procedure described in section 12.8.11 of this plan. Where required, pre-sampling, surveying and investigation works will be carried out in accordance with current legislative guidelines endorsed by the NSW Environment Protection Authority. If previously unidentified contamination is found within the site, Sydney Metro and/or the Environmental Representative to notify the EPA in accordance with the EPA's Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997 (EPA, 2015).

If in situ waste classification identifies remediation is required to make land suitable for the final intended land use, a Remedial Action Plan will be prepared, or reviewed and approved by suitably qualified consultants. The consultants will be certified under either the Environment Institute of Australia and New Zealand's Certified Environmental Practitioner (Site Contamination) scheme (CEnvP(SC)) or the Soil Science Australia Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) scheme. The Remedial Action Plan would be prepared in accordance with relevant guidelines made or approved by the EPA under section 105 of the *Contaminated Land Management Act 1997* (NSW) and would include measures to remediate the contamination at the site to ensure the site will be suitable for the proposed use when the Remedial Action Plan is implemented.

Before commencing any potential remediation works, a Section B Site Audit Statement(s) would be prepared by an NSW EPA-accredited Site Auditor that certifies that the Remedial Action Plan(s) is/are appropriate and that the site can be made suitable for the proposed use. The Remedial Action Plan(s) would be implemented and any changes to the Remedial Action Plan(s) would be approved in writing by the NSW EPA-accredited Site Auditor. When remedial works have been completed, a Validation Report will be prepared in accordance with Consultants Reporting on Contaminated Land: Contaminated Land Guidelines (EPA, 2020) and relevant guidelines made or approved under section 105 of the *Contaminated Land Management Act 1997* (NSW). After the Validation Report has been prepared, a Section A1 or Section A2 Site Audit Statement (accompanied by an Environmental Management Plan) and its accompanying Site Audit Report, which state that the contaminated land disturbed by the work has been made suitable for the intended land use, will be submitted to the Planning Secretary and Penrith City Council after remediation and before the commencement of operation of the CSSI.

12.8.6 Heritage Management

St Marys Railway Station group is listed on the NSW State Heritage Register (SHR) (#01249), Rail Corps Register and Penrith Local Environmental Plan (LEP) 2010 as having state significance. The Goods Shed heritage element is considered of exceptional significance near the work location. The Footbridge St Marys works lies within in the State heritage curtilage, that imposes high risk to the heritage items associated within the area. However, the work would be undertaken in a manner that does not create an impact to the Goods Shed and the Jib Crane.
A lack of mitigation measures and management systems in relation to Heritage Management leads to poor integration of heritage values in design and impacts on heritage items outside of what has been approved.

Items and locations that have potential heritage value will be managed in accordance with the relevant CoA, and REMMs and could be managed through the Sydney Metro Unexpected Heritage Finds procedure. Heritage Management procedure for the Footbridge St Marys works is given in Attachment R of this CEMP. Archaeological zones around the Goods Shed and no-go zones for intrusive works as per the Archaeological Research Design Report. Additional mitigation measures for built heritage management including input into design development and Non-Aboriginal archaeological management are addressed in sections 4.2 and 4.3 respectively of the Heritage Procedure in Attachment R.

12.8.7 Biodiversity Management

Section 8.9.3 of the EIS Vegetation clearing states : *For the purposes of this Environmental Impact Statement it has been assumed that all vegetation within the construction footprint would be removed. This assumption ensures the assessment of impacts to vegetation is representative of a worst case scenario. However, there may be opportunities to retain some vegetation within parts of the construction footprint and this would be confirmed by the construction contractor(s) when appointed.*

A lack of mitigation measures and management systems in relation to biodiversity management leads to unreasonable impacts to flora and fauna, spread of weeds and pathogens, and unintended vegetation clearance. Standard and project specific mitigation measures for biodiversity management would be undertaken if required. The Footbridge St Marys works would be undertaken in a manner that does not impact the existing large Fig tree next to the jib crane on Station Street.

Vegetation Removal is a Hold Point. Removal or trimming of native vegetation will be carried out with prior approval from SMWSA by completing SMWSA Pre-Clearing inspection for native vegetation removal approval form as per the Flora & Fauna Response Procedure in Appendix L.

The Environmental Risk Action Procedure (ERAP) in Attachment F details the Biodiversity Management measures.

12.8.8 In NSW, native vegetation is defined as any plant species that naturally occurred in the area before European settlement.Bush Fire Management

Few street trees are located in the construction footprint and no risk of bushfire were identified in the Staging report – Appendix F Risk Assessment. Bushfire management plan is not a requirement for this project under the approval conditions.

However, Laing O'Rourke's Environmental Management system identifies few key risk mitigation measures for Bushfire that includes:

- Development of Emergency Response Procedures across the Program for bushfire management;
- Protocols to manage requirements during total fire bans;
- Inclusion of risks and requirements relating to bushfires in the induction;
- Proscription of driving on grass and vegetation to be retained, keeping site vehicles on designated haul roads and site access roads;

- Maintenance of 'good housekeeping' to ensure combustible waste materials are placed in the appropriate bins on site;
- Availability of sufficient onsite firefighting equipment in the form of extinguishers for immediate response and in high-risk areas;
- Availability of onsite dust suppression water carts for additional firefighting should the need arise.

12.8.9 Material Tracking System

A material tracking system (MTS) will be in place and maintained on-site with data and records available by request. Material tracking will be required for all materials which are excavated, re-used or removed from site as part of the construction activities.

All materials brought to site and transported off-site will be recorded quantitatively, quantifiably and spatially. This includes all stockpiling and placement of materials (clean or contaminated) on-site or those being removed off-site.

The minimum details for all incoming materials and excavated soil, in addition to paperwork indicating the environmental condition and positive suitability of any delivered soil, include:

- Details of areas of excavated soil, including location, weed or contamination classification, actual volumes, dimensions, and date removed;
- Details of location where soil or material is stored and where the material has been finally placed, including volumes;
- Details of any treatment or identification undertaken on-site;
- Weighbridge dockets and receipts from receiving locations;
- Reference to analytical results, including quality control results and waste classification category if available.

12.8.10 Construction Waste and Resource Management

The waste management procedures implemented for this project will be in accordance with the CoAs, REMMs and CEMF (Section 14.1). Laing O'Rourke will maintain compliance with standard waste management procedures, as per the CEMP ERAPs as well.

A summary of the proposed mitigation measures is given in Waste Management ERAPs – Attachment F of this plan. As per CEMF (14.1a), Construction waste will be managed through a waste hierarchy established to comply with the Waste Avoidance and Resource Recovery Act 2001, which comprises the principles set out in Table 10.

Table 10: Waste hierarchy principles

Level of Avoidance	Acceptance Criteria
Avoidance of waste	Minimise the amount of waste generated during construction by avoiding unnecessary resource consumption (i.e. avoid the use of inefficient plant and construction equipment and avoid materials with excess embodied energy, waste and excessive packaging).

Level of Avoidance	Acceptance Criteria
Resource recovery	Re-use, reprocess and recycle waste products generated during construction to minimise the amount of waste requiring disposal.
Disposal	Where resources cannot be recovered, dispose of them appropriately to minimise the potential adverse environmental impacts.

As per the CEMF (Section 14.1b) requirement, the established targets for the recovery, recycling or reuse of construction waste, and beneficial reuse of spoil for this project is given below:

- A minimum of 95% recycling of construction and demolition waste to be achieved as per TfNSW Standard Requirements (Work contract);
- 100% reuse of beneficial spoil to be achieved as per the TfNSW Sustainability Design Guidelines requirements for this scale of project.

The Waste and spoil management measures to be implemented throughout the project is given in Waste Management and Spoil Management ERAPs in Attachment F of this CEMP.

12.8.11 Unexpected Finds

Unexpected Contaminated finds procedures for the project have been established for specific aspects associated with the SM WSA AEW Footbridge St Marys works. LORAC's Unexpected Contaminated find procedure is given in Attachment K, in accordance with CoA E98). Specific details are provided below.

12.8.12 Asbestos

ACM may be present in various works areas, including underground services such as information communications technology (ICT), potable water, pipes and inspection pits. All areas which identify asbestos are to be reported to the area supervisor, environmental team immediately upon discovery through the reporting portal procedure. We will coordinate checks and surveys for asbestos and its removal prior to commencing works to ensure it does not represent an environmental and human health risk.

Key asbestos mitigation and management strategies that will be considered and implemented for any discovery throughout the works include:

- Engaging a licenced and certified subcontractor to survey all work areas prior to works commencing;
- Administering asbestos awareness training in the procedural protocols of asbestos identification for workers;
- Stopping works and contacting the appropriate HSE and construction personnel to manage the situation and commence an investigation if asbestos is identified in, for example, buildings, pipes, pits, or soil matrix;
- Engaging a Licensed Asbestos Assessor contractor to investigate, sample and identify the presence and type of asbestos where required;
- An Asbestos Removal Control Plan (ARCP) would be prepared by a Licensed removal contractor if required;

- Asbestos waste must be classified as Special Waste and it cannot be reused or recycled. Asbestos waste can only be transported to and disposed off at appropriately licensed waste receiving facilities. Any engaged asbestos transporters and facilities receiving asbestos waste in NSW weighing more than 100 kilograms, or consisting or more than 10 square metres of asbestos sheeting in one load must track and report this waste to the EPA using WasteLocate.
- Ensuring no works proceed or continue in the area until clearance and authorisation is given from Licensed Asbestos Assessor through that area, has been cleared, and it is safe to proceed.

12.8.13 Heritage and Artefacts

Heritage management procedure developed by the heritage consultant specific to this St Marys Footbridge St Marys works given in Attachment R and Sydney Metro Unexpected Heritage finds protocol will be followed for this work to assess and manage the discovery of artefacts of historical significance, heritage or archaeological value on the works.

Heritage and artefact mitigation and management strategies that will be implemented throughout the construction sites or works areas and the unexpected finds procedure for heritage related issues is detailed in Attachment R of this plan.

12.8.14 Contamination

Soil or groundwater on the works may be contaminated by substances such as heavy metals, hydrocarbons, phenols, Per- and Polyfluoroalkyl Substances (PFAS), or polychlorinated biphenyls (PCBs). Management of known contaminated material will be coordinated prior to and during works to ensure it does not represent an environmental or human health risk.

Key contamination mitigation and management strategies that will be implemented throughout the construction sites and works areas for known or unexpected finds include:

- Stopping works if any visible or odorous contaminated material or soils are identified and informing appropriate HSE personnel to manage the situation;
- Inspection of the suspected contamination has to be carried out by a qualified contaminated lands consultant (verification by a certified contaminated land practitioner);
- Collection of soil and groundwater samples for chemical or asbestos analysis, where required, based on observations;
- Administering contaminated soil and material awareness training for personnel to familiarise them with the procedural protocols to follow should contaminated material be identified;
- Engaging a subcontractor to investigate and remediate the identified area;
- Developing and designing an investigation in accordance with current contaminated site guidelines (NSW), including the methodology, sample technique, sample density, contaminants of potential concern (CoPCs), and nominated laboratory;
- Conducting and assessing each investigation on a case-by-case basis to provide a pragmatic environmental solution which does not cause additional harm to or impact on the environment;

- Collecting in the correct receptacle, labelling with the correct nomenclature, and attaching all samples to be assessed and analysed by a National Association of Testing Authorities (NATA)–accredited laboratory;
- Assessment of results against applicable land use or waste classification criteria in accordance with statutory guidelines made or endorsed by the NSW Environment Protection Authority statutory guidelines;
- Reporting all findings in accordance with the guidelines, with appropriate remedial solutions developed (if required);
- Management of the contamination in accordance with statutory guidelines made or endorsed by the NSW EPA statutory guidelines;
- All inspections, investigations and remediation would be undertaken by a qualified contaminated lands consultant with reports prepared or reviewed by a Certified Contaminated Land Consultant;
- Developing a Spoil Management Plan, as required, subject to volume, to remove and dispose of known and unexpected finds of contaminated material in accordance with contaminated sites and waste disposal guidelines (NSW);
- Ensuring no works proceed or continue until approval and authorisation is given from relevant authority that the area has been cleared.

12.8.15 Stockpile and Laydown Areas

There are various stockpiling and laydown areas proposed for use throughout the duration of the project. These areas may be utilised for temporary spoil storage and for temporary storage of materials to be used during construction. To establish these areas, security fencing will be placed around each area. Impervious geo-fabric will be placed on the ground where stockpiles are to be placed and sediment control fences will be implemented around each stockpile location.

The proposed laydown and stockpile areas have the potential to cause localised impacts such as dust, potential leaching of contaminated soil and sediment laden runoff if not appropriately managed. To mitigated against such potential impacts, the following ERAPs contained in Attachment F will be implemented during the management of stockpile and laydown areas:

- Air Quality and Dust Management;
- Waste and Resources Management;
- Spoil Management;
- Soil and Water Quality Management;
- Biodiversity Management

The stockpile and laydown areas as shown on the ECMs in are located within or adjacent to the construction boundary as defined in Chapter 8 of the EIS. Two of the stockpile and laydown areas are partially located within the St Marys Railway Station heritage listing in the Penrith Local Environment Plan 2010 as is identified on the ECMs, Figure 20. Both of these areas, which will be temporarily utilised during construction, will not impact upon the heritage elements of St Marys Railway Station as is documented in the Heritage Management Procedure (Attachment R).

The main FSM site compound and laydown area as approved under the EIS will be established at Harris Street. Further Ancillary Facilities (Laydowns 1-5 and 2 Harris Street) have been

approved under Ancillary Facilities Checklists. A description of how the proposed stockpile and laydown areas comply with each requirement of MCoA A17 is provided in the Ancillary Facilities Assessment.

Should any further ancillary facilities be required LORAC will submit the necessary assessment to TfNSW and the ER. Future ancillary facilities would be approved in accordance with A17 or A22.

MCoA A17 requires that certain criterion are met in order for ancillary facilities checklists to be utilised during construction as follows:

Ancillary facilities that are not identified by description and location in the documents listed in Condition A1 can only be established and used in each case if:

(a) they are located within or immediately adjacent to the Construction Boundary of the CSSI; and
(b) they are not located next to sensitive land use(s) (including where an access road is between the facility and the receiver), unless the landowner and occupier have given written acceptance to the carrying out of the relevant facility in the proposed location; and
(c) they have no impacts on Heritage items (including areas of archaeological sensitivity), threatened species, populations or ecological communities beyond the impacts approved under the terms of this approval; and
(d) the establishment and use of the facility can be carried out and managed within the outcomes set out in the terms of this approval, including in relation to environmental, social and economic impacts.
Note: This condition does not apply to any ancillary facilities or work that are exempt or complying development, established before the commencement of construction under this approval or ancillary facilities established under Condition A22.

MCoA A22 requires that certain criterion are met in order for ancillary facilities checklists to be utilised during construction as follows:

Lunch sheds, office sheds, portable toilet facilities and the like, can be established and used where they have been assessed in the documents listed in Condition A1 or satisfy the following criteria:

(a) are located within or adjacent to the Construction Boundary
(b) Have been assessed by the ER to have:
i. Minimal amenity impacts to surrounding residences and businesses, after consideration of matters such as compliance with the ICNG, traffic and access impacts, dust and odour impacts, and visual (including light spill) impacts, and
ii. Minimal environmental impact with respect to waste management and flooding, and
iii. No impacts on biodiversity, soil and water, and Heritage items beyond those already approved under other terms of this approval.

12.9 Cumulative impacts

Noise, air emissions and visual changes generated due to construction activities, construction traffic and redistribution of traffic, affect the amenity for the nearby residents and reduce the overall liveability and attractiveness of the area causing inconvenience, changes to lifestyle, disruption to daily life and activities. The cumulative impacts in interface zones where two contractors are working in adjacent areas will require effective coordinated management and consultation, particularly in regards to out of hours works.

Combined amenity impacts are likely to occur in residential areas adjacent to construction activities and construction compounds. However, different people would perceive amenity impacts differently. Vulnerable groups living close to construction activities would be more sensitive to change in amenity. These include older people, children, people with a disability or special needs, or people with medical conditions.

Consultation with, and the provision of information to, the surrounding community is regarded as a major factor in controlling the negative reaction to the inevitable noise and other potential impacts emanating from the construction site. Through mitigation and management measures detailed in the Project management plans, the Project team will effectively manage interfaces and coordinate with road authorities, RTOs, councils, and other projects to minimise disruption to transport networks, businesses and the broader community and support consistent messaging. We recognise that stakeholders, businesses and the community will be sensitive to engagement and construction fatigue over the life of the Project, and we will regularly review processes, materials and activities to ensure they remain effective in communicating project information, eliciting feedback and building support for the Project.

To address specific sensitivities of residents to visual, noise and air quality amenity impacts during construction, a Community Liaison Management Plan (CLMP) has been developed. The plan details how residents would be engaged before and during construction so as to inform them of project activities and provide a feedback mechanism for residents.The CLMP can be found on the project server.

Cumulative construction impacts and the interface of SM-WSA projects are also discussed in ongoing monthly meetings with projects that are under construction at the same time

13.0 Emergency Preparedness and Response

Attachment J to this plan sets out the types of environmental emergencies which could occur on site. In the event that one or more of these environmental emergencies occurs, we will take the following steps:

- Immediately report all incidents to the Environmental Manager, Project Manager and Construction Manager, who will assess the situation and manage the subsequent steps;
- Immediately take all reasonable steps to contain further damage or danger to personnel, public, property and the environment;
- Inform relevant authorities in accordance with the regulatory requirements provided in section 17.3 of this plan;
- Contact emergency services personnel such as the fire department or spill clean-up services as necessary, as well as the site emergency response team;
- Notify the General Manager and Leadership Team immediately via telephone and email. The General Manager will arrange for notification to the non-owner participants senior leaders has necessary;
- Inform the Sydney Metro WSA and Environmental representative as necessary and in accordance with contractual and approval requirements;
- Complete a detailed report of the incident using INTELEX;
- Liaise with the Sydney Metro WSA and Environmental Representative regarding corrective and preventative actions required and the timeframes within which these actions must occur;

- Undertake the corrective and preventive actions.

Information on the handling of hazardous materials will be contained in the SDS, and emergency services contact numbers are to be displayed in the main site office. The emergency response process is to be periodically tested via an environmental emergency drill at intervals not exceeding 12 months.

The project has established and documented a Trigger Action Response Plan (TARPs) provided in attachment T. The TARPs define the minimum set of preventative actions required by site personnel in response to unpredicted impacts or deviation from a defined set of weather conditions.

Specific system requirements related to environmental emergencies are outlined in the emergency planning and response and risk and opportunity system requirements

13.1 Site shutdown planning

Site shutdown periods must be planned and coordinated to minimise the risk of environmental impact. Shutdown periods are considered to be any period in which construction activities are not planned to take place on the site for more than three consecutive days. This includes public holiday and rostered day off (RDO) periods. Site shutdown planning must be undertaken in accordance with environmental planning system requirement. Planning activities must ensure that inspections, resources and contingency measures are agreed and implemented for the shutdown period. This is to be documented in a specific Site Shutdown Strategy.

The Site Shutdown Strategy will include the following:

- Shutdown-specific environmental risk assessment;
- Additional site-specific controls for the shutdown period;
- Resources, including plant, equipment and materials for the period;
- Roles and responsibilities for personnel on call during the shutdown period, including the nominated inspection and monitoring regime;
- Emergency response procedure and communication protocols.

14.0 Records

Document control requirements associated with the HSEMS will be implemented in accordance with the procedure Document Control – Records and Filing. Laing O'Rourke's record management system allows for ready access to the environmental information necessary for compliance with section 7.5 of the AS/NZS ISO 14001 Standard. This may include hardcopy folders, server-based electronic systems, and/or proprietary document management systems.

Environmental records generated on the works will be retained in our document control system, which will also house the current revisions of environmental documents, records and data. The Environmental Manager is responsible for maintaining all environmental management documents and records as current at the point of use. Types of documents and records relevant to the works include:

- Site inspections, audits, monitoring, reviews or remedial actions;
- Documentation as required by performance conditions, approvals, licences and legislation;

- Modification to site environmental documentation (e.g. CEMP, Procedures and ECM);
- Correspondence with public authorities and stakeholders;
- Induction and training records;
- Reports on environmental incidents, other environmental non-compliance non-compliances complaints and follow-up actions;
- Community engagement information;
- Minutes of CEMP and EMS review meetings and evidence of any actions taken;
- Other records as required by the CEMF, CoAs or contractual requirements.

All environmental management documents are subject to ongoing review and continual improvement. This includes times of change to scheduled activities or to legislative or licensing requirements. Only the Environmental Manager has the authority to change any of the environmental management documentation.

Individuals with responsibilities for work packages or supply chain packages are responsible for the proper maintenance and upkeep of the record management system to ensure:

- Files and records are kept up to date;
- Records are not lost, damaged or inadvertently destroyed;
- Records are maintained in accordance with contractual, statutory requirements and timeframes;
- Objective evidence of compliance with environmental requirements is kept;
- Records are filed in accordance with Document Control – Records and Filing;
- Records will be accessible onsite for the duration of works;
- Records would be available in a timely manner to the clients upon request and would be retained for a period stipulated by the clients;
- Records are to be retained for no less than 7 years (CEMF 3.18);

15.0 Auditing

Auditing of the EMS and project compliance will be carried out in accordance with the CEMP, CoAs, REMMs, CEMF and internal LORAC EMS requirements. We anticipate the works to be audited within three months of commencing on site and approximately every six months thereafter, and in accordance with Laing O'Rourke's audit schedule. The General Manager, in consultation with the Management Team, will decide on the frequency, scope and timing of site audits in accordance with the requirements of the contract and relevant governance procedures.

An audit report will be issued to the Environmental Manager, Construction Manager and Project Leader for action. The audit report can also be submitted to Sydney Metro and the ER upon request. Actions will be followed up for close-out within one month of the issue of the audit report. The client will undertake audits during the various stages of delivery.

Audits and associated actions will be captured within the assurance application in INTELEX. Actions associated with audits shall also be logged in the Action application in Intelex.

Independent Audit Reports and the Proponent's response to audit findings is to be submitted to the Planning Secretary within two (2) months of undertaking the independent audit site inspection.

Independent audits of the CSSI will be conducted and carried out in accordance with the Independent Audit Post Approval Requirements (DPHI, 2020), as follows:

- Within 12 weeks of the commencement of construction;
- At intervals, no greater than 26 weeks from the date of the initial Independent Audit or as otherwise agreed by the secretary.

Whether an independent audit of the Footbridge St Marys works will be conducted will be dependent on timing and stage of the works.

LORAC will participate as required with Independent Audits of the Project in accordance with CoA A36. These audits will be instigated and coordinated by Sydney Metro WSA as the Proponent of the project. LORAC will participate as required in accordance with Sydney Metro WSA's audit program in accordance with CoA A37.

Based on the duration of the Project (it is envisaged that the works will go for up to 30 months) an internal audit will be undertaken within three months of commencing construction. Subsequent audits will be undertaken every six to 12 months. The purpose of audit is to verify compliance with:

- Compliance with any approval, permit or licence conditions;
- Compliance with the HSEMS, SMP, CEMP and procedures;
- Community consultation and complaint response;
- Environmental training records; and
- Environmental monitoring and inspection results.

The internal audit scope will focus on activities of high environmental risk. An audit checklist will be developed and amended as necessary to reflect changes to this CEMP, subsequent approvals and changes to Acts, regulations or guidelines. In addition, SM-WSA will undertake periodic audits of the CEMP and compliance with the environmental aspects of contract documentation, including this CEMP.

16.0 Review and Approvals

In accordance with Section 3.19 of the CEMF, formal management reviews will be undertaken as part of the continual improvement process, at minimum annually. The Environmental Manager will review the CEMP, Environmental Procedures, Conditions of Approval and mitigation measures, and implementation within 20 days of the commencement of construction. Between the scheduled reviews, a register of issues will be maintained to ensure that any issue raised by internal and external personnel associated with the Project is recorded.

The purpose of the review is to ensure that the system is meeting the requirements of the standards, policies and objectives and, if not, to amend the CEMP to ensure compliance. The review will be held more frequently if:

- Issues arise during environmental surveillance and monitoring;
- Response to environmental incidents and non-compliances;
- There is a change in scope/program;
- If a series of community complaints are received;

- Unexpected finds are encountered;

The review will consider the following:

- Client comments;
- Agency comments;
- Complaints;
- New environmental assessments or updated risk assessments;
- Effectiveness of environmental management documentation implementation;
- Potential improvements to the environmental management documentation;
- Adequacy of resources;
- Findings of audits;
- Environmental objectives and targets;
- Environmental performance;
- Compliance with legal and other requirements;
- Critical Non-compliance or repeated Non-compliances;
- Organisation changes;
- Effectiveness of training and inductions.
- Comments and reports from the ER.

The outcomes of the review could include amendments to this CEMP and related documentation, revision to the Project's environmental management system, risk assessment review, re-evaluation of the Project objectives and targets as well as feeding into other Project documents. A formal review of the management systems by the LORAC Senior Management Team will also occur on a biannual basis. This review shall generate actions for the continual improvement of the systems.

17.0 Monitoring, Measurement and Reporting

Key characteristics of the operations and activities with a significant impact on the environment will be regularly monitored and measured. This will include:

- Recording information to track performance;
- Monitoring environmental controls;
- Monitoring level of conformance/compliance with objectives and targets.

17.1 Assurance Framework and Compliance Monitoring

Compliance with environmental requirements, including project conditions, commitments and relevant mitigation measures from the Sydney Metro-WSA CEMF, CSSI approvals, EIS, REMMs, REF approvals, determination reports and EIA Checklists will be tracked.

Monitoring and auditing requirements across the works will be addressed through our environmental assurance framework. Implementation of the framework will demonstrate that the Sydney Metro Enabling Program is being delivered in accordance with the environmental requirements, policy and expectations. Summarised in Table 11, it includes relevant assurance elements and associated support systems, which have been digitised to promote efficiency and flexibility to meet the needs of the contract, relevant stakeholders and environmental requirements.

Table 11: Environmental assurance framework

Assurance Framework	Assurance Element	Proposed System
Strategic assurance	Six-monthly compliance review; contract and TSR compliance; environmental requirements management, including environmental design compliance; and monthly environmental system self-check	This plan, digitised monthly environmental reports, pre-construction compliance matrices, six-monthly compliance reports and INTELEX
Operational assurance	Environmental incident management; environmental inspections, SERs, environmental monitoring and audits by our environmental team; environmental dashboard and KPIs; environmental change management and contractor approvals; and audit program and corrective actions	; INTELEX for data capture and action tracking, action tracking and closeout, and lead and lag indicators for environmental performance; Laserfiche for online forms and workflow system for automating change management and system processes
Compliance assurance	Pre-Construction Environmental Compliance Review	A Pre-Construction Environmental Compliance review for the works shall be completed detailing compliance with all relevant conditions and mitigation measures prior to commencement of construction.
Project contractors	Contractor internal environmental audits, and SMWS and EWMS audits	Digitised contractor inputs for inspection, monitoring and event management, and monthly project reports

17.1.1 Environmental Inspections

An environmental inspection report will be used to monitor environmental issues on site and issued to the Project Manager. The report will generally be completed on a weekly basis across the works and will be captured digitally within the INTELEX system, which will allow our site team to complete inspection activities and raise and assign environmental actions in real time. A copy of the LORAC Environmental Inspection Form from INTELEX System is given in Attachment M of this CEMP. The frequency may change based on site activities being completed and associated level of environmental risk as identified in the 30/60/90 process. Periodic inspections by the Environmental Manager would take place to verify the adequacy of all environmental mitigation measures.

Environmental Representative to undertake fortnightly inspections, dependant on level of risk presented by the activities at the time.

17.1.2 Environmental Monitoring

Table 12 describes Laing O'Rourke's approach to environmental monitoring on the works. Monitoring will be undertaken to demonstrate that environmental performance objectives are being met and to meet the obligations associated with the sustainability rating. Monitoring will be a combination of real-time unattended and attended monitoring regimes.

Table 12: Environmental reporting

Aspect	Approach	Locations
Noise	Attended noise monitoring during high-risk activities, Out of Hours Works and in response to complaints, or as required under the SM OOHW Protocol	All locations as necessary
Vibration	Attended vibration monitoring as required or as required under the SM OOHW Protocol and CSSI for works within heritage curtilage	All locations as necessary
Water quality	Dewatering	All locations as necessary
Air quality	Visual inspections to make sure that dust impacts are minimised to the greatest extent practicable	All locations as necessary

17.1.3 Collaborative Environmental Inspections with Stakeholders

Collaborative environmental inspections with Laing O'Rourke, TfNSW representatives and Sydney Metro - WSA will be scheduled as required.

17.1.4 Pre-and Post-Rainfall Inspections

Weekly inspections of the erosion and sediment control measures will be carried out in areas considered to have an ERSED risk such as a stockpile areas, areas of excavation or area with insufficient ground cover. Issues identified would be rectified as soon as practicable. Site inspections will be undertaken prior to rainfall events in ERSED risk areas where 20mm or more is predicted for a 24-hour period. All water will be tested (and treated if required) prior to discharge from the site in order to determine compliance with the appropriate approvals and licencing. No water will be discharged from the site without written approval of the Contractor's Environmental Manager (or delegate). This is to form a HOLD POINT. Post-rainfall inspections will be undertaken on all projects or sites in which erosion and sediment control is considered a high risk.

17.1.5 Project Leadership Inspections

Project leadership will undertake regular safety and environmental inspections, which will be captured in Field View which is a cloud-based system.

17.2 Environmental Action Tracking

Environmental issues or Non-compliances to operational control procedures or the CEMP, or other issues identified during environmental inspections that require further action will be captured in INTELEXas defined in our procedures. Action owners will be notified. Actions will be tracked to close out through the INTELEX system with monitoring and oversight provided through the action tracking dashboard.

All environmental incidents, Non-compliances and issues must be reported verbally to TfNSW and the ER. TFNSW will report to Sydney Metro WSA in accordance with the Sydney Metro Environmental Incident and Non-compliance Reporting Procedure.

The following environmental issues or non-compliances are to be included within INTELEX as corrective actions:

- Internal inspection outcomes that cannot be rectified immediately will be assigned actions on the environmental inspection report;
- Incidents and associated corrective actions;

- Internal audit observations/non-compliance;
- Client audits or other notice of non-compliance;
- Notices or action from regulatory authorities.

The following Environmental Issues are to be included within project systems as corrective actions:

- Internal inspection outcomes that cannot be rectified immediately – actions nominated on the Inspection Report and Management H & S and Environmental Checklist (where applicable) – to be recorded in INTELEX;
- Incidents and associated corrective actions – to be recorded in Sydney Metro Incident and Non-Compliance form , project systems folder and INTELEX;
- Internal audit observations/non-compliance – Project Corrective Action Register and INTELEX;
- Client audits - Project Corrective Action Register;
- Notices or action from regulatory authorities – to be recorded in INTELEX;
- Non-compliance under applicable environmental planning approvals – to be recorded in INTELEX.

Where environmental leadership inspections or monitoring activities identify actions that are required to be logged into INTELEX , a workplace visit is to be created and the associated actions generated. LORAC personnel will close out any ER inspection actions. ER inspections will be issued through email/ Teambinder. Inspection close out will be via SAI360 (SM platform).

17.2.1 Environmental Issues

An Environmental Issue is an event, action or activity that has not conformed or fully conformed to the projects stated environmental commitments and obligations. The project's environmental commitments and obligations are outlined generally within this CEMP, the Environmental Impact Statement, associated reports, CEMF and documents listed in the Conditions of Approval. An Environmental Issue can be defined as the rejection of or the failure to conform to system standards, rules, or procedures. It is important to note that the standard or procedure is not related to a CoA.

The environmental issue shall be investigated immediately by the Environmental Manager, if it is confirmed, LOR will verbally notify TfNSW promptly and provide details of the event along with the findings of investigation. Environmental Issues shall be recorded in the internal system-based folder. Environmental Issues are rectified through the regular review of practices and the addition of mitigation measures to prevent reoccurrence through means such as briefing the team via lessons learned and training where required.

17.2.2 Non-Compliances

In accordance with the CoAs, a non-compliance is defined as:

> "*An occurrence or set of circumstances or development that is a breach of this approval".*

Where a potential non-compliance is identified it shall be investigated and the Environmental Manager will verbally report this immediately to TfNSW representative and the ER. TfNSW shall report the non-compliance to Sydney Metro as required. Non-compliances shall be recorded and addressed by raising a Sydney Metro non-compliance form and logged into INTELEX. Corrective actions will be developed to prevent recurrence.

Where an environmental non-compliance is identified and is substantiated, a Non-compliance and Corrective Action Report/Request (CAR) will be issued in accordance with Sydney Metro

WSA Environmental Incident and Non-Compliance reporting procedure (SM-17-00000096). If a non-compliance is identified, TfNSW will be verbally notified of the environmental issue. It will be TfNSW's responsibility to then notify Sydney Metro. The aforementioned form will be issued within 48 hours by the party responsible for the breach.

Non-compliances arising out of monitoring, inspections and audit outcomes will be recorded in the assurance application in INTELEX and tracked to close out. LORAC will document and detail any non-compliances arising out of any monitoring, inspections and audits. TfNSW and Sydney Metro – WSA will be made aware of all non-compliances in a timely manner. LORAC shall provide TfNSW and the SM-WSA with the Incident Report required in a SAI360 compatible format.

In accordance with CoAs A44-A45 the Planning Secretary must be notified via the Major Projects website within 7 days after the Proponent becomes aware of any non-compliance with the terms of the approval. This notification process will be undertaken by SM-WSA.

17.2.3 Corrective and Preventative Actions

Corrective actions will be identified as below:

- Where an issue is identified and raised, the Environmental manager or delegate will liaise with the appropriate project personnel or qualified person(s) or seek advice from TfNSW or the ER to determine the most appropriate corrective action to implement;
- Where assessed by the Environmental Manager to be appropriate, the corrective action will be actioned through the Corrective Action Request (CAR) to prevent a re-occurrence.

Preventative actions will be identified as below:

- Relevant incidents, complaints and non-compliances are discussed at relevant meetings;
- Trends relating to environmental incidents and non-compliance findings are reviewed at these meetings to identify any reoccurring issues that are indicative of the need to take preventative action;
- Any member of the LORAC project team, including subcontractors as well as the ER, TfNSW and SM-WSA can contribute and provide suggestion to any required or appropriate preventative action;
- Where assessed by the Environmental Manager to be appropriate, the corrective action will be actioned through the Corrective Action Request (CAR).

17.2.4 Corrective action Request Management

Where a non-compliance is detected, a Non-Compliance Report (NCR) will be raised using the Environmental Incident and Non-compliance Notification report (SM ET-FT-403). The LORAC, ER, TfNSW and SM-WSA representatives will determine if issues identified during an environmental audit or inspection will be closed out as part of the inspection or audit process or via the issue of an NCR based on the severity of the issue and its potential to impact sensitive receivers or the environment.

Environmental related non-compliances are raised with the Environmental Manager to determine the appropriate actions and close-out dates. On completion of agreed actions, the Environmental Manager shall sign off the NCR to signify close-out and provide a copy to TfNSW and SM-WSA. Any changes to operations or practices resulting from actions are to be communicated to employees and subcontractors as required. A register of all NCRs raised on the Project will be maintained on the INTELEX system(s).

Corrective actions and assurance actions will be managed via the assurance application in INTELEX , which allows corrective actions to be assigned, tracked and managed to closeout. The CAR differentiates issues or items by risk ranking. Table 13 sets out nominated timeframes to resolve items on the CAR.

Table 13: Corrective action request ranking

CAR risk ranking	Timeframe for resolution
1	Action must be commenced immediately to resolve the issue
2	Action must be resolved within one week
3	Action must be resolved within one month

17.2.5 Monthly Environmental Reporting

Laing O'Rourke's approach to environmental reporting is outlined in the Environmental System Requirement Communication and Reporting and this section of the CEMP.

Monthly internal environmental reporting is to be completed through Laing O'Rourke's digital contract review process. The Project Manager for each section is responsible for ensuring environmental performance information, such as the following as necessary, is included in each month's digital contract review:

- Summary discussion on risks and opportunities – to be read in conjunction with the risk register;
- Environmental performance outcomes, improvement initiatives or corrective measures
- Client and stakeholder engagement and interface and, particularly, client feedback on environmental performance;
- Environmental incident and event management, including the outcomes of incident investigations and corrective actions;
- Content for the environmental dashboard.

Subcontracts and supply chain agreements must include supply chain reporting requirements as necessary. This may include:

- Environmental management reporting requirements and key performance indicators;
- Waste management reporting;
- Government Resource Efficiency Policy (GREP);
- Project-specific conditions of approval or environmental compliance reporting requirements.
- Supply chain environmental performance reporting will be used as necessary to inform environmental reporting.

Program-level monthly environmental reporting will include but not be limited to the following:

- Summary of emerging and / or outstanding environmental issues and any proposed or actual mitigation actions;

- Highlight of environmental management initiatives during the reporting period.

17.2.6 Monthly Environmental System Self-Check

On a monthly basis, the performance and implementation of the environmental management system on the Sydney Metro Enabling programme will be reviewed via an environmental system self-check, with outcomes retained as records. Table 14 outlines the requirement and criteria to be revised and the relevant frequency.

Table 14: Environmental Self Check

System Requirement	Criteria	Frequency
Severe Environmental Risk Program	Program implemented and actions complete	Monthly
Site inspection implementation	Site inspections have been completed in accordance with the CEMP requirements	Monthly
Event management	Environmental incidents have been reviewed, investigations completed, and actions closed out	Monthly
Environmental monitoring program	Environmental monitoring has been completed and reviewed for compliance. Non-compliances have been actioned and closed out	Monthly
Waste management	Waste management register is up to date, including spoil management and disposal	Monthly
Conditions of approval tracking	Conditions of approval compliance matrix has been reviewed and updated, demonstrating compliance with conditions	Six monthly
Environmental licences	Environmental licence compliance has been reviewed and reporting completed as nominated	Quarterly

17.2.7 Supply Chain Environmental Compliance Obligations Review

Suppliers and subcontractors operating on the works will be subject to environmental performance requirements. Environmental performance requirements will apply to all suppliers and subcontractors in accordance with the supply or subcontract agreements. To ensure supply chain environmental performance requirements are met, we will implement:

- Supply chain audits of the implementation of supply chain environmental systems, which will verify implementation of the environmental requirements from their respective agreements;
- Environmental inspections reviewing supply chain performance;
- Monthly environmental reports as required to report on environmental performance and as outlined in supply chain agreements;

- Waste disposal reporting for all supply chain partners operating on site with obligations for waste disposal, who will maintain waste disposal records and provide reports on a monthly basis;
- Environmental monitoring to verify environmental performance targets are being met where required by the supply chain agreement.

If work on the site is being performed contrary to this plan or applicable legislative requirements, action will be taken immediately. This may include a direction to stop work and issue of a relevant site instruction to address the non-compliance to works procedures and environmental controls.

17.3 LORAC Incident Management

The management, investigation, reporting and notification process for environmental events, including positive events, is to be undertaken in accordance with the event management and reporting system requirement. All incidents (including potential incidents) must be reported so that they can be investigated and prevented from recurring.

All environmental events will be recorded in the Event Management application in Intelex.

All Class 1, Class 2 and Class 3 incidents are to be recorded in Intelex, Laing O'Rourke's online incident investigation and reporting tool. Intelex can be accessed from Laing O'Rourke's intranet, iGATE, or the Intelex mobile application. Incidents must be logged in Intelex within 48 hours of occurrence.

For Class 1 and Class 2 incidents, an investigation must also be logged in Intelex.

The Environmental Leader, S&E General Manager and Head of Legal must be notified by telephone as soon as practical after any actual or potential Class 1 or Class 2 incidents with the potential to result in regulatory action. Table 15 describes the three classes of environmental incidents for the purposes of reporting.

Table 15: Environmental incident classes

Class 1	Class 2 (including potential)	Class 3
Create permanent or long-term damage to the environment. This damage will result in the environment taking 12 months or more to return to pre-existing conditions. **Major environmental investigation and potential for large prosecution.** **These events must be reported immediately to the General Manager Sustainability and Environment, Head of Legal and Environmental Leader.**	Create short-to-medium-term damage to the environment. This damage will result in the environment taking up to 12 months to return to pre-existing conditions. Potential for prosecution or infringement notice.	Typically cause short-term or nuisance damage. The damage is easily rectified, usually within one day. Does not cause medium or long-term damage (e.g. any spill to ground of fuel, chemical or oil). Heritage or artefact desecration.

Class 1	Class 2 (including potential)	Class 3
Serious or material environmental harm or damage. **Environmental notices that are not actioned.** **Cost to make good exceeding $50,000.** **Breach of a statutory environmental permit or approval condition that results in serious or material environmental harm or results in the project being shutdown.**	Potential or actual material environmental harm or damage reportable as per State regulation. Cost to make good from $5,000 to $50,000. Potential for prosecution <= $50,000. Event related to actual or potential Infringement / Improvement Notices by any authority related to environmental legislation or planning approvals conditions Breach of a statutory environmental permit or approval condition	Minor pollution event. Minor failure of environmental controls which does not result in a risk of regulatory action. Typically cost equal to or less than $5,000 to make good.

Corresponding Sydney Metro Incident Classification					
C1	**C2**	**C3**	**C4**	**C5**	**C6**
Irreversible large-scale environmental impact with loss of valued ecosystems	Long-term environmental impairment in neighbouring or valued ecosystems Extensive remediation required	Impacts external ecosystem and considerable remediation is required	Short-term and/or well contained environmental effects. Minor remedial actions probably required	Change from normal conditions within environmental regulatory limits and environmental effects are within site boundaries	No appreciable changes to environment and/or highly localised event

The classifications are explained in detail with examples in the Laing O'Rourke Environmental Incident Classification Guidelines, which is available in the event management and reporting system requirement.

17.3.1 Incident Notification

All incidents, including potential incidents, must be reported so that they can be investigated and prevented from recurring. All personnel, including supply chain partners, are required to notify Laing O'Rourke of all environmental incidents, with verbal notification to be provided immediately. Notifications must include as a minimum:

- Time, date, nature, duration and location of the incident;
- Location where incident has occurred;

- Nature, estimated quantity or volume and concentration of any pollutants involved;
- Circumstances in which the incident occurred and cause of the incident, if known;
- Action taken or proposed to be taken to deal with the incident.

Failure to complete the required notifications will be considered a system Non-compliance or non-compliance.

Notification and any environmental incidents, including but not limited to vegetation damage, fauna injuries, contamination discoveries, Indigenous artefact or heritage discoveries, and fuel spills, are to be reported to LORAC's Environmental Manager and site personnel. Verbal or written notification is to be subsequently provided to the client within four hours for Class 1 and 2 incidents and 24 hours for Class 3.

A41 The Planning Secretary must be notified via phone or in writing via the Major Projects website immediately after the Proponent becomes aware of an incident. Any notification via phone must be followed up by a notification in writing via the Major Projects website within 24 hours of the initial phone call.

For any Incident to be reported to the Planning Secretary (as defined by CSSI 10051, an occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance with the terms of the approval), the Planning Secretary will be notified via phone or in writing via the Major Projects website immediately after the Laing O'Rourke becomes aware of an incident. Laing O'Rourke shall report any incidents to and provide Sydney Metro - WSA with the written notification to allow for Sydney Metro - WSA to report to the Planning Secretary (CoA A41).

For any CSSI non-compliances, the Planning Secretary will be notified in writing via the Major Projects Website within in seven (7) days after the aware of the incident as per the CSSI conditions (CoA A44).

Laing O'Rourke will provide immediate notification in writing of any incident or issue to TfNSW, Sydney Metro WSA and the ER no later than one hour after the incident occurs and following the agreed protocol described in Table 16.

Table16: Reporting protocols

Incident	Reporting Protocol
Class 3 incidents	Where a Class 3 incident has occurred, the Laing O'Rourke Site supervisor or immediate supervisor is to be informed. Class 3 incidents must be logged directly into INTELEX, and TfNSW, Sydney Metro, Environmental Representative and Acoustic Advisor (where necessary) is to be notified.
Actual or potential class 2 incidents	Where an actual or potential Class 2 incident has occurred where there is risk of regulatory action, the Leadership Team (Environmental Leader) is to be informed via the IDE General Manager and relevant Project Manager. Class 2 incidents are to be investigated using a recognised investigation protocol.
Class 1 incidents	Where a Class 1 incident the S&E General Manager, and Leadership Team (Environmental Leader) will be notified by telephone immediately or Class 2 Incidents with the potential to result in regulatory action. The General Manager will notify the NOP legal representatives in accordance with the agreed protocols.

Incident	Reporting Protocol
	The requirements of the flow chart in Attachment B to this plan are to be applied to all actual or potential Class 1 environmental incidents. Class 1 incidents will be subject to an incident cause analysis method (ICAM) Where complaints are received at project sites or workplaces involving the media or where Laing O'Rourke or client image is likely to be affected, they will be documented in accordance with the CLMP.

All Class 1 and 2 incidents will be reported to the relevant state and federal authorities as required under relevant acts and regulations and MCoA. Complaints will be reported to external authorities in accordance with specific licences and permit in accordance with the MCoA requirements.

The applicable legislation is listed in the integrated management system Environmental External Websites and Legal Compliance Service.

The HSE Internal Incident Notification will be completed for all actual and potential Class 1 and 2 incidents within 24 hours of the incident occurring and sent via email and/or fax to the distribution list, including the:

- Environmental Manager;
- Health, Safety and Wellbeing Manager;
- General Manager;
- Leadership Team;
- Project Manager;
- Subcontractors' and consultants' project representatives;
- TfNSW;
- Planning Secretary through Sydney Metro – WSA;
- NOP Environmental Leaders (note – corporate representatives).

17.3.1.1 Sydney Metro Environmental Incident and Non-Compliance Procedure:

In the event of an Environmental Incident, the Sydney metro Environmental Incident and Non-compliance Reporting Procedure (SM-17-000000796) will be followed along with the LORAC Environmental Incident Reporting procedure.

The Sydney Metro procedure provides references to:

- Types of incidents;
- Criteria for classifying of environmental incidents;
- Processes for systematically responding to and managing emergency situations, and;
- Processes, and legal requirements (e.g. Acts, Regulations, etc), for reporting and notification of an environmental incident.

The Sydney Metro environmental incident and non-compliance procedure covers the management of events such as, but not limited to:

- Spill of fuels, oils, chemicals and other hazardous materials;
- Unauthorised discharge containment devices;

- Unauthorised clearing or clearing beyond the extent of the project boundary or premises;
- Inadequate installation and subsequent failure of temporary erosion and sediment controls;
- Unauthorised damage or interference to threatened species, endangered ecological communities or critical habitat;
- Unauthorised harm or desecration to Aboriginal objects and Aboriginal places;
- Unauthorised damage or destruction to any state or locally significant relic or Heritage item;
- Potential contamination of waterways or land;
- Accidental starting of a fire or a fire breaking out of containment;
- Any potential breaches of legislation, including a potential breach of a condition of an environment protection licence, MCoAs or any agency permit condition;
- Works undertaken without appropriate approval or assessment under the EPA act;
- Works undertaken that are not in accordance with a project assessment;
- And unauthorised dumping of waste.

Incident Notification and Reporting:

The incident notification and reporting requirements are described in full within the Sydney Metro Environmental Incident and Non-compliance Reporting Procedure and a Flowchart of the Sydney metro incident notification and reporting process is provided in the Attachment B. Sydney Metro Environmental Incident and non-compliance Notification Report template is also given in Attachment B of this plan.

Table 17 sets out how LORAC will notify the client of incidents on the works in accordance with the Sydney Metro Incident Reporting procedure.

Table 17: Environmental incident classes and notification as per Sydney metro procedure

Class & Category	Category Definition	Verbal/ Written Notification to Principal & ER	Written Report to Principal & ER	
			Incident Notification Report	Incident Investigation Report
Class 3				
C6	No appreciable changes to environment and/or highly localised event.	Within 48 hours	Within 48 hours	N/A
C5	Change from normal conditions within environmental regulatory limits and environmental effects are within site boundaries.			
C4	Short-term and/or well contained environmental effect. Minor remedial actions probably required.			
Class 2				

Class & Category	Category Definition	Verbal/ Written Notification to Principal & ER	Written Report to Principal & ER	
			Incident Notification Report	Incident Investigation Report
C3	Impacts external ecosystem and considerable remediation is required.	As soon as possible becoming aware	Within 48 hours	Within 7 days
C2	Long-term environmental impairment in neighbouring or valued ecosystems. Extensive remediation required.			
Class 1				
C1	Irreversible large-scale environmental impact with loss of valued ecosystems.	As soon as possible after becoming aware	Within 48 hours	Within 7 days

a. Sydney Metro and ER

Environmental incidents that would be or have the potential to be classified as Category 1 and Category 2 under the Sydney Metro Environmental incident and Non-compliance Reporting Procedure, will be notified immediately to TfNSW, Sydney Metro Environmental Manager and the ER by LORAC. Class 3 incidents will be reported to the principal and ER within 48 hours. Incident reports will be provided to Sydney Metro 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.

b. NSW EPA

The Environmental and Sustainability Manager will be available to be contacted by the NSW EPA on a 24-hour basis and who have authority to take immediate action to shut down any activity, or to affect any pollution control measure, as directed by Sydney Metro or an authorised officer of the NSW EPA. LORAC is required to inform the principal immediately of any incidents that may require notification to the NSW EPA. Section 148 of the Protection of the Environment Operations Act 1997 (PoEO Act) requires notification to the NSW EPA of pollution incidents causing or threatening to cause material harm to the environment. Under Section 147, 'material harm' is defined if:

(a) If the actual or potential harm to the health or safety of human beings or ecosystems is not trivial.

(b) If actual or potential loss or property damage (including clean-up costs) associated with an environmental incident exceeds $10,000.

Loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to avoid, mitigate harm to the environment. For the purposes of this part

of the PoEO Act, it does not matter that harm to the environment is caused only in the premises where the pollution incident occurs.

c. DPHI

The Department must be notified via phone or in writing via the Major Projects website immediately after the Proponent becomes aware of an incident. Any notification via phone must be followed up by a notification in writing via the Major Projects website within 24 hours of the initial phone call. The notification must identify the CSSI (including the application number and the name of the CSSI if it has one) and set out the location and nature of the incident. Subsequent notification must be given, and reports submitted in accordance with the requirements set out in Appendix A of the SSI Project Approval (MCoA). The Planning Secretary must be notified in writing via the Major Projects website within seven days after the Proponent becomes aware of any non-compliance with the conditions of this approval. A noncompliance notification must identify the CSSI (including the application number for it), set out the condition of approval that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be undertaken to address the non-compliance.

Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.

17.3.2 Senior leaders' environmental incident review

Within three days of any Class 1incident, the Project Manager will convene a briefing with the relevant senior business leader to provide an update on the incident investigation and allow the Leadership Team to be actively involved in the investigation process. The briefing will include discussion on the progress of the investigation and any specific initial findings. A status report on any rectification work or maintenance activities to the relevant environmental controls will also be provided.

Information relating to the incident investigation that will be forwarded to the General Manager and Leadership Team includes:

- The condition of the environment and the status of any rectification or remediation works;
- The completed incident investigation report, including appropriate causal analysis and corrective actions;
- Program for the implementation of the corrective actions and any maintenance activities;
- A completed environmental learning bulletin template to enable knowledge-sharing with relevant parties;
- Any other relevant information.

17.3.3 Notifying potential or actual environmental harm pollution incidents

The NSW EPA, SM WSA and DPHI must be notified immediately of all pollution incidents that cause or threaten material harm to the environment. Harm to the environment will be deemed material if the effect (or potential effect) from an incident on the health or safety of humans or ecosystems is not trivial and/or results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000.

The Environmental Manager, General Manager, Head of Legal, Environmental Representative must also be notified immediately of any incidents which require EPA notification. In the event of a pollution incident, works would cease in the immediate vicinity and the IDE would immediately notify the Sydney Metro - WSA Representative and TfNSW Environment and Planning Manager. The EPA would be notified if required, in accordance with Part 5.7 of the POEO Act.

If an incident presents an immediate threat to human health or property, 000 Emergency is to be called in accordance with the procedures outlined in the Work Health and Safety Management Plan (WHSMP).

The notification must include information on:

- The time, date, nature, duration and location of the incident;
- The location where pollution is occurring or is likely to occur;
- The nature, estimated quantity or volume and concentration of any pollutants involved;
- The circumstances in which the incident occurred (including the cause of the incident, if known);
- The action taken or proposed to be taken to deal with the incident and any resulting pollution or threatened pollution;
- Other information prescribed by Regulations.

Regardless of the actual or potential impact, these authorities must be notified under legislation for all notifiable pollution incidents. Further information in relation to the incident must be provided immediately if it becomes available after the initial notification. Records of contact with and details of the information provided to external authorities must be maintained.

18.0 Stakeholder and Community Involvement

Mitigation measures will be implemented to minimise community impacts. The stakeholder and community interaction will be in accordance with the Sydney Metro WSA Overarching Community Communications Strategy (OCCS), Section 4 of the CEMF, the DNVIS and the Conditions of Approval.

Stakeholders and the community will be kept up to date with construction update notifications detailing specific milestones, plus specific notifications for highly impactful activities such as night works, or major traffic changes.

18.1 Community Communication Strategy

The LORAC Community Liaison Management Plan (CLMP) will support the OCCS for the Project. This strategy meets the CoAs B1 to B10 of CSSI 10051. Note that the LORAC CLMP will comply with the OCCS, which will be in place for the duration of the works.

Opportunities to provide feedback would be available at different times, places and through different mediums. To ensure the engagement process is convenient and comfortable for a range of different stakeholders, a variety of engagement methods tools will be used to facilitate proactive communication.

The CLMP outlines the engagement tools LORAC is to utilise, summarised below in Table 18:

Tool	Details
Briefings/meetings	Briefings/meetings with key stakeholders including councils, government agencies and station staff.

Tool	Details
	Sydney Metro will lead the Government agency briefings. Meetings held with directly affected businesses and residents as needed.
Door knock	Doorknocks to advise businesses and residents of any specific impacts. Doorknocks during construction if noise and vibration exceeds the limits identified in the Detailed Noise and Vibration Impact Statement.
Written correspondence	All complaints will be closed out with written correspondence.
Notifications	Notifications will be distributed with a minimum 7 days' notice providing project progress and updates (construction updates each month) and include project name, phone numbers, email and web address to enable feedback to be received.
Website updates	Laing O'Rourke will provide Sydney Metro and/or TfNSW with a list of upcoming construction activities for inclusion on the project webpage. All Sydney Metro communication materials uploaded online will adhere to Web Content Accessibility Guidelines (WCAG 2.0).
Translation services	Notifications will contain the translation service telephone number, providing the community with access for those who do not speak English as a first language.
Signage	Site signage will be installed identifying the project names and contact details. Signage or signage requirements to be provided by Sydney Metro or TfNSW. Project information signage, directional, notification of changes to existing parking or bus location signage will be installed at least seven (7) days prior to any changes occurring.
Business Management Strategy	To be produced where there are identified impacts on local businesses such as temporary fencing in front of business, traffic changes that will impact customer access to businesses, production of directional or information signage for the business.
Email distribution list	Stakeholders registered for project updates will receive monthly email updates, managed by Sydney Metro.
Project Infoline	All enquiries will be directed to the Sydney Metro Project Info lines.
Complaints line	All construction related complaints will be directed to the Sydney Metro 24/7 complaints line, which will be made available on monthly notifications and the project specific webpages.

18.2 Complaints Management

Complaints handling is described below and is undertaken in accordance with Section 4.3 of the CEMF and CoAs B3-B10. The complaints management system (Consultation Manager) is managed by Sydney Metro, in which LORAC will participate in the implementation.

The project complaints handling procedure is outlined below:

Members of the community may rise complaints and enquire over the course of the project. LORAC will assist Sydney Metro in managing these complaints and enquires. Stakeholders such as business owners and elected officials may also request site meetings to discuss issues. Contact may occur via:

- 24 hour telephone number – 1800 684 490;

- Written correspondence including letters, emails and Facebook comments;
- Emails to projects@transport.nsw.gov.au;
- Direct engagement – face-to-face interaction including meetings via site visits;
- A mediation system for complaints unable to be resolved (complaints mediator).

18.2.1 Complaints Reporting

Phone call complaints are to be acknowledged within two (2) hours of receipt. When a complaint or enquiry cannot be resolved immediately, a follow up verbal response on proposed action(s) to within 24 hours of a complaint being received.

Email complaints will be responded to within two (2) hours of receipt. However, if an email complaint is received between 10pm and 5am, it will be acknowledged and/or responded to by 9am of the same date.

The Sydney Metro Consultation Manager will advise LORAC of any complaints received and the actions to be taken to resolve the issue. For complaints that require escalation, the Sydney Metro Communications Manager (and/or Place Manager) will responded accordingly.

The Sydney Metro WSA OCCS details a Complaints Management System (Consultation Manager), which includes a Complaints register as per CoA B4. The complaints register will record:

- Number of complaints received;
- Date and time of complaint;
- Number of people (in the household) affected in relation to a complaint, if relevant;
- Method in which the complaint was made;
- Any personal details of the complainant which were provided or if no such details were provided, a note to that effect;
- Issue of the complaint;
- Means by which the complaint was addressed and whether resolution was reached, with or without mediation;
- If no action was taken, the reason(s) why no action was taken.

In accordance with CoA B5, Complainants must be advised of the following information before or as soon as practicable after, providing personal information:

- The Complaints Register may be forwarded to government agencies, including the Department of Planning and Environment (DPHI), to allow them to undertake their regulatory duties;
- By providing personal information, the complainant authorises the proponent to provide information to the government agencies;
- The supply of personal information by the complainant is voluntary;
- The complainant has the right to contact government agencies to access personal information held about them and to correct or amend that information.

In accordance with CoA B7, the Complaints Register must be provided to the Planning Secretary upon request, within the timeframe stated in the request. DPHI have requested the Complaints Register be forwarded weekly and monthly for their review This process is to be managed by the SM-WSA Communications Team.

Complaints are to be investigated, documented, actioned and closed out as per the specifications of this plan. All environmental incidents and complaints are to be recorded within INTELEX within 48 hours of the incident.

18.3 Communication With Internal and External Parties

Laing O'Rourke's employees and other interested parties and stakeholders will be kept informed of the functioning of this plan and EMS as necessary, with specific requirements outlined in this section.

18.3.1 Internal

Internal communication methods will include:

- Digital contract reviews (Laing O'Rourke's internal monthly review forum);
- Program management reports;
- Site inspection reports;
- Audit reports;
- Incident reports;
- Noticeboards;
- Site meetings;
- Employee induction, training and toolbox talks;
- Briefings, notifications and alerts.

18.3.2 External

External communication methods include:

- Collective insight sessions on environmental topics with interested parties, supply chain partners and stakeholders;
- Notification of Sydney Metro - WSA for all significant incidents;
- Project management reports to TfNSW and Sydney Metro - WSA at progress meetings;
- Meetings and correspondence with interested parties (e.g., minister, local council and EPA) as necessary and with TfNSW and/or Sydney Metro - WSA approval, as required;
- Discussions with adjoining land owners or neighbours and the community who may be affected by the works.

Communication with regulatory authorities in relation to the project will be coordinated with Sydney Metro - WSA. This includes contract environmental approvals or compliance matters unless authorised in writing by Sydney Metro - WSA or required by law.

Upon completion of the project, an Environmental Summary Report including Site Inspection Report will be completed to close out construction environmental management issues. Any monitoring data collected during the works will be included in the report.

Attachment A: Environmental incident investigation guidelines

Actual and potential Class 1 incidents will be subject to an ICAM or TapRooT investigation. The following guidelines outline the environmental incident and complaint investigation procedure. The actual detail required will vary depending on the class of the incident. The Environmental Incident and Complaint Report can be used to document the incident.

Step 1: Identify the class of incident and obtain the incident or complaint details

Step 2: Observe and gather information

The first priority is to understand the incident and how the incident occurred.

- Take samples or obtain results (required for actual Class 1 and 2 incidents), such as laboratory results or in situ samples. For Class 1 and 2 incidents, NATA-certified laboratory results may be required.
- For actual or potential Class 1 and 2 incidents Interview persons involved – such as witnesses, supervisors and experts – where required.
- Inspect the incident scene. Take measurements (do not guess), photos and videos and make drawings, diagrams and sketches.
- Collect related documentation. Attach additional material as appropriate such as work method statements, JSEAs, ERAPs, Erosion and Sediment Control Plans, risk assessments, induction records, toolbox talks, prestart records, environmental training records, subcontractor and client incident reports, relevant design documentation and maintenance records.

Step 3: Give a detailed description of the incident

Outlined exactly what happened and give the following details as applicable:

- Area or people affected and pollutant type if appropriate
- Time, date and weather conditions
- Plant, equipment and organisations involved
- Potential stakeholders involved

Describe the nature of the incident, including:

- Breach of licence condition, Act or regulation
- Discovery of cultural heritage item
- Unauthorised release of harmful substance to environment
- Penalty or fine imposed or protection order or notice issued
- Performance of the environmental controls.

Describe the immediate remedial actions undertaken:

- Notification of relevant parties
- Containment of pollution or clean-up of affected area
- Repair to environmental controls

- Rectification of damage and remediation of the affected area.

Step 4: Undertake basic level incident analysis

List the elements involved including people, equipment and environment (weather conditions), procedures and organisational elements involved in the incident. List the essential and contributing factors for these items.

Step 5: Identify the corrective and preventative actions

Identify corrective and preventative actions, which may include:

- Changing equipment or machinery design or maintenance
- Improving environmental control measures
- Implementing additional resources
- Changing work methods, procedures or processes
- Changing or adding to induction training
- Addressing organisational issues.

Step 6: Implement the corrective and preventative actions

Implement the corrective and preventative actions identified in Step 5. This includes:

- Outlining responsibilities and accountabilities
- Obtaining relevant approvals for the corrective and preventative actions (such as regulatory authority or client approval)
- Providing proposed completion dates for the approved actions
- Documenting actions implemented and closed out.

Where a Class 1 Incident has occurred, the E&S General Manager will initiate the investigation and allocate responsibilities; an external consultant may be engaged. Authorities are to be notified in accordance with the legislative time frames in NSW.

Attachment B: Incident Response Procedure

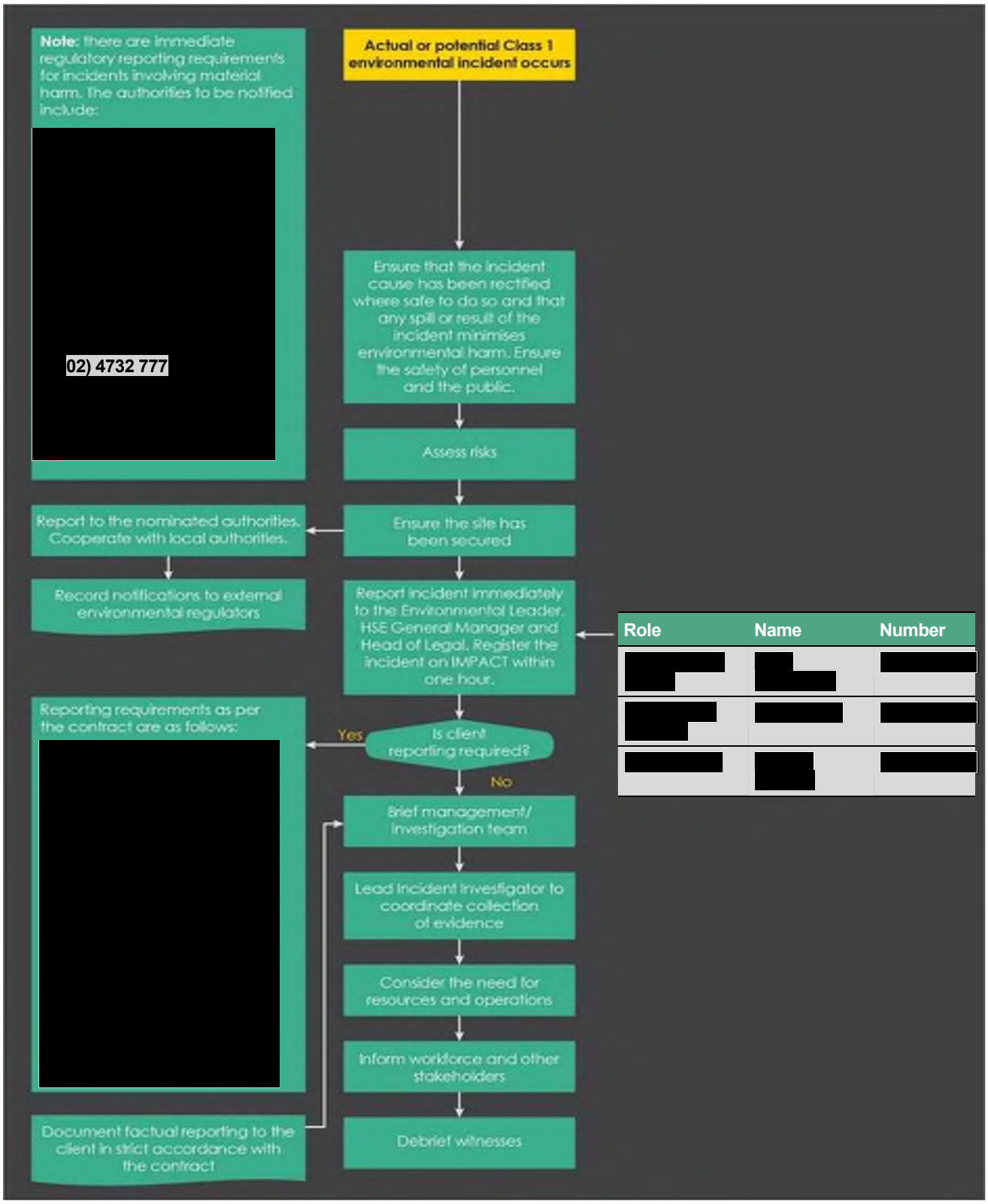


Figure 10: Laing O'Rourke Incident Management Flowchart

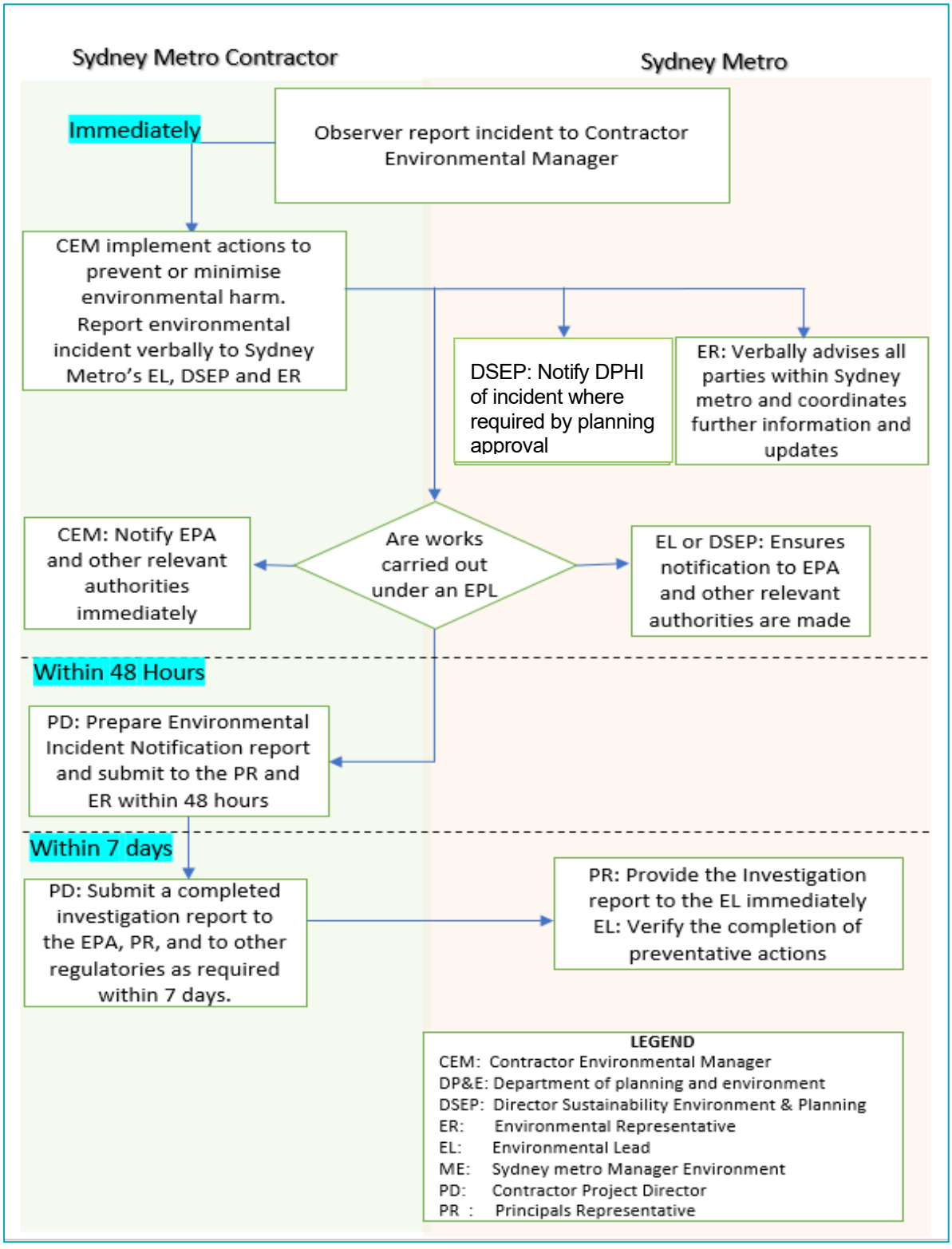


Figure 11: Sydney Metro Environmental Incident reporting procedure for Class 1 and Class 2 incidents

Business

Environmental Incident & Non-compliance Notification Report

This Environmental Incident and Non-compliance Notification Report supports the SM-17-00000096 Environmental Incident and Non-compliance Reporting Procedure, which is part of the Sydney Metro Environmental Management System (EMS). The EMS is described in the SM-23-00895405 Environmental Management System Framework.

This form is to be completed by Sydney Metro Contractors to report environmental incident and non-compliance events in accordance with SM-17-00000096 Environmental Incident and Non-compliance Reporting Procedure.

Record only factual information that you know to be correct. Do not make assumptions, be succinct and avoid speculation.

Section 1: General details			
Contractor			
Site			
Sydney Metro ID Code (If known)		**Contractor Reference ID** (If known)	
Event type (select both if the event is both an incident and non-compliance)	☐ **Incident** (Complete sections 2 - 4)	☐ **Non-compliance** (Complete sections 2, 3 & 5)	

Section 2: Event details			
Date of incident or non-compliance		**Time of incident or non-compliance**	

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Date contractor became aware of incident or non-compliance		**Non-compliance completion date** (where applicable)	
Date of notification to Sydney Metro		**Time of notification to Sydney Metro**	
Method of notification			
Notification received by: (Name)			
Notification received by: (Position)			
Date of notification to NSW Planning:			

Section 3: Event type (choose one)		
☐ **Air Quality** (e.g. dust or odour emission, excessive exhaust from plant or equipment)	☐ **Heritage** (e.g. damage/disturbance to heritage item/object/place)	☐ **Noise & Vibration** (e.g. exceedances of noise and vibration limits)
☐ **Flora and Fauna** (damage/harm to species /habitat/ecological community)	☐ **Spills and Leaks** (e.g. escape of fluids from containers)	☐ **Traffic, Transport & Access** (e.g. issues regarding the management of traffic flow)
☐ **Soil and Water** (events where harmful materials escape into soil or discharge to any onsite or offsite waterway)	☐ **Community, Stakeholder and Business** (e.g. events causing impacts on community amenity/property)	☐ **Waste & Spoil** (e.g. disposal causing environmental harm or improper stockpile management)
☐ **Management Systems** (e.g. Non-Compliance with project approval, or a CEMP requirement)		

Section 4: Environmental incident

Incident details

Incident Classification		☐ Class 3	☐ Class 2	☐ Class 1
Probable Impact Duration	☐ Short term (< 1 week)	☐ Medium term (< 3 months)	☐ Long term (>3 months)	☐ Permanent
Is the incident notifiable? (Where significant off-site impacts on people or the biophysical environment occurs this incident is also notifiable to DPHI)			☐ Yes ☐ No	

Incident: Circumstances and corrective actions

Exact location (address, chainage, nearest cross street, landmarks etc., attach sketch if appropriate.)	
Circumstances (Outline the circumstances of the Incident leading up to the event and detail the activity being conducted)	
Corrective actions (Actions taken immediately to address the cause of environmental harm)	

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Incident: Other relevant information (pollution incidents only)			
Pollutant			
Quantity or volume		**Concentration**	
Location of pollution (If different from the exact location of the event, also describing the extent of the pollution)			
Incident: Notification to relevant authorities (notifiable incidents only)			
Relevant Authorities to be notified (relevant information to be given in this notification is contained within this form)	**Incident Observer immediate verbal notification made to:** ☐ Sydney Metro Nominated Environmental Representative ☐ Principal Contractor's Environment Manager **Sydney Metro Nominated Environmental Representative immediately notified:** ☐ Local Authority (Council) ☐ EPA (through the Pollution Hotline on 131 555) ☐ Ministry of Health ☐ WorkCover Authority **As soon as possible following immediate notification requirements:** ☐ Department of Planning, Housing and Infrastructure ☐ Independent Environmental Representative		
Relevant Authority Notification made by (Name)			
Relevant Authority Notification made by (Position)			
Date of notification		**Time of notification**	
Incident: Investigation details			
Investigation details (Actions taken immediately to prevent or minimise environmental harm)			

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Report due date		**Allocated to**	
Comments			
Relevant approval(s)		**Relevant condition(s)**	
Action(s) required for closure (Where an individual is assigned an action to close they must notify the Nominated Environmental Representative once this is achieved)			
Assigned to		**Status**	☐ Open ☐ Close immediately
Due date			

Section 5: Non-compliance			
Relevant approval(s)		**Relevant condition(s)**	
Description of non-compliance			

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Description of the impact of the non-compliance (i.e. what was the impact of the non compliance? was it administrative only? was it a one off event or ongoing over a period of time? etc.)			
Corrective and preventative action(s) required for closure (Where an individual is assigned an action to close they must notify the nominated Environmental Representative once this is achieved)			
Assigned to		**Status**	☐ Open ☐ Close immediately
Due date			

Section 7: Signoff	
Signature	
Name	
Position	
Mobile	
Email	

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Attachment C: Spill Response Procedure

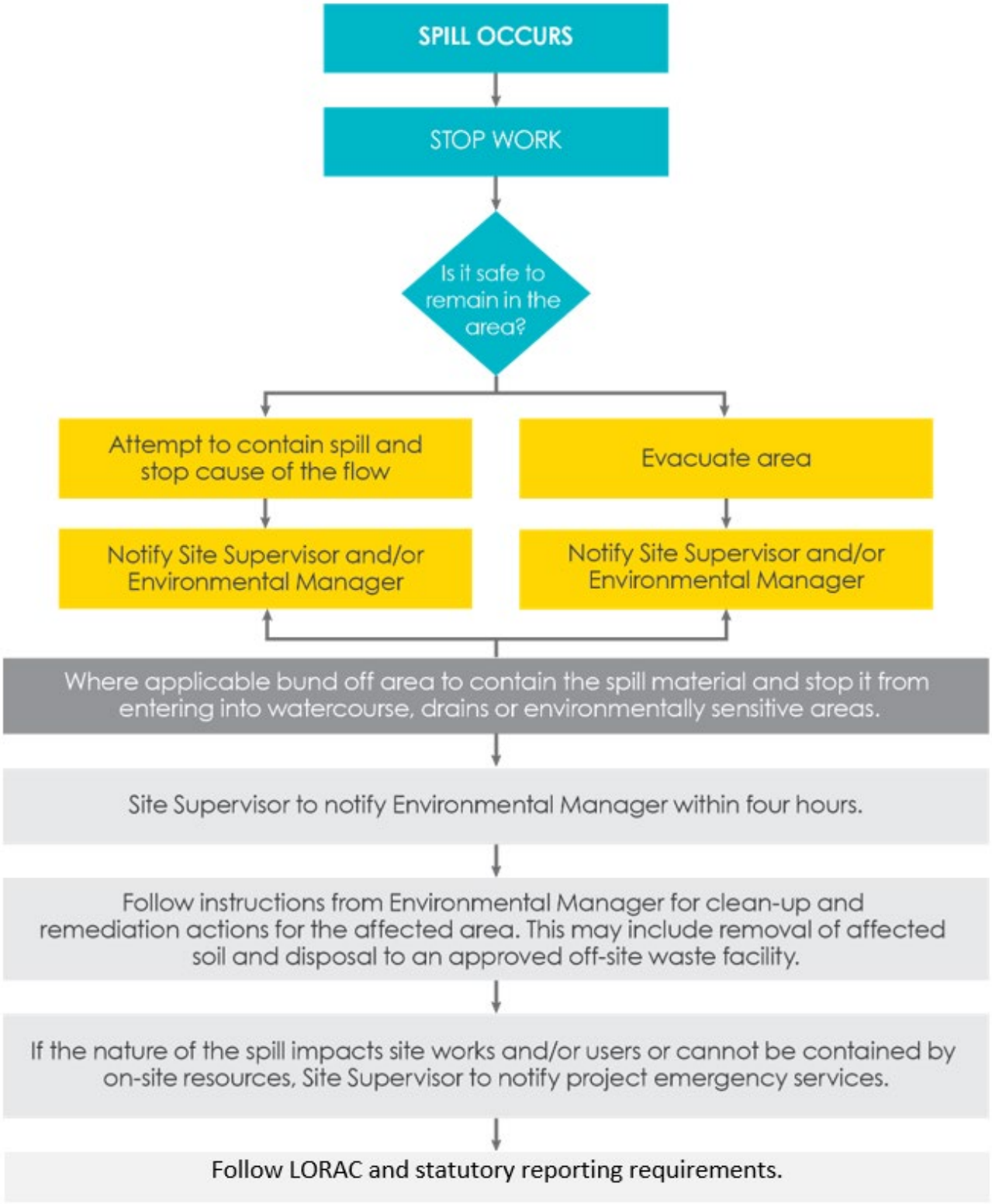


Figure 12: Spill Response Procedure

Attachment D: Construction Environmental Management Plan Flowchart

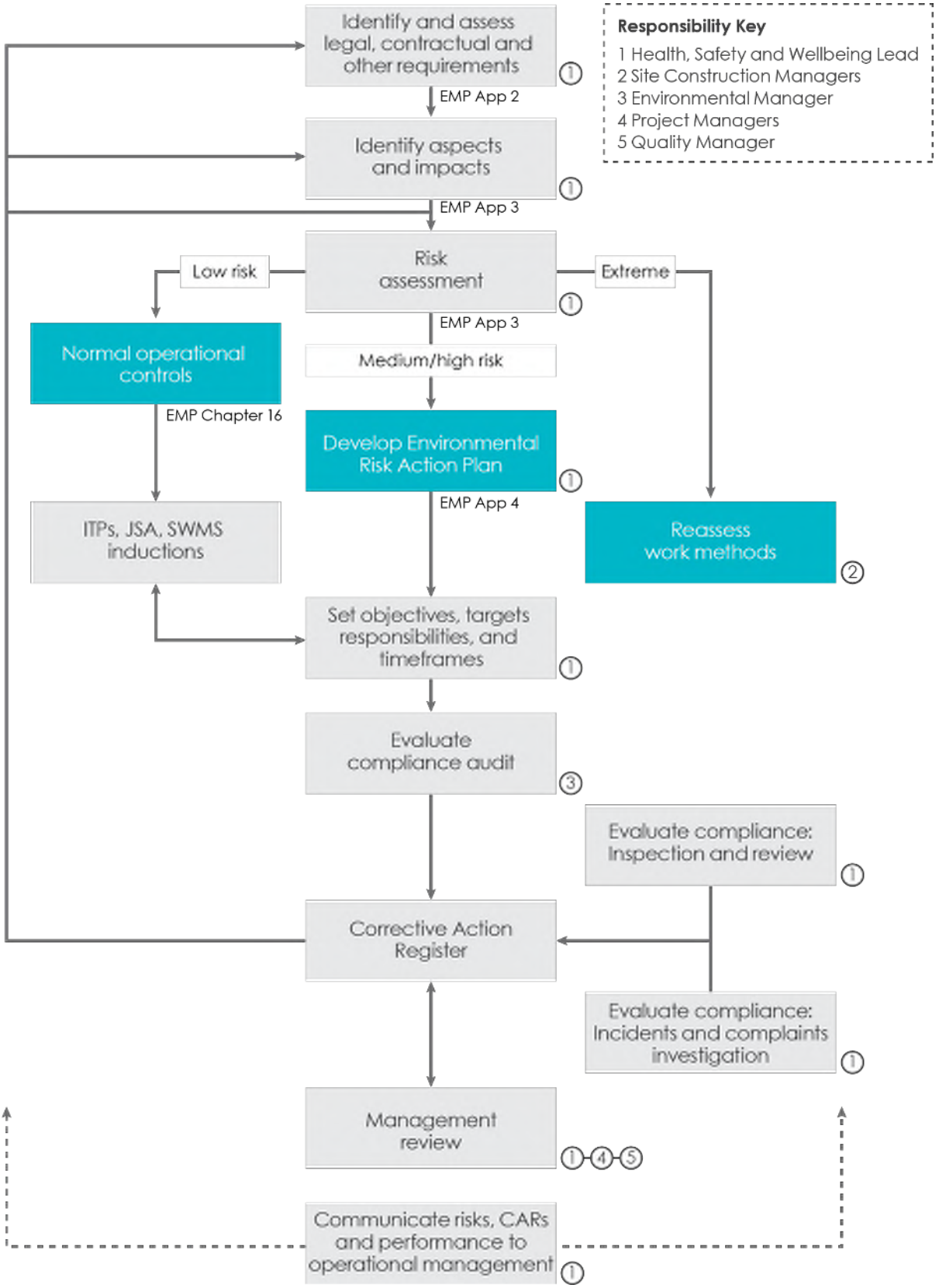


Figure 13: CEMP Flowchart

Attachment E: Legal and Other Requirements

Table 18 details the legal and other requirements relevant to the Sydney Metro WSA AEW Footbridge St Marys Works. Access to this legislation is available through Environment Essentials.

Table 18: Legal and other requirements

Legal and other requirements	Summary of obligations	Relevance
Environmental planning legislation		
Environmental Planning and Assessment Act 1979 (NSW) (EP&A Act)	This Act establishes a system of environmental planning and assessment of development proposals for the state.	High relevance. The requirements, conditions and obligations from the CSSI Approval, generally incorporated in the CEMP.
Local Government Act 1993 (NSW) *Local Government (General) Regulation 2005* (NSW)	The Local Government Act and Local Government (General) Regulation provide a legal framework for an environmentally responsible system of local government, including the responsibility to administer various regulatory systems (such as environmental planning, development consents and conditions of approval).	High relevance. Local Council has powers to control local issues on land and with infrastructure under their control and management. The environmental planning conditions also need to consider local council requirements.
Roads Act 1993 (NSW) *Roads (General) Regulation 2000* (NSW)	This Act and Regulation primarily provide for the opening and closing of public roads; identification of road boundaries and road widening; road levels; classification of public roads; road work; protection of public road and regulation of traffic; and regulation of work, structures and activities.	Medium relevance. This Act is an administrative Act for Roads and Maritime Services (RMS) and has medium relevance to carrying out the works, particularly in relation to the regulation of roads under RMS control.
Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act)	The main purpose of this Act is to protect the environment, especially those aspects that are of national environmental importance, and to promote ecological sustainable development. The Act binds the Crown. It dictates not to take, use, keep or interfere with nationally significant cultural and natural resources, protected wildlife and protected plants without approval.	Low relevance. This Act is of low relevance on the works as the Initial Project is unlikely to affect Matters of National environmental Significance (MNES) and referral is not required.
Land and Environment	The Land and Environment Court is constituted under this Act. The jurisdiction of the court is divided into numerous classes. The relevant classes for the works cover	High relevance. This Act will only apply to the works if the project were to be prosecuted for an environmental offence.

Legal and other requirements	Summary of obligations	Relevance
Court Act 1979 (NSW)	matters such as the prosecution for offences under various environmental legislation and to appeal against conditions of approvals, permits or orders.	
National Greenhouse and Energy Reporting Act 2007 (Cth)	Corporations emitting more than 50kT of carbon dioxide–equivalent units are required to register and report their Scope 1 and Scope 2 emissions for all facilities in which they have operational control. Facilities emitting more than 25kT of carbon dioxide–equivalent units must register and report Scope 1 and Scope 2 emissions.	High relevance. Laing O'Rourke Australia is a registered entity under this Act. As such, where Laing O'Rourke has operational control of a facility or activity associated with the works, the Scope 1 and 2 emissions must be reported by Laing O'Rourke. This includes the collation and reporting of subcontractors' site emissions.
Contaminated land legislation		
Contaminated Land Management Act 1997 (NSW)	This Act provides a process to investigate and remediate land that has been contaminated and presents a significant risk of harm to human health. Section 60 of the Act – Duty to Report Contamination – applies to owners of land and persons who become aware their activities have contaminated the land.	Medium relevance. This Act will be relevant in relation to potential or actual contaminated ground found during construction activities.
Fire control legislation		
Rural Fires Act 1997 (NSW)	This Act is intended to prevent, mitigate and suppress bushfires and other fires. It places a duty on Laing O'Rourke as the occupier of the site to extinguish fires during bushfire danger periods or if unable to do so notify appropriate firefighting authorities of the existence of the fire and its location.	Medium Relevance. The project site is not located within Bushfire Prone Lands. Hot Works Permits required for any works with potential to start a fire and no hot works to be undertaken during a total fire ban.
Hazardous substances legislation		
Environmentally Hazardous Chemicals Act 1985 (NSW)	This Act prohibits the manufacturing, processing, keeping, distributing, conveying, using, selling or disposing of an environmental hazardous chemical or waste (prescribed activity) except under the provisions of a chemical control or a licence. The EPA is required to prepare inventories of environmentally hazardous chemicals and declared chemical wastes.	Low relevance. It is not anticipated any environmentally hazardous chemicals or declared chemical waste will be used or stored on site. The Act therefore has little relevance to the works other than the need to remain aware of the existence of registers of declared chemical wastes and environmentally hazardous chemicals.

Legal and other requirements	Summary of obligations	Relevance
Dangerous Goods (Road and Rail Transport) Act 2008 (NSW)	This Act regulates the transport of dangerous goods by road and rail in order to promote public safety and protect property and the environment. The transport of dangerous goods is required to be appropriately licenced (both vehicle and driver). Depending on the quantities being transported, the Act outlines specific requirements for including appropriate placards on the transport vehicle, emergency procedures, PPE, manifest documentation and fire extinguishers.	Medium relevance. This Act is relevant to the transport of dangerous goods to and from the site. The works will require the use of a variety of dangerous goods. Laing O'Rourke will need to review and ensure dangerous goods requirements are addressed where transported by our vehicles, plant and equipment.
Water Management Act 2000 (NSW) *Water Management (General) Regulation 2004* (NSW)	This Act and Regulation provide for the protection, conservation and ecologically sustainable development of water sources of the state and in particular the need to protect, enhance and restore water sources and their associated ecosystems.	Low relevance. This Act has low relevance at this time to the works on the Initial Project, which do not involve any water use or water management works, flood works, controlled activities or aquifer interference. Drainage from the new structure will be connected to the existing Council drainage system.
Dams Safety Act 1978 (NSW)	This Act constitutes the Dams Safety Committee and confers and imposes on the committee functions relating to the safety of certain prescribed dams.	No relevance. It is unlikely any action in respect to these works will endanger the safety of any prescribed dam.
Coastal Protection Act 1979 (NSW)	This Act requires public authorities to notify the Coastal Council of NSW of any information, proposed activity or work that in the opinion of the public authority is relevant to the exercise of the function of the Coastal Council. It further empowers the Minister for the Department of Commerce to require public authorities to obtain consent prior to carrying out development in the coastal zone or giving consent to a person to occupy or carry out development in the coastal zone.	No relevance. The works are not located in areas associated with this Act.
Biodiversity Conservation Act 2016 (NSW) (BC Act)	The new BC Act repeals the *Threatened Species Conservation Act 1995* (NSW), the *Nature Conservation Trust Act 2001* (NSW) and the animal and plant provisions of the *National Parks and Wildlife Act 1974* (NSW)	Medium relevance. The Act regulates the protection of native vegetation, plants and animals. The works are only approved to impact native vegetation in accordance with the project

Legal and other requirements	Summary of obligations	Relevance
	and is the new prevailing legislation within NSW. The Act and Regulation provide for the conservation and management of native vegetation, including requiring development approvals for clearing of native vegetation.	approvals. Impacts to native animals must also be in accordance with the project approvals.
Biosecurity Act 2015 (NSW)	This Act provides for the classification and control of noxious weeds.	High relevance. Laing O'Rourke must ensure that weeds are effectively managed to meet the requirements of the project approvals.
National Parks and Wildlife Act 1974 (NSW)	This Act provides for the protection and preservation of Aboriginal artefacts. Discovery of material on site suspected as being of Aboriginal origin must be reported and protected pending assessment and direction by the Principal's Representative.	Low relevance. It is unlikely that Aboriginal artefacts will be discovered within the construction area. The only relevance would be if previously unknown artefacts were discovered during construction.
Fisheries Management Act 1994 (NSW)	This Act is applicable to all waters within the state, including private and public waters and all permanent and intermittent waters. The Act is most relevant in respect to maintaining water quality and ensuring no polluted water from site works enters streams, creeks and waterways. In addition, this Act has relevance for the removal of marine vegetation.	Low relevance. The Project is unlikely to impact any waterways relevant to this Act. Along with the POEO Act, water discharging from the site must not pollute the adjacent streams or watercourses.
Marine Pollution Act 1987 (NSW)	This Act creates offences for discharges of oil, oily mixtures and noxious liquid substances from ships into state waters.	No relevance. The site is not located adjacent to state waters and may involve the use of applicable vessels.
Water Act 1912 (NSW)	This Act provides for licences to extract water for construction purposes either from surface or artesian sources. Should construction water be extracted from surface sources (other than sedimentation ponds) or artesian sources, a licence will be required.	Low relevance. It is not proposed that construction water will be obtained from surface sources (such as creeks and lakes) or other sources.
Heritage Act 1977 (NSW)	This Act provides for the preservation and conservation of heritage items such as buildings, works, relics and places of historic interest or scientific, cultural, social, natural or aesthetic archaeological, architectural, significance. Under this Act, a relic means any deposit, object or material evidence that is 50 or more years old and relates to the settlement of the area (not being an	High relevance. This Act regulates heritage impacts and applies to the Project. Mitigation measures from approvals under this Act for State-listed stations will be incorporated into the CEMP, design and construction methodologies.

Legal and other requirements	Summary of obligations	Relevance
	Indigenous settlement). It is an offence under this Act to wilfully and knowingly damage or destroy items of heritage value. It instructs not to demolish, damage, move or develop around any place, building, work, relic, moveable object, precinct or land that is the subject of an interim heritage order or listing on the State Heritage Register or heritage listing in a Local Environmental Plan without approval.	
Wilderness Act 1987 (NSW)	This Act provides for the permanent protection and proper management of wilderness areas and promotes the education of the public in the appreciation, protection and management of wilderness. The Act and associated Regulations provide a mechanism for the identification and declaration of wilderness areas.	No relevance. The works are not within or immediately adjacent to a declared wilderness area.
Plantations and Reafforestation Act 1999 (NSW)	This Act is intended to facilitate the reforestation of land and development of timber plantations. It provides codified environmental standards together with a streamlined integrated scheme for the establishment, management and harvesting of timber and other forest plantation products.	No relevance. The work under this contract is not located within or adjacent to reforested or plantation forest land.
Australian Heritage Council (Consequential & Transitional Provisions) Act 2003 (Cth) *Australian Heritage Council Act 2003* (Cth)	This Act repealed the *Australian Heritage Commission Act 1975* (Cth). It establishes the Australian Heritage Council. The Council is required to identify places to be included in the National Estate and to maintain a Register of the National Estate of places.	No relevance. There are no locations listed on the Register of the National Estate of places.
Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Cth)	This Act provides for the preservation and protection from injury or desecration of areas and objects of particular significance to Indigenous peoples. Areas and objects can be protected by Ministerial Declaration and it is then an offence to contravene such a declaration.	Low relevance. It is unlikely that Aboriginal artefacts will be discovered within the construction area. The only relevance would be if previously unknown artefacts were discovered during construction.

Legal and other requirements	Summary of obligations	Relevance
		No areas or objects within the Initial Project have been identified as being subject to such a declaration.
Ozone Protection Act 1989 (NSW)	This Act provides for a system of controls and regulates and prohibits the manufacture, sale, distribution, use, emission, recycling and disposal of stratospheric ozone–depleting substances and articles that contain these substances. Only people appropriately qualified in accordance with this Act can undertake servicing and maintenance of this type of equipment.	Low relevance. This Act relates to the use of refrigerators and air conditioning units in site buildings and vehicles that still contain chlorofluorocarbons (CFCs). Such items are unlikely to be found on site.
Protection of the Environment Operations Act 1997 (NSW) (POEO Act)	This Act is of most relevance to work being carried out under this contract. It integrates into one Act all the controls necessary to regulate pollution and reduce degradation of the environment, provides for licensing of scheduled development work, scheduled activities and for offences and prosecution under this Act.	High relevance. The Act provides for the issuing of environment protection licences and the regulation of pollution. Section 148 of the Act requires a pollution incident causing or threatening material harm to the environment to be notified to the NSW Environment Protection Authority and other authorities immediately.
Sydney Water Act 1994 (NSW)	This Act establishes the Sydney Water Corporation as a statutory state-owned corporation. The functions of the Sydney Water Corporation are to supply and store water, provide sewerage services, provide stormwater drainage and dispose of waste water within the corporation's area of operations.	Low relevance. Any modification to existing infrastructure would be agreed with Sydney Water.
Sydney Water Catchment Management Act 1999 (NSW)	This Act establishes the Sydney Catchment Authority as a statutory corporation representing the Crown. The role of the Sydney Catchment Authority is to manage and protect the catchment areas and catchment infrastructure works, be a bulk water supplier and to regulate activities within or affecting the catchment areas.	Low relevance. The works will not cause an impact to areas regulated by the Sydney Catchment Authority.
Pesticides Act 1999 (NSW)	This Act and Regulation establish a legislative framework to regulate the use of pesticides. They have the objective to promote the protection of human health, the environment, property and trade in relation to pesticides. It	Low relevance. Any pesticides on the works will be used by personnel trained and qualified as necessary to meet the requirements of the Act.

Legal and other requirements	Summary of obligations	Relevance
Pesticides Regulation 1995 (NSW)	is an offence under this Act and Regulation to wilfully or negligently misuse pesticides.	
Waste Avoidance and Resource Recovery Act 2001 (NSW)	The Act encourages the most efficient use of resources and reduction in environmental harm in accordance with the principles of ecological sustainable development. The Act provides for the making of policies and strategies to achieve these ends. It is also an offence under the POEO Act to wilfully or negligently dispose of waste in a manner that harms or is likely to harm the environment.	High relevance. The relevance of the Act to the works are to implement the strategies by adopting the hierarchy of avoidance; avoidance of unnecessary resource consumption; resource recovery (including reuse, reprocessing, recycling and energy recovery); and disposal (as a last resort).

Attachment F: Construction Environmental Control Procedures – Environmental Risk Action Procedures

Significant environmental issues will be managed according to Environmental Risk Action Procedures (ERAPs). Control measures documented in the ERAPs will be guided by the requirements of the Environmental Primary Standards and specific conditions and mitigation measures. The highest level of control will apply in the event of any inconsistency. ERAPs in this CEMP is developed in accordance with the environmental management and mitigation measures given in the various planning approval documents for this work package including Sydney Metro WSA CSSI 10051 MCoA, REMMs, CEMF Requirements and TfNSW Standard Requirements. ERAPs and Procedure in this CEMP substitutes the issue specific Sub-plans, as Sub-plans in CEMP is not a requirement under the conditions of approval for this project.

ERAPs will include:

- Noise and Vibration Management;
- Air Quality and Dust Management;
- Waste and Resources Management;
- Spoil Management;
- Soil and Water Quality Management;
- Hazardous and Contaminated material Management;
- Concrete Washout Management;
- Delivery and Storage of Chemicals, Fuels and Oils, including Dangerous Goods Requirements;
- Traffic Management;
- Biodiversity Management;
- Visual Amenity Management;
- Socio-Economic Land use and Property;
- Heritage Management;
- Heritage Management Procedure (Attachment R);

Noise and Vibration Management	
Objective	To comply with contractual requirements and ensure that noise and vibration from construction activities do not cause environmental nuisance and to: • Minimise unreasonable noise and vibration impacts on residents and businesses; • Avoid structural damage to buildings or heritage items as a result of construction vibration; • Undertake active community consultation and maintain positive, cooperative relationships with local residents and sensitive receivers; • Maintain positive, cooperative relationships with local businesses, schools, childcare centres, local residents and building owners.
Targets	• No valid noise or vibration complaints resulting from construction works; • No unreasonable noise or vibration.
Legal, contractual and other requirements	• Sydney Metro WSA Construction Noise and Vibration Standards; • CSSI 10051 MCoA E37- E49, E51 - E57 and CEMF 3.6 a, 3.6 b, 3.6 c, 8.1 a, 8.2 b, 8.2 c, 8.2 d, 8.3; • Interim Construction Noise Guidelines (DECC,2009), Assessing Vibration: a technical guideline (DEC, 2006); • Sydney Metro Construction Noise and Vibration Standard (CNVS); • Sydney Metro Western Sydney Airport Out of Hours Protocol approved by Department of Planning and Environment; • Standard Construction hours, will be restricted to 7:00 am to 6:00pm Monday–Friday and 8:00am to 1:00pm Saturdays and at no time on Sundays and Public holidays; • POEO Act 1977; • Protection of the Environment Operations (Noise Control) Regulation 2000; • Local Government Act 1993; • AS 2436 Guide to Noise Control on Construction, Maintenance and Demolition Sites; • BS7385 “Evaluation and Measurement of Vibrations in Buildings” Part 2 – 1993; • German Standard DIN 4150-3: Structural Vibration;

Noise and Vibration Management	
	• Detailed Noise and Vibration Impact Statement, SLR Consulting Australia Pty Ltd, July 2022.
Controls (means and resources)	<u>Pre-Construction:</u> • Construction noise and vibration mitigation measures shall be implemented through the CEMP, in accordance with Sydney Metro - WSA Construction Noise and Vibration Strategy; • A Detailed Noise and Vibration Impact Statement is to be prepared for noise-intensive construction sites and/or activities to ensure the adequacy of the noise and vibration mitigation measures, as per condition E47. The DNVIS is attached in Attachment S. The DNVIS provides a breakdown of the work tasks, potential impacts associated with each task; and standard and additional mitigation measures; • Specifically, Detailed Noise and Vibration Impact Statements will be prepared for works proposed to be undertaken outside of standard construction hours and where the noise is predicted to be above NML or vibration above criteria as outlined in CoA E47 to support applications to undertake out of hours works; • Where work outside the hours nominated above is required, OOHW approval will be gained prior to the commencement of works, approved by the ER and SM WSA; • Appropriate respite periods for the OOHW must be identified in consultation with the community at each affected location on a regular basis. This consultation must include (but not be limited to) providing the community with: o A progressive schedule for periods no less than three (3) months, of likely out-of-hours work; o A description of the potential work, location and duration of the out-of-hours work; o The noise characteristics and likely noise levels of the work; and o Likely mitigation and management measures which aim to achieve the relevant NMLs • The outcomes of the community consultation, the identified respite periods and the scheduling of the likely OOHW will be provided to the ER, EPA and the Planning Secretary prior to the out-of-hours work commencing. 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 RBL at any residence. • Potentially affected pre-schools, schools, universities and any other affected permanent educational institutions shall be consulted in relation to noise mitigation measures to identify any noise sensitive periods; • All residential receivers and industrial receivers will be notified about the upcoming works prior to works occurring out of standard hours in line with relevant Sydney Metro – WSA OCCS requirements; • Expected period of high noise are to be communicated to the community via letterbox drop and other means;

- Noise generating work in the vicinity of potentially affected community and other sensitive receivers resulting in noise levels above the NMLs will not be timetabled within sensitive periods, unless other reasonable arrangements are made;
- Condition surveys of buildings and structures near to excavations would be undertaken prior to the commencement of excavation, where appropriate;
- A Photographic dilapidation survey will be carried out where there is high potential of damage to the adjacent structures. When minimal risk of damage is identified, this will be communicated with the potentially affected receivers;
- Site offices, compounds and sheds will be located so as to have no negative impact on the noise amenity of nearby sensitive receptors;
- Layout of Construction site would consider the location of site access and egress points in relation to noise sensitive receivers. And aim to minimise the requirement for reversing, especially of heavy vehicles;
- Awareness training and information will be provided to project personnel in relation to the vibration requirements on the project and the need to minimise vibration when in close proximity to operational areas;
- A temporary protection plan to outline protection measures required for significant fabric during activities causing potential vibration impacts would be prepared prior to commencement of works;

<u>During Construction:</u>

- No work will be undertaken outside of standard working hours without prior approval. Standard construction hours are 7:00am to 6:00pm Monday- Friday, 08:00-1:00pm Saturdays, and at no time on Sundays and Public Holidays;
- LORAC are committed to comply to CoA E41 where works may occur outside of these hours under the following circumstances: Safety and Emergencies, Low Impact, By Approval, by Prescribed Activity, these are to be approved via the SM-WSA Out of Hours Application and OOHW Protocol;
- On becoming aware of the need for emergency work in accordance with (a)(ii) above, the ER, the Planning Secretary and the EPA must be notified of the reasons for such work. The Proponent must use best endeavours to notify as soon as practicable all noise and/or vibration affected sensitive land user(s) of the likely impact and duration of those work;
- One hour respite period would be implemented for every three-hour period of high noise generating activity, as required;
- Except as permitted by an EPL or approved in accordance with the OOHW Protocol, highly noise intensive work that result in an exceedance of the applicable NML at the same receiver must be undertaken between the hours of 8:00 am to 6:00 pm Monday to Friday; 8:00 am to 1:00 pm Saturday; and if continuously, then not exceeding three (3) hours, with a minimum cessation work of not less than one (1) hour;

Noise and Vibration Management	
	• All reasonable and feasible mitigation measures are to be applied when the following residential ground-borne noise levels are exceeded: (a) evening (6:00 pm to 10:00 pm) — internal LAeq(15 minute): 40 dB(A); and (b) night (10:00 pm to 7:00 am) — internal LAeq(15 minute): 35 dB(A) (CoA D44); • Industry best practice construction methods is to be implemented where reasonably practicable to ensure that noise and vibration levels are minimised around sensitive land use(s). Practices may include, but are not limited to (CoA D46): (a) use of regularly serviced low sound power equipment; (b) at source control, temporary noise barriers (including the arrangement of plant and equipment) around noisy equipment and activities such as rock hammering and concrete cutting; (c) use of non-tonal reversing alarms; and (d) use of alternative construction and demolition techniques and/or methodologies. • Perimeter site hoarding would be designed with consideration of on-site heavy vehicle movements with the aim of minimising sleep disturbance impacts; • Noise and vibration monitoring would be undertaken during noise intensive activities and where vibratory equipment is to be used; • Vibration monitoring will be conducted during vibration generating activities that have the potential to impact on Heritage items to monitor vibration in relation to the identified screening criteria to prevent cosmetic damage. In the event that the vibration testing and attended monitoring shows that the preferred values for vibration are likely to be exceeded, the Proponent must review the construction methodology and, if necessary, implement additional mitigation measures. Such measures must include, but not be limited to, review or modification of excavation techniques; • Where practical and reasonable to do so, 'less intrusive' or 'less vibration' construction techniques would be used. This may include vacuum excavation techniques within proximity to the structures; • The minimum sized equipment necessary (i.e. smaller hydraulic hammers) are to be implemented where reasonable and feasible. Noting, if a large hydraulic hammer (18-34t excavator) is required, vibration monitoring will be required to confirm that the vibration criteria is not exceeded; • Construction adheres to the safe working distances presented in Table 7-1 of the DNVIS in Attachment S (shown below); • Continuous vibration monitoring with alarms (i.e. audible and visible / SMS) at the nearest sensitive receivers (including heritage listed properties) will be undertaken whenever vibration generating activities need to take place inside the safe-working distances; • Where exceedances occur, they will be managed in accordance with the Sydney Metro CNVS;

Noise and Vibration Management	
	• No blasting will be carried out under this approval; • All plant will be maintained in accordance with the manufacturer's requirements; • Plants used intermittently will be throttled and shutdown when not required; • Noise-generating equipment will be orientated away from sensitive areas; • No swearing, shouting, dropping of materials from heights; • Install noise blankets around generators to minimise noise on site where required; • Aim to schedule nosiest work activities during standard hours where practical and feasible. Where not possible to schedule noisy works during standard hours, to schedule noisy activities nearest to residential receivers during day time and evening hours where possible; • Non-tonal reversing beepers (or an equivalent mechanism) shall be fitted and used on all construction vehicles and mobile plant regularly used on site (i.e., greater than one day) and for any out of hours work; • Loading and unloading activities will be carried out away from sensitive areas and during designated construction hours; • On-site generators and auxiliary power sources used during construction will be positioned away from existing buildings to buffer noise and vibration; • Regular checks will be undertaken to ensure all equipment and vehicles are in good working order and are operated correctly. Checking should include engine covers, defective silencing equipment, rattling components and leakages in compressed air lines; • Minimum Working distances for Vibration intensive activities (Extract from the FMS DNVIS in Attachment S) is given in the below table.

Table 7-1: Safe Working Distances of Vibration Intensive Equipment

Plant Item	Rating/Description	Minimum Distance		
		Cosmetic Damage		Human Comfort (NSW EPA Guideline)
		Residential and Light Commercial (BS 7385)	Heritage Items (DIN 4150, Group 3)	
Vibratory Roller	<50 kN (1–2 tonne)	5 m	11 m	15 m to 20 m
	<100 kN (2–4 tonne)	6 m	13 m	20 m
Small Hydraulic Hammer	300 kg (5 to 12 t excavator)	2 m	5 m	7 m
Medium Hydraulic Hammer	900 kg (12 to 18 t excavator)	7 m	15 m	23 m
Piling Rig – Bored	≤ 800 mm	2 m (nominal)	5 m	7 m
Jackhammer	Hand held	1 m (nominal)	3 m	2 m

The minimum working distances are indicative only and will vary depending on the particular item of plant being used, the type and age of the receiving build, the dominant frequency of the construction vibration levels and the local ground conditions. Where vibration activities are to occur within the minimum distances alternate methodology should be considered where feasible and reasonable or attended vibration measurements are undertaken at the start of works to verify the site-specific minimum working distances.

- The following receivers nearby the FSM project site have been identified in the DNVIS as potentially containing vibration sensitive scientific or medical equipment, the following location has been marked as potentially sensitive to vibration on the ECMs:
  - Emerald Medical Centre - 65A Queen Street, Belar St, St Marys NSW 2760;
- Vibration limits for the operation of sensitive scientific and medical equipment should be taken from manufacturer's data. Where this is not available the Vibration Criterion (VC) curves outlined in the Sydney Metro CNVS shown in Table 5-5 be of the DNVIS as follows can be used.

Table 5-5: VC Curves for Vibration Sensitive Equipment

Criterion Curve	Max Level (µm/s, RMS)[1]	Detail Size (Microns)[2]	Description of Use
VC-A	50	8	Adequate in most instances for optical microscopes to 400X, microbalances, optical balances, proximity and projection aligners, etc.
VC-B	25	3	An appropriate standard for optical microscopes to 1000X, inspection and lithography equipment (including steppers) to 3 micron line widths.
VC-C	12.5	1	A good standard for most lithography and inspection equipment to 1 micron detail size.
VC-D	6	0.3	Suitable in most instances for the most demanding equipment including electron microscopes (TEMs and SEMs) and E-Beam systems, operating to the limits of their capability.
VC-E	3	0.1	A difficult criterion to achieve in most instances. Assumed to be adequate for the most demanding of sensitive systems including long path, laser- based, small target systems and other systems requiring extraordinary dynamic stability.

Note 1: As measured in one-third octave bands of frequency over the frequency range 8 to 100 Hz.

Note 2: The detail size refers to the line widths for microelectronics fabrication, the particle (cell) size for medical and pharmaceutical research, etc. The values given take into account the observation requirements of many items depend upon the detail size of the process.

Heritage listed buildings and structures should be considered on a case-by-case basis but as noted in the Sydney Metro CNVS, should not be assumed to be more sensitive to vibration, unless structurally unsound. In accordance with CoA

	E43, where a heritage building is deemed to be sensitive (following inspection), a more conservative cosmetic damage criterion of 2.5 mm/s peak component particle velocity (from DIN 4150) must be applied, refer **Table 5-1** (group 3). The following heritage structures have been identified nearby the project site with the potential for impacts: • St Marys Railway Station Group – State *Heritage Register* and *Penrith Local Environmental Plan 2010*. The St Marys railway buildings and structures buildings are good examples of the Colonial Georgian style of late nineteenth century railway architecture. These heritage structures are currently in use and/or classified with 'Good' physical condition on the state heritage inventory and are therefore not deemed structurally unsound, or more sensitive to vibration. Vibration monitoring limits will be applied in accordance with the recommendations specified in the FSM DNVIS. As outlined in the Sydney Metro CNVS, for most construction activities involving intermittent vibration sources (e.g. rock breakers, piling rigs, vibratory rollers and excavators) the predominant vibration energy occurs at frequencies greater than 4 Hz (and usually in the 10 Hz to 100 Hz range). On this basis, a conservative vibration damage screening level (Peak Particle Velocity [PPV]) per receiver type is given below: • Reinforced or framed structures: 25.0 mm/s; • Unreinforced or light framed structures: 7.5 mm/s. The St Marys Station: Enabling Works – Heritage Management Procedure (Attachment R) also provides conservative general vibration screening levels (Peak Particle Velocity [PPV]) for heritage buildings: • Reinforced or framed structures: 10 mm/s; • Unreinforced or light framed structures: 5 mm/s. At locations where measured vibration levels are greater than shown above, a more detailed analysis of the building structure, vibration source, dominant frequency and dynamic characteristics of the structure would be required to determine the applicable safe vibration levels.
Responsibilities	• The Construction Manager and site supervisor will ensure construction activities comply with these requirements and implement the control measures; • The Construction Manager and Environmental Manager will ensure approval to work outside approved hours is obtained; • Community and Stakeholder advisor would inform all residential receivers and industrial receivers on the upcoming works prior to works occurring out of standard hours;

Noise and Vibration Management	
	• Site Environmental representative would undertake noise and vibration monitoring during works and ensure noise and vibration level lies within the prescribed levels.
Timeframe	• Duration of site works;
Monitoring and reporting	• Weekly inspections to be recorded on the Environmental Inspection Report - Environmental Advisor & Fortnightly by ER; • Complaints to be recorded in Sydney Metro Complaints Manager - Community and Stakeholder Advisor; • Daily inspection (pre-start) checks and regular servicing of equipment to be carried out - Site Supervisor; • Noise and vibration monitoring will be undertaken in accordance with the Sydney Metro WSA Out of Hours Works Protocol and Sydney Metro WSA Construction Noise and Vibration Standard - Environmental Advisor/Coordinator; • Records of noise and vibration monitoring results against appropriate NMLs and Vibration Criteria would be maintained by the Environmental Advisor; • Records of community enquiries and complaints, and the LORAC's response would be maintained by the Community and Stakeholder Advisor; • Monitoring results will be issued to the Planning Secretary and ER as requested - LORAC Environmental Advisor through Sydney Metro WSA.

Air Quality and Dust Management	
Objective	• To comply with contractual requirements and ensure that dust and other air emissions from construction activities do not cause impacts on sensitive receivers and equipment; • To minimise gaseous and particulate pollutant emissions from construction activities as far as feasible and reasonable; • Identify and control potential dust and air pollutant sources.
Targets	• No valid dust complaints from construction works; • No dust impacting on off-site activities or surrounding residences;

Air Quality and Dust Management	
	• No release of contaminants (such as odour or smoke) into the air; • Compliance with approval conditions.
Legal, contractual and other requirements	• POEO Act 1997 and *Local Government Act 1993;* • CSSI 10051 - MCoA E1, REMM AQ1 and CEMF Requirements 13.1a, 13.2a, 13.2b, 13.2c, 13.3a • Relevant planning approvals and associated documents (dependent on work package).
Controls (means and resources)	<u>Pre-Construction</u> • Plant and equipment would be maintained in a proper and efficient manner. Visual inspections of emissions from plant would be carried out as part of pre acceptance checks; • Non-road diesel plant and equipment should undergo pre-check and workplace acceptance form to be completed for all the plants entering the site. Emission standard for all the plants would be verified for compliance with US/EPA Emission standards; • Awareness training in the need to minimise dust during site inductions and toolbox talks. <u>During Construction</u> • Plant and equipment will be switched off when not in use; • Avoidance of usage of diesel- powered generators, instead electricity mains or battery powered equipment will be used; • Vehicle Management Plan would be developed for delivery of goods and materials; • Water suppression would be used for active work areas, stockpiles, to reduce wind-blown dust emissions; • Establishment and enforcement of speed limits to reduce dust generation; • Sealing of roads to reduce dust generation; ◦ The following best-practice odour management measures would be implemented during relevant construction works: • The extent of opened and disturbed contaminated soil at any given time would be minimised; • Temporary coverings or odour supressing agents would be applied to excavated areas where appropriate

Air Quality and Dust Management	
	• Regular monitoring would be conducted during excavation to verify that no offensive odours are detected beyond the site boundary; • Orientation of stockpiles away from sensitive areas and residents to ensure negligible or limited impact; • Minimisation of traffic on exposed areas by creating designated haul roads; • Covering of haul vehicles loads and closing of tail gates when operating on public roads; • Removal of mud from haul vehicles prior to entering public roads; • Removal of spilt mud by construction equipment or vehicles on public roads; • Dust-generating work during periods of high wind reprogrammed; • Maintenance of plant and equipment as per manufacturer's requirements; • Plant and equipment must be regularly inspected to ascertain that fitted emission controls are operating efficiently. <u>Post Construction</u> • Recording and addressing of all complaints as outlined in the Community Liaison Management Plan (CLMP) or similar; • Disturbed areas must be rehabilitated upon completion of demolition works by provision of protective ground cover such as mulches, vegetation, organic binders or dust retardants.
Responsibilities	• The Construction Manager to implement the requirements of this plan; • Site supervisor to inspect the works at regular intervals to identify areas of dust generation; • Site supervisor would be responsible for dust suppression for active work areas, stockpiles and unsurfaced haul roads; • Construction manager would develop a site-specific vehicle management plan for sustainable delivery of goods and materials; • LORAC Logistics personnel would be responsible for Pre-check of plants before acceptance to the site for plant condition and emission;
Timeframe	• Water tankers and other measures to be available at the commencement of earthworks; • Spilt mud and sediment to be removed from public roads prior to the end of each shift; • Duration of site works.

Air Quality and Dust Management	
Monitoring and reporting	• Regular visual monitoring of dust generation from work areas by the Site Supervisor. Site Hive data will be used for verification purposes only; • Meteorological conditions will be monitored by the Environmental Advisor and advise the site team for construction planning accordingly; • Environmental Advisor would maintain records of air quality and dust inspections undertaken and records of any meteorological condition monitoring; • Monitoring emissions from plant and construction vehicles periodically by the LORAC Logistics team (SELECT) to ensure they have appropriate emission controls and are being maintained correctly; • Weekly inspections to be recorded in INTELEX by the Environmental Advisor; • Worksite acceptance form to be completed for all plants as pre-acceptance criteria by the Site Supervisor; • Verifying the plants compliance with US/EPA emission standard by the Environmental Advisor/Coordinator; • Complaints to be recorded in INTELEX by Environmental Team.

Waste and Resources Management	

Objective	• To comply with contractual and legislative requirements and ensure that waste from construction activities does not have the potential to escape from the site and cause an environmental nuisance or harm;
	• To minimise the generation of waste throughout the project life-cycle;
	• The following Waste Management Hierarchy would be implemented;
	  ◦ Avoidance of unnecessary resource consumption;
	  ◦ Resource Recovery (including reuse, reprocessing, recycling and energy recovery);
	  ◦ Disposal of waste.

Targets	• No incidences where waste is stored in a position where it has the potential to move off site; • All off-site movements of waste will be tracked;

Waste and Resources Management	
	• The principles of the waste management hierarchy will be adopted where practicable; • A target of 95% by weight of construction waste will be reused or recycled (Sustainability Development Goals); • Waste will be minimised wherever possible.
Legal, contractual and other requirements	• CSSI 10051: MCoA E122 – E125, REMM WR1 – WR3 and CEMF Requirements 14.1a, 14.1b, 14.2a, 14.2b, 14.2c, 14,2d, 14.3a; • POEO Act 1997; • Protection of the Environment Operations (Waste) Regulation 2005; • *Waste Avoidance and Resource Recovery Act 2001;* • *Local Government Act 1993;* • Local Government (General) Regulation 2005.
Controls (means and resources)	<u>Pre-Construction</u> • Licensed waste contractors will be used to remove waste; • Do not overestimate quantities of materials required; • A material tracking system would be implemented for material transferred between construction sites. <u>During Construction</u> • All waste will be disposed of at a lawful facility. Note: A lawful facility includes one that has the appropriate development consent or environment protection licence and is complying with EPA-approved conditions and requirements; • Waste will be classified prior to disposal – refer to the NSW EPA Waste Classification Guidelines and transported to a licensed waste disposal facility; • The importation of waste and the storage, treatment, processing, reprocessing or disposal of such waste will be done in accordance with a Resource Recovery Exemption or Order (which is subject to a planning approval or exemption being issued to allow material to be placed on land) issued under the Protection of the Environment Operations (Waste) Regulation 2014;

Waste and Resources Management

- Waste must only be exported to a site licensed by the EPA for the storage, treatment, processing, reprocessing or disposal of the subject waste, or in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, or to any other place that can lawfully accept such waste;
- Excavated materials retained on site must be temporarily stored in a bunded area or with appropriate environmental controls in place to prevent sediment laden run-off, entering the stormwater system;
- Stockpiles and bins would be appropriately labelled, monitored and managed until being removed from the site;
- Skip bins will be used and there will be an adequate number of bins on site to hold all waste generated;
- Waste streams would be segregated to avoid cross-contamination of materials and maximise reuse and recycling opportunities;
- Housekeeping will be maintained and works areas of the project site would be kept clean and free of filter, including cigarette butts, at all times;
- Waste disposal permits and figures on the amount of waste that has been removed from site will be retained;
- No spreading of weed infested material on the corridor;
- Contaminated material is not to be reused within the project footprint and sent for appropriate disposal at licenced facility.
- Administering asbestos awareness training in the procedural protocols of asbestos identification for workers;
- Stopping works and contacting the appropriate Environmental Manager and construction personnel to manage the situation and commence an investigation if asbestos is identified in, for example, buildings, pipes, pits, or soil matrix;
- Engaging a Licensed Asbestos Assessor contractor to investigate, sample and identify the presence and type of asbestos where required;
- An Asbestos Removal Control Plan (ARCP) would be prepared by a Licensed removal contractor if required;
- Asbestos waste must be classified as Special Waste and it cannot be reused or recycled. Asbestos waste can only be transported to and disposed off at appropriately licensed waste receiving facilities. Any engaged asbestos transporters and facilities receiving asbestos waste in NSW weighing more than 100 kilograms, or consisting or more than 10 square metres of asbestos sheeting in one load must track and report this waste to the EPA using WasteLocate.
- Ensuring no works proceed or continue in the area until clearance and authorisation is given from Licensed Asbestos Assessor through that area, has been cleared, and it is safe to proceed.

Post Construction

Waste and Resources Management	
	• All waste must be removed from the site on completion of the works; • Records of the quantity and final location of all waste material will be retained.
Responsibilities	• The Environmental Coordinator will ensure waste is correctly stored, classified, recorded, tracked and minimised at all times; • The Project Manager will be accountable for ensuring lawful waste disposal; • All personnel will be responsible for ensuring waste is placed in the bins provided.
Timeframe	• Duration of site works.
Monitoring and reporting	• Skips will be monitored visually on daily basis by the site supervisor; • Weekly Environmental Inspections as recorded in INTELEX will be used to verify site waste practices – Environmental Advisor; • Waste Reporting for the project to Sydney Metro would be undertaken by LORAC Environmental Advisor at a frequency to be advised by Sydney Metro; • LORAC Environmental Coordinator would undertake Waste Reporting as part of the monthly sustainability reporting to Sydney metro and TfNSW sustainability manager.

Spoil Management	
Objective	To comply with contractual and legislative requirements and to: • Minimise spoil generation where possible; • Ensure that 100% reusable spoil from construction activities is beneficially reused on or off-site; • Manage spoil movements with consideration to minimising impacts to traffic, transport and sensitive receivers and does not have the potential to create an environmental nuisance or harm; • Spoil will be managed to avoid contamination of land or water; • Site contamination will be effectively managed to limit the potential risk to human health and the environment.

Spoil Management	
Targets	• There will be no incidences where spoil is stored in a position where it has the potential to move off-site; • Spoil will be classified as per EPA Waste Classification Guidelines (ENM, VENM, GSW, Special waste); • Opportunities to reuse the spoil within the site will be explored; • All off-site movements of spoil will be tracked and registered; • A target of 100% by weight of beneficial spoil will be reused or recycled (Sustainability Development Guidelines Target); • Beneficial spoil will be reused on site wherever possible; • The principles of the waste management hierarchy will be adopted.
Legal, contractual and other requirements	• Relevant planning approvals and associated documents (dependent on work package), including Sydney Metro-WSA CSSI 10051 - Specifically the Ministers Conditions of Approval, Revised Environmental Mitigation Measures, CEMF, CTMF, OCCS and the Staging Report; • CSSI 10051: MCoA A46, E124, E125, CEMF Requirements 3.5a, 6.1a, 6.2a, 6.2b, 6.3a; • TfNSW Sustainability Design Guidelines v 4.0; • *Protection of the Environment Operations Act 1997*; • *Protection of the Environment Operations (Waste) Regulation 2005*; • *NSW Waste Avoidance and Resource Recovery Act 2001;* • *Local Government Act 1993;* • *Local Government (General) Regulation 2005;* • *Sydney Water Act 1994.*
Controls (means and resources)	<u>Pre-Construction:</u> • Reduce the amount of spoil being generated through design and construction methodology wherever practicable; • The project would mandate 100% reuse or recycling (on or off-site) of usable spoil; • All relevant personnel working on site will undergo site induction training relating to spoil issues and management strategy; • Design with waste hierarchy approach to minimise waste generated as priority, then reuse on site, reuse off site and finally disposal. <u>Construction:</u>

Spoil Management	
	• Excess spoil generated on the site, that cannot be reused on-site, off-site or recycled will be classified as per the EPA's Waste Classification Guidelines (2014); • Topsoil generated on site shall be used for revegetation and landscaping purposes wherever practicable; • Excavated spoil will be temporarily stored in a bunded area or with appropriate environmental controls (such as placed on and covered with impervious geo-fabric and the use of dust suppression if required) in place to prevent run-off contaminants, entering the stormwater system; • Only a lawful facility may receive the spoil, a lawful facility includes one that has the appropriate development consent or environment protection licence and is complying with EPA-approved conditions and requirements; • The Virgin Excavated Natural Material (VENM) within the meaning of the POEO Act or any other waste derived material subject of a resource recovery exemption under clause 51A of the POEO (Waste) Regulation 2005 is permitted to be used as fill material. Likely examples of materials which may be used include gravel, soil or rock fines; • The beneficial spoil will be used as fill in excavation pits, embankments across the project alignment or wherever practicable; • Due to constrained nature of project sites, spoil which cannot be reused due to failing to meet contaminant reuse threshold criteria or engineering suitability will be loaded onto trucks as soon as practicable for off-site transport to the designated disposal site; • Spoil will be transported off site by registered road trucks to the approved transport routes specified in the CTMP; The spoil tracking system includes the following data: Date, Docket Number, Haulage Company/License, Material classification, Quantity in Tonnes, Truck Identification number, Location of Spoil Generation Site and Receival Site; • Spoil not classified as either VENM or ENM due to contamination from either construction material or other sources shall be characterised as General Solid Waste, Hazardous Waste or Special waste and will be disposed to licensed disposal facility; • Contractors have a contractual requirement to report monthly on the spoil recycling and reuse locations, as well as spoil volumes. This data is to be included in Monthly Sustainability reporting to TfNSW for SDG rating, and for LOR corporate waste audits. • All Heavy Vehicles used for spoil haulage must be clearly marked on the sides and rear with the project name and application number to enable immediate identification by a person viewing the Heavy Vehicle standing 20 metres away. <u>Post-Construction:</u> • At the end of the project, a mass balance of excavation volumes vs final disposal volumes would also be calculated.

Spoil Management	
Responsibilities	• Construction Manager will ensure spoil is correctly stored, weighed, recorded, tracked and minimised at all times; • Environmental Manager will ensure Spoil classification are conducted before disposal offsite; • Environmental Advisor will ensure the spoil is transported to the licensed facility and is complying with EPA approved conditions; • Spoil Reporting would be carried out by the Environmental and Sustainability Coordinator in the Monthly Sustainability Data Report as per Sustainability Design Guidelines and Sydney Metro – WSA Contractual Requirements.
Timeframe	• Duration of site works.
Monitoring and reporting	• Weekly Environmental Inspections by the Environmental Advisor; • Spoil tracking register as a component of waste register to be maintained by the Construction manager and Environmental advisor; • A register of spoil receipt sites that includes the project name, location, capacity, site owner and classification details would be maintained; • Skips and Spoil stockpiles monitored visually by the Site Supervisor or Construction Manager on a daily basis.

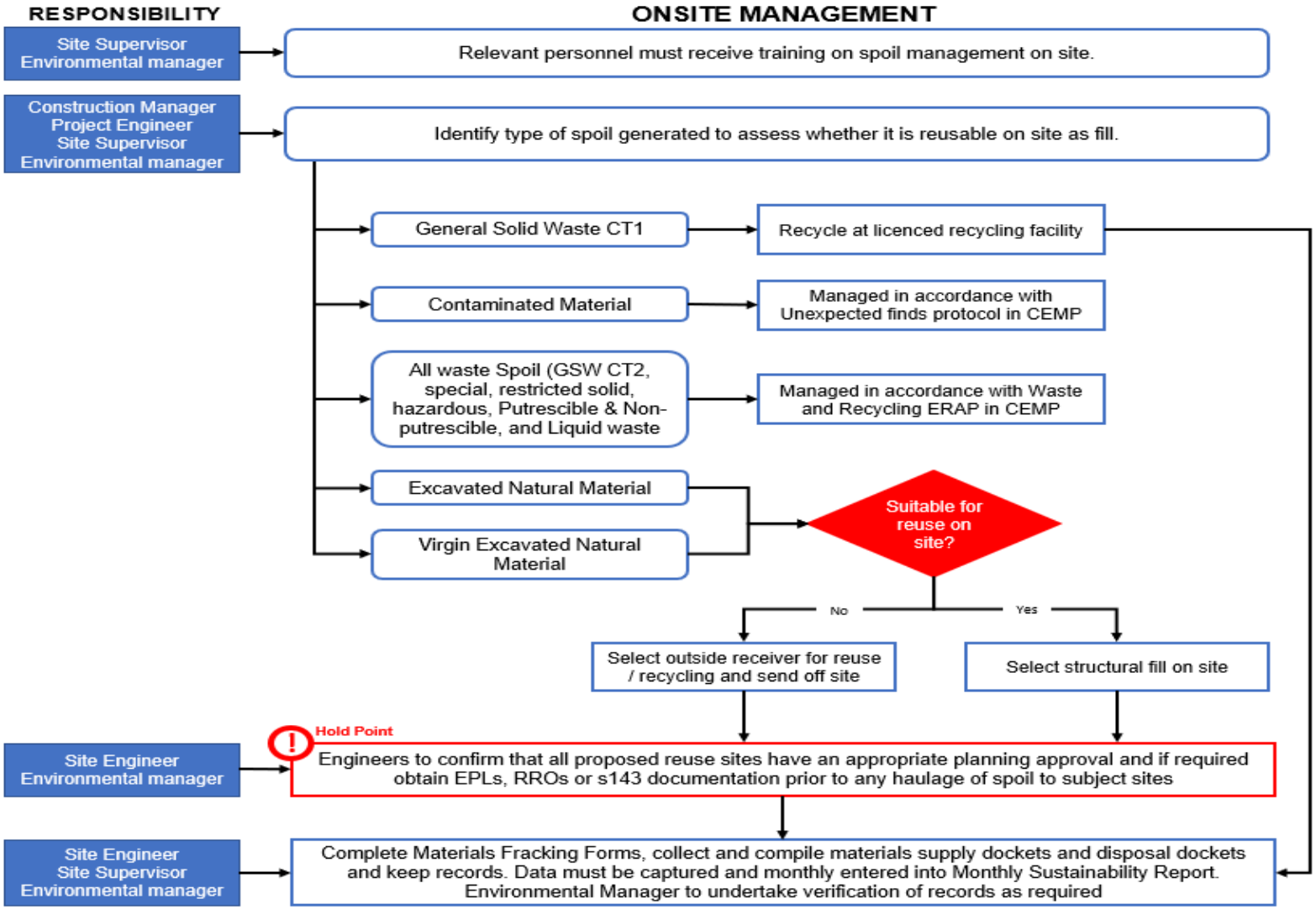

RESPONSIBILITY
ONSITE MANAGEMENT
Site Supervisor
Environmental manager
Relevant personnel must receive training on spoil management on site.
Construction Manager
Project Engineer
Site Supervisor
Environmental manager
Identify type of spoil generated to assess whether it is reusable on site as fill.
General Solid Waste CT1
Recycle at licenced recycling facility
Contaminated Material
Managed in accordance with Unexpected finds protocol in CEMP
All waste Spoil (GSW CT2, special, restricted solid, hazardous, Putrescible & Non-putrescible, and Liquid waste
Managed in accordance with Waste and Recycling ERAP in CEMP
Excavated Natural Material
Virgin Excavated Natural Material
Suitable for reuse on site?
No
Yes
Select outside receiver for reuse / recycling and send off site
Select structural fill on site
Hold Point
Site Engineer
Environmental manager
Engineers to confirm that all proposed reuse sites have an appropriate planning approval and if required obtain EPLs, RROs or s143 documentation prior to any haulage of spoil to subject sites
Site Engineer
Site Supervisor
Environmental manager
Complete Materials Fracking Forms, collect and compile materials supply dockets and disposal dockets and keep records. Data must be captured and monthly entered into Monthly Sustainability Report. Environmental Manager to undertake verification of records as required

Figure 4: Spoil Management Flowchart

Soil and Water Quality Management	
Objective	• To comply with contractual and legislative requirements and ensure that flooding, water discharged off site from construction, spills, erosion does not cause environmental nuisance or harm; • To minimise pollution of surface water through appropriate erosion and sediment control; • Minimise leaks and spills from construction activities; • Maintain existing water quality of surrounding surface watercourses; • Source construction water from non-potable sources, where feasible and reasonable.
Targets	• No sediment impacts to the surrounding environment and waterways as a result of the works; • Prevention of water quality impacts off site as a result of erosion and sedimentation.
Legal, contractual and other requirements	• CSSI 10051: MCoA E128, E130 and REMMS OWQ6 and CEMF 12.1a, 12.2a, 12.2b, 12.2c, 12.2d, 12.2e, 12.2f, 12.2g, 12.3a; • Australian and New Zealand Environment Conservation Council (ANZECC) guidelines; • *Water Management Act 2000;* • *Local Government Act 1993;* • *Protection of the Environment Operations Act 1997.*
Controls (means and resources)	Pre-Construction • Erosion and sediment control plans (ESCPs) or Environmental Control Map (ECM) will be developed and implemented prior to the commencement of topsoil stripping and earthworks consistent with LandCom's Managing Urban Stormwater series (The Blue Book); • Progressive Erosion and Sediment Control Maps will be maintained and kept up to date for the current site conditions; • Toolbox talks will be conducted for employees and subcontractors on the requirements of the Erosion and Sediment Control Plan;

Soil and Water Quality Management

- Water Resources management including maximising the use of non-potable water for construction will be used for the project. The project aims to use at least 33% of non-potable water for construction as per the sustainability requirement of the project;
- During the planning stage design would consider flood related mitigation including staging of construction works to reduce the duration of works within the floodplain. Provide flood-proofing to excavations at risk of flooding during construction, where required;

<u>During Construction</u>

- LORAC will develop and implement Progressive Erosion and Sediment control plans (ESCPs) or Environmental Control Map (ECM) for the worksite in accordance with Managing Urban Stormwater: Soils & Construction Volume 1 (Landcom, 2004) ("Blue book");
- Particular attention will be paid to the design criteria for sediment fences, catch drains, sandbags and similar controls;
- Preference is to pump out captured stormwater or groundwater and reuse on site or dispose to a licenced facility off site;
- If construction stage stormwater discharges are proposed, a Water Pollution Impact Assessment will be prepared in consultation with EPA and be consistent with the National Water Quality Guidelines;
- Wastewater storage and pump-out systems will be procured, installed and operated in accordance with Environmental Primary Standard Water Quality and Wastewater Storage, including the provision of automatic cut-off valves for inflows and high-level alarms;
- Under no circumstances will temporary stockpiles be placed in positions where they could impact adjacent property;
- Minimise the leak and spills from construction activities;
- Supervision to ensure correct loading of spoil to muck-away trucks and sheeting of loads;
- Refuelling of vehicles or machinery is to occur within a bunded or hardstand area;
- Washdown or concrete mixers, concreting equipment and trucks must take place in appropriate areas away from drainage lines and stormwater drains;
- Chemicals must be stored and handled in accordance with relevant Material Safety Data Sheets;

Soil and Water Quality Management	
	• Daily monitoring of weather forecasts and storm events that have potential for flooding. In the event major flooding is anticipated consultation with the NSW State Emergency Services and relevant local councils to ensure consistent approach to the management; • Review site layout and staging of construction works to avoid or minimise obstruction of overland flows and limit the extent of flow diversion required. <u>Post Construction</u> • All erosion and sediment control works will be removed in accordance with the removal requirements specified in Managing Urban Stormwater: Soils and Construction Vol 1 4th ed. by Landcom, 2004 (The Blue Book) and all surfaces will be returned to pre-existing conditions; The following compliance records will be maintained including: • Copies of current ESCPs or ECMs for all active construction sites; • Records of soil and water inspections undertaken; • Records of the release of the hold point to discharge water from the construction site to the receiving environment.
Responsibilities	• The Erosion and sediment control plans (ESCPs) or Environmental Control Map (ECM) will be approved by the contractor's Environmental Manager (or delegate) prior to any works commencing (including vegetation clearing) on a particular site; • Copies of the approved ESCP or ECM will be held by the Site Engineer and Site Supervisor for the duration of the project; • All staff to ensure adequate erosion and sediment control devices are installed and maintained; • Environmental Advisor will undertake weekly inspections weekly of on-site erosion and sediment control devices, as well as prior to expected rainfall and after rainfall; • The Site supervisor will be responsible for the repair and management of any damage or additional erosion and sediment control devices, as required.
Timeframe	• Duration of site works.
Monitoring and reporting	• Visually monitored daily by site supervisor; • Weekly inspections of Erosion and Sediment control measures and documented on the Environmental Inspection Report; • Site inspections will be undertaken prior to rainfall events where 20mm or more is predicted for a 24-hour period.

Soil and Water Quality Management	
	• Additional inspections will be undertaken following significant rainfall events (greater than 20 mm in 24 hours) by the Environmental Advisor; • Maintenance activities for ESCPs or ECM documented – items that cannot be immediately repaired will be documented INTELEX; • Preference is to pump out captured stormwater or groundwater and reuse on site or dispose to a licenced facility off site; • If construction stage stormwater discharges are proposed, a Water Pollution Impact Assessment will be prepared in consultation with EPA and be consistent with the National Water Quality Guidelines. • All water quality data including quantity, quality and dates of water release maintained in the project records; • All water will be tested (and treated if required) prior to discharge from the site in order to determine compliance with the Water Pollution Impact Assessment, appropriate approvals and licencing. No water will be discharged from the site without written approval of the Contractor's Environmental Manager; • Copies of current ESCPs or ECM, records of soil and water inspections undertaken, records of testing of any water prior to discharge will be maintained by the Environmental Advisor; • Copies of the approved ESCP or ECM will be held by the relevant Contractor personnel including the Engineer and the Site Foreman.

Hazardous and Contaminated Material Management	
Objective	• To comply with contractual and legislative requirements and ensure that contaminated material from construction activities does not cause an environmental nuisance or harm and is disposed of in accordance with legislative requirements.
Targets	• No environmental incidences involving contaminated materials; • No pollution events of the surrounding environment and waterways by contaminated material; • Tracking of all off-site movement of any found contaminated material.

Hazardous and Contaminated Material Management	
Legal, contractual and other requirements	• CSSI 10051: MCoA E93 – E99, REMM SC2 – SC10, HR1 and HR3 and CEMF Requirements 12.3a; • *Work Health and Safety Regulation 2011 (NSW)*; • D*angerous Goods Safety Management Act 2001;* • *Dangerous Goods Safety Management Regulation 2001*; • AS/ NZS 1940: 2004 – The Storage and Handling of Flammable and Combustible Liquids; • AS/NZS 4452:1997 The storage and handling of toxic substances; • AS/NZS 5026:2012 The storage and handling of Class 4 dangerous goods; • AS/NZS 1547:2012 On-site domestic wastewater management; • Australian Dangerous Goods Code, 7th Edition.
Controls (means and resources)	<u>Pre-Construction:</u> • A hazardous materials analysis would be carried out prior to stripping and demolition of structures and buildings which are suspected of containing hazardous materials (particularly asbestos); • A protocol will be developed and implemented to respond to and remedy leaks or spills; • Provide environmental awareness training on the identification and management of acid sulphate soils to all site personnel involved in earthworks, excavation or drainage construction activities. • A remedial action plan and unexpected contaminated finds protocol would be established to facilitate the quarantining, isolation and remediation of contamination identified throughout the construction programme; • If remediation is required to make land suitable for the final intended land use, a Remedial Action Plan will be prepared, or reviewed and approved by suitably qualified consultants. The consultants will be certified under either the Environment Institute of Australia and New Zealand's Certified Environmental Practitioner (Site Contamination) scheme (CEnvP(SC)) or the Soil Science Australia Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) scheme. The Remedial Action Plan would be prepared in accordance with relevant guidelines made or approved by the EPA under section 105 of the Contaminated Land Management Act 1997 (NSW) and would include measures to remediate the contamination at the site to ensure the site will be suitable for the proposed use when the Remedial Action Plan is implemented. • Before commencing any potential remediation works, a Section B Site Audit Statement(s) would be prepared by an NSW EPA-accredited Site Auditor that certifies that the Remedial Action Plan(s) is/are appropriate and that the site can be made suitable for the proposed use. The Remedial Action Plan(s) would be implemented and any changes to the Remedial Action Plan(s) would be approved in writing by the NSW EPA-accredited Site Auditor.

Hazardous and Contaminated Material Management

- When remedial works have been completed, a Validation Report will be prepared in accordance with Consultants Reporting on Contaminated Land: Contaminated Land Guidelines (EPA, 2020) and relevant guidelines made or approved under section 105 of the Contaminated Land Management Act 1997 (NSW).
- After the Validation Report has been prepared, a Section A1 or Section A2 Site Audit Statement (accompanied by an Environmental Management Plan) and its accompanying Site Audit Report, which state that the contaminated land disturbed by the work has been made suitable for the intended land use, will be submitted to the Planning Secretary and Penrith City Council after remediation and before the commencement of operation of the CSSI.

<u>During Construction:</u>

- All excavated material must be analysed prior to transportation and disposal in accordance with NSW Waste Classification Guidelines (EPA, 2014);
- Hazardous materials must be transported, stored and used in accordance with the corresponding Material Safety Data Sheets (MSDS);
- Fuels, Chemicals, lubricants must be stored and, where practicable, used within containment/hardstand areas designed to prevent the escape of spilt substances to the surrounding environment as required by AS191940: Australian standard for the storage and handling of flammable and combustible liquids;
- Hazardous Substances would be stored and managed in accordance with the Storage and Handling of Dangerous Goods Code of Practice (WorkCover NSW, 2005), the Hazardous and Offensive Development Application Guidelines: Applying SEPP 33 (Department of Planning, Industry and Environment, 2011), the Work Health and Safety Act 2011 (Commonwealth and NSW) and the requirements of the Environmentally Hazardous Chemicals Act 1985 (NSW);
- Hazardous materials and special waste (such as asbestos) would be removed and disposed of in accordance with the relevant legislation, codes of practice and Australian Standards (including the Work Health and Safety and Regulation 2011 (NSW);
- All fuels and hazardous substances must be stored at designated construction compounds in containers within a bunded enclosure with sufficient capacity to hold 110% of the stored material;
- Spill prevention and containment measures (drip trays) must be used when refuelling equipment on site;
- The amount of hazardous material stored and used on site must be kept to the minimum;
- Construction personnel to be trained in spill containment and response procedures;
- Suspected material may include material that is visibly different to surrounding material; is fibrous in nature; exhibits hydrocarbon odours or other unexpected characteristics; takes the form of unknown containers, piping, underground storage tanks or similar structures discovered;

Hazardous and Contaminated Material Management	
	In the event that suspected hazardous or contaminated material is encountered: • Follow protocols in the contract, Remediation Action Plan or the client's Environmental Management Plan where relevant; • Immediately cease work and contact the Site supervisor; • Demarcate the unexpected find to prevent access and install appropriate environmental and safety controls; • If substance is assessed as not presenting an unacceptable risk to human health, Site supervisor to remove controls and continue work; In addition, the following controls will be incorporated: • Manage any contaminated material as per legislative or EPA requirements, including testing and assessment at the direction of the client's representative; • Protect the environment by implementing control measures to divert surface run-off away from potentially contaminated ground; • Capture and manage any surface run-off contaminated by exposure to contaminated ground; • Acid sulfate soils ranging from Classes 1 to 4 are not predicted to occur within the work site. As such, the risk of encountering PASS/ASS on site are low. In the unlikely event that ground disturbance in areas of potential acid sulfate soil occurrence, testing would be carried out to determine the actual presence of acid sulfate soils. If acid sulfate soils are encountered, they would be managed in accordance with the Acid Sulfate Soil Manual (Acid sulfate soil management Advisory Committee, 1998); • Notify the client's representative upon discovery of suspected acid sulphate soils (ASS) or potential acid sulphate soils (PASS); • Implement a specific run-off control plan to prevent acid run-off from contaminating site areas and watercourses • Cover suspected ASS and PASS stockpiles with plastic overnight; • The generalised area of land between the Great Western Highway and St Marys Station has been identified as an area of known salinity on Figure 16-1 of the EIS (Chapter 16 Soils and contamination). Therefore, there is potential for saline soils to be encountered and testing would be carried out to determine the presence of saline soils. If salinity is encountered, excavated soils would be managed in accordance with Book 4 dryland Salinity: Productive Use of Saline Land and Water (NSW DECC 2008); • Targeted groundwater investigations would be undertaken prior to construction to identify high salinity areas at risk from rising groundwater. Where high saline areas (>1000 µS/cm) are identified, measures such as planting, regenerating and

Hazardous and Contaminated Material Management	
	maintaining native vegetation and good ground cover in recharge, transmission and discharge zones would be implemented where possible.
Responsibilities	• All personnel working on site should undertake identification and management of Acid Sulphate Soil; • Safety and Environmental Advisors have to ensure all site personnel undertook training on Spill containment and response procedure; • Construction manager to ensure testing was carried out to determine the presence of Saline soils in potential salinity areas.
Timeframe	• Contaminated material: duration of any contaminated material removal; • Hazardous material: duration of site works.
Monitoring and reporting	• Receipts for the disposal of any found hazardous material will be retained on site in the project records by the Environmental Manager; • The finding of any contaminated material on site will be reported by the site supervisor in accordance with the project's unexpected contaminated finds procedure.

Concrete washout	
Objective	• To comply with contractual and legislative requirements in relation to the washing out of concrete on the project.
Targets	• Zero spills or uncontrolled release of concrete; • No instances of uncontrolled concrete washout.
Legal, contractual and other requirements	• *Protection of the Environment Operations Act 1997*; • Relevant planning approvals and associated documents (dependent on work package), including Sydney Metro-WSA CSSI 10051 - Specifically the Ministers Conditions of Approval, Revised Environmental Mitigation Measures, CEMF, CTMF, OCCS and the Staging Report;
Controls (means and resources)	• All concrete washout areas are to be clearly identified on the Environmental Control Maps (ECMs). • Concrete washout to be constructed with non-permeable plastic lining and bunded; • Washout to be located at least 20m away from any drainage line or stormwater system; • Washout to be barricaded off on all sides when not in use to prevent unauthorised entry;

Concrete washout	
	• Washout area to be inspected daily by the Site supervisor to ensure residual water levels do not exceed 75% of capacity; • Record of daily inspection to be kept in Site supervisor's/Supervisor's diary when concrete washout is being undertaken; • Washout area to be cleaned when the capacity has been reduced below 50%; • Cleaning of washout to involve removal of spoiled geofabric material, which is to be disposed of in licensed landfill. Records to be retained; • Where possible, waste concrete to be returned to the batch plant or concrete recycler; • Concrete truck drivers to be advised of the location of the washout area prior to arrival on site; • The requirements relating to concrete washout on site to be provided to the supplier prior to the works.
Responsibilities	• The Site supervisor will ensure that an approved and prepared area for concrete washout is available; • All personnel are required to ensure that the requirements of this ERAP are implemented for their operations; • The Site supervisor is required to advise of any concrete spills; • The Site supervisor is responsible for confirming these requirements with the concrete supplier prior to the works.
Timeframe	• Duration of site works.
Monitoring and reporting	• Weekly inspections to be recorded in INTELEX by the Environmental Advisor; • Incidents or spills of concrete to be recorded in INTELEX by the Safety Advisor;

Delivery and storage of chemicals, fuels and oils, including dangerous goods requirements	
Objective	• To comply with contractual and legislative requirements in relations to the transport of dangerous goods; • To comply with contractual and legislative requirements in relation to the storage of chemicals, fuels and oils on site; • To ensure contractual and legislative requirements in relation to hazardous substances and dangerous goods are adequately addressed for all operations – there are specific additional requirements relating to the storage and transport of dangerous goods.
Targets	• Zero spills or uncontrolled release of fuel, oils or chemicals associated with Laing O'Rourke's operations; • Compliance with relevant transport and storage requirements listed below; • All vehicles transporting dangerous goods have appropriate placards, licences and emergency equipment and procedures.

Delivery and storage of chemicals, fuels and oils, including dangerous goods requirements	
Legal, contractual and other requirements	• CSSI 10551: REMM HR1, HR3, CEMF Requirements: 12.3 a; • AS/NZS 1940: 2004 – The Storage and Handling of Flammable and Combustible Liquids; • Storage and Handling of Dangerous Goods Code of Practice (WorkCover NSW, 2005); • Hazardous and Offensive Development Application Guidelines: Applying SEPP 33 (DPHI 2011); • Work Health and Safety Act 2011 (Commonwealth and NSW); • AS/NZS 5026:2012 The storage and handling of Class 4 dangerous goods; • *Dangerous goods (Road and Rail Transport) Act 2008;* • *Dangerous goods (Road and Rail Transport) Regulation 2008*; • Australian Dangerous Goods Code, 7th Edition; • Relevant planning approvals and associated documents (dependent on work package), including Sydney Metro-WSA CSSI 10051 - Specifically the Ministers Conditions of Approval, Revised Environmental Mitigation Measures, CEMF, CTMF, OCCS and the Staging Report.
Controls (means and resources)	• The storage of fuel, oil, chemicals or other dangerous goods on site is to be minimised though efficient and timely ordering; • The safety data sheet (SDS) and material risk assessment – including any specific control measures – are to be submitted where required to the client's representative for each and every substance to be brought on to site; • A risk assessment relating to the use of these materials is to be completed in accordance with the Construction Health and Safety Management Plan prior to the arrival of these goods to site; • The SDS and associated documentation for each material are to be reviewed prior to the completion of the risk assessment for the relevant construction process. A copy is to be included with the safe work method statement (SWMS); • SDSs are to be available on site for all fuels, oils, chemicals and dangerous goods. Suppliers are to provide SDSs prior to dispatch of the material; • At all times when not specifically in use, chemicals, fuels and oils are to be stored in a securely bunded area with appropriate signage; • Chemicals, fuels and oils are to be stored inside impervious bunds of sufficient capacity to contain 110% of the stored volume. Bunded areas must have sufficient cover to prevent ingress of rain; • Materials removed from the bunded storage area for use are to be returned to the bund at the end of each shift; • Storage sites are to be located more than 20m away from operational facilities, drainage lines and areas prone to flooding or on slopes > 1V:10H;

Delivery and storage of chemicals, fuels and oils, including dangerous goods requirements	
	• The driver or Supervisor is to be in attendance at all times when the unloading of fuel, oil or chemicals takes place on site; • No water is to be discharged from bunded areas into the site drainage system. Contaminated water is to be removed by an appropriately licensed contractor and discharged to a suitably licensed waste facility; • Delivery drivers are to be provided with specific drop-off and storage instructions; • Spill kits and absorbent material are to be located adjacent to storage bunds; • Training is to be provided to the workforce in the application of this ERAP and the use of spill kits; • Absorbent material used to clean up spills is to be disposed of in accordance with the NSW EPA's Waste Classification Guidelines (2014); • A register of chemicals, fuels, oils and hazardous materials is to be kept on site and maintained for the duration of the project; • Each construction method statement is to identify the use of chemicals, fuels, oils and hazardous materials; • SWMSs are to address the specific requirements relevant to the work to be undertaken and document relevant site control measures. Controls specific to the management of dangerous goods include the following: • Transporters of dangerous goods must be appropriately licensed. This includes relevant licenses for vehicles and drivers; • Dangerous goods that are to be transported in receptacles greater than 500lt/kg will require specific licences and must not be transported by Laing O'Rourke without the Project Manager approval; • Where dangerous goods are transported by Laing O'Rourke, a SWMS must be developed and include dangerous goods requirements; • Transport information/manifest is required to be included with any quantity of dangerous goods transported by Laing O'Rourke; • The SWMS statement must address the requirement for licensing, placards or other specific regulatory requirement. Transport activities in quantities that trigger the requirements of a 'placard load' under the regulations require the following: • Transport vehicle to have appropriate dangerous goods placard; • Transport documents, including manifests; • Emergency procedures and information in an appropriate holder; • 30B fire extinguisher; • Double-sided reflectors;

- Driver safety equipment and personal protective equipment;
- Goods must be secured and where required segregated from incompatible goods;
- Dangerous goods must be appropriately marked in accordance with the Australian Dangerous Goods Code;
- Typical dangerous goods association with our operations include the following;

Type of goods	DG class	Type of goods	DG class	Type of goods	DG class
LPG gas	2.1	Epoxy paint, including hardener	8	Plumbing adhesive	3
Open gear lubricant	2.1	Chemical anchor – parts A and B	8	Diesel	3
Marker paint	2.1	Chemical anchor	8	Joint/gap sealant	3
Silicone lubricant	2.1	Adhesive mortar		Dry film lubricating paint	3
Fuel gas for welding or cutting	2.1	Acid	8	Sealant	
Fuel gas for welding or cutting	2.2	Degreaser (pile rigs)	8	Flocculant	6.1
Air-operated tool lubrication	3	Engine coolant	9	Rail welding consumables	8
Zinc primer paint	3	Antifreeze	9	Adhesive	1.4 S
Air tool lubricant – workshop	3	Grout	9		3
Petrol – unleaded	3	Form oil	9		
Sealant	3		9		

Controls specific to the storage of dangerous goods include the following:

- Dangerous goods storage on site must comply with the requirements of Australian Standard AS 1940:2017, including maintaining separation distances for incompatible materials;

Delivery and storage of chemicals, fuels and oils, including dangerous goods requirements	
	• The proposed materials must be assessed for compatibility and required separation distances or control measures implemented; • Flammable materials storage must be >15m from site facilities, offices, amenities or protected places; • Quantities to be stored must be assessed to determine if they are considered manifest quantities; manifest quantities will require notification to SafeWork NSW; • A storage location plan is required and must include internal layout and the location of registers and manifests for the storage location; • Bunding must be impervious and of sufficient capacity to contain 110% of the stored volume; • Appropriate spill containment material and fire extinguishers are also required.
Responsibilities	• Engineering personnel are responsible for identifying any requirement to transport dangerous goods; • Relevant Project Manager or Site supervisor is responsible for ensuring all vehicles carry appropriate placards, licences, emergency equipment and procedures; • The Site supervisor is required to ensure that sufficient bunds are available, and that material is stored appropriately; • Engineering personnel are responsible for ensure SDSs and other relevant documentation are obtained and, where required, submitted to the Client's Representative prior to the material arriving on site. Relevant documentation also includes appropriate risk assessment; • The Health, Safety and Wellbeing Lead is responsible for ensuring the chemicals, fuels, oils and hazardous substances register is maintained.
Timeframe	• Duration of operations. The requirements apply to goods transported by Laing O'Rourke and third parties.
Monitoring and reporting	• Plant and project risk assessments to be carried out; • Weekly inspections, which are to be recorded in INTELEX by the Site team; • Register of chemicals, fuels, oils and hazardous materials; • Incidents or spills recorded in INTELEX; • Storage areas inspected by supervisory personnel on a weekly basis;

Traffic management	
Objective	• To comply with contractual requirements and ensure that noise and additional traffic from construction activities does not cause an environmental nuisance.
Targets	• No valid complaints resulting from congestion from construction traffic outside the approved Traffic Management Plan; • Compliance with traffic management standards; • No visible queuing in streets surrounding the site.
Legal, contractual and other requirements	• CSSI 10051: MCoA E103, E105 – E116, REMM T1, T4, T5, T6, T9, CTMF and CEMF Requirements; • *Protection of the Environment Operations Act 1997*; • *Roads Act 1993;* • RMS Traffic Control at Worksites; • *Roads (General) Regulation 2000*; • *Local Government Act 1993;* • Relevant planning approvals and associated documents (dependent on work package), including Sydney Metro-WSA CSSI 10051 - Specifically the Ministers Conditions of Approval, Revised Environmental Mitigation Measures, CEMF, CTMF, OCCS and the Staging Report..
Controls (means and resources)	<u>Pre-Construction</u> • A Construction Traffic Management Plan will be developed detailing the route to the site, times of activity, types of machinery, signage, traffic control measures and so on, as required in accordance with the Sydney Metro Construction Traffic Management Framework; • A copy of the Construction Traffic Management Plan will be submitted to the Planning Secretary for information before the commencement of any construction in the area. • Where Local Roads are to be used that are not identified in the documents provided in CoA A1, a Heavy Vehicle Local Access Road Request (HVLAR) is to be approved by the Department of Planning, prior to utilisation of local road. A Road Dilapidation Report must be prepared for the road; • A Road Safety Audit would be undertaken as part of the detailed design process, as required by the relevant approvals.

Traffic management	
	<u>During Construction</u> • Access to all utilities and properties will be maintained during works, unless otherwise agreed with the relevant owner or occupier; • Changes to property access are to be communicated to the community in the letterbox drop; • An approved Traffic Control Plan will be required for any activity on or immediately adjacent to public roads; • Traffic Management Plans will detail the monitoring and inspection requirements; • There will be no queuing of vehicles on any roads adjacent to the site; • There will be no construction parking in non-approved zones or parking areas; • Cyclist and Pedestrian access ways will be clearly defined, signposted and maintained, as per the CEMF and REMMs; • Construction workers are to park where minimal impact to local commuters and minimise on-street parking; <u>Post Construction</u> • Post pavement dilapidation surveys are to be carried out where required; • If damage to roads occurs as a result of the construction, the relevant road authority will be compensated for the damage occurred or damage will be rectified to restore the road to the pre-condition as identified in the Road Dilapidation Report;
Responsibilities	• The Site supervisor and Construction Manager will be responsible for ensuring the Construction Traffic Management Plan and Traffic Control Plans are developed, approved and implemented.
Timeframe	• Duration of site works.
Monitoring and reporting	• Complaints, collated, addressed and recorded in accordance with the Community Liaison Management Plan – LORAC Community and Stakeholder Advisor; • Daily inspection, checks and regular maintenance to be completed for traffic control measures- Site Team;

Biodiversity	
Objective	• To comply with contractual and legislative requirements and ensure that native flora and fauna are protected from construction activities; • Minimise impacts on flora and fauna; • Retain and enhance existing flora and fauna habitat wherever possible; • Appropriately manage the spread of weeds and plant pathogens.
Targets	• Compliance with the conditions of approval in relation to protected trees; • Minimise impacts on flora and fauna; • No damage to or death of trees marked as protected on the project; • No death or injury to fauna; • All staff and subcontractors informed of the protected trees on the project;
Legal, contractual and other requirements	• CSSI 10051: MCoA E2, E12, E13, REMMs and CEMF Requirements; • SMWSA Pre-Clearing inspection for native vegetation removal approval; • *Biodiversity Conservation Act 2016;* • *Environmental Protection and Biodiversity Conservation Act 1999;*
Controls (means and resources)	<u>Pre-Construction</u> • A pre-clearing inspection will be undertaken prior to any native vegetation clearing by a suitable qualified ecologist and the LORAC's Environmental Advisor; • The pre-clearing inspection will include; ◦ Identification of any threatened flora and fauna; ◦ Identification of hollow bearing trees or other habitat features; ◦ The completion of any other pre-clearing requirements required by any project approvals, permits or licences. • Threatened species in the proximity of work area would be clearly demarcated and marked out with flagging tape to visually delineate their presence to avoid unnecessary removal or damage; • No clearing or vegetation removal can occur without approval from the relevant authority. <u>Construction</u>

Biodiversity	
	• Construction of fencing or any physical barrier between installation areas and the vegetation to be installed where required; • The extent of clearing and/or trimming must be minimised where possible; • The clearing limits and protected vegetation is to be clearly communicated to site personnel during site inductions and toolbox talks; • Works would be undertaken only in designated areas; • Trim or remove trees under direction of an arborist, where required, or as per ecologist mitigation measures / recommendations; • Pruning or removal of trees under direction of an arborist, where required, or as per ecologist mitigation measures / recommendations; • Site inductions are to be given to ensure all site workers and visitors are aware of any no-access areas and are informed of the significance of adjacent vegetation and threatened species; • Plant and equipment brought on to site must be cleaned and free of deleterious material, mud and other material that may harbour weed seeds; The client's representative must be notified of any noxious weeds identified; • Priority weed species occurring within the subject site should be managed in order to prevent further spread and impacts to threatened species; • Priority weeds layers should be demarcated in order to be disposed of separately; • Keep vehicles and equipment away from vegetation; • Removal or trimming of native vegetation will be carried out with prior approval from SMWSA by completing SMWSA Pre-Clearing inspection for native vegetation removal approval form; • No personnel on site are permitted to hunt, fish, feed, capture, extract or otherwise disturb aquatic, animal or vegetative species while performing any tasks for the project; • Contact Wildlife Information, Rescue and Education Services (WIRES) for injured fauna; • If native fauna is identified within the disturbance footprint, the person taking the action must take all necessary steps to minimise harm and mortality to those animals; • Open excavations and storage areas are to be inspected regularly for the presence of fauna species. <u>Post Construction</u> • Offset for the removal of native vegetation for each locally native tree removed as per contract requirements;

Biodiversity	
	• A post clearance report will be produced as required that validates the type and area of vegetation cleared including confirmation of the number of hollows impacted to offset these impacts, if required.
Responsibilities	• All personnel are responsible for ensuring that the clearing limits are addressed, and native flora and fauna species are protected; • All site personnel must undertake toolbox talks on the reporting process for injury or death to fauna or clearing of flora occurring beyond the required limits for construction; • Environmental Advisor would get prior approval for Tree removal from SM-WSA; • Records of pre-clearing inspections and ecological inspections undertaken will be maintained by the Environmental Advisor of the project. • Site Supervisor, Project Manager and Laing O'Rourke staff to ensure all targets are met.
Timeframe	• Duration of the works by Laing O'Rourke.
Monitoring and reporting	• Environmental Inspection Report to be recorded in INTELEX – Environmental Advisor of the project; • Biodiversity SERs to be recorded in the INTELEX – Environmental Advisor of the project; • Clearing limits monitoring visually – Site personnel / Environmental Personnel of the project.

Visual Amenity	
Objective	• To comply with contractual and legislative requirements and ensure that increased visual amenity are provided to the community; • Minimise impacts on existing landscape features as far as feasible and reasonable; • Ensure the successful implementation of the Landscape Design; • Reduce visual impact of construction to surrounding community.
Legal, contractual and other requirements	• CSSI 10051: MCoA E61, E62, E64 and CEMF Requirements 11.1b, 11.2 b, 11.2 c; • AS4282:1997 Control of the Obtrusive Effect of Outdoor Lighting; • Relevant planning approvals and associated documents (dependent on work package).
Targets	• Reduce visual impact of construction to surrounding community

Visual Amenity	
Controls (means and resources)	<u>Pre-Construction</u> • Wayfinding information must be incorporated on temporary hoardings to guide pedestrians around the construction site; • Minimal amenity impacts to surrounding residences and businesses, by applying appropriate visual mitigation and screening as soon as feasible and augment existing screenings. <u>Construction</u> • A high level of housekeeping must be maintained to ensure that work site is kept clean and tidy; • Waste materials must be removed from the site regularly; • Orientate lighting to minimise glare and light spill impacts; • Construction will be carried out with the objective of minimising light spill to surrounding properties. All lighting associated with the work will be consistent with the requirements of: (a) ASINZS 4282:2019 Control of the obtrusive effects of outdoor lighting; (b) NASF Guideline E: Managing the Risk of Distractions to Pilots from Lighting in the Vicinity of Airports; and; (c) NASF Guideline C: Managing the risk of wildlife strikes in the vicinity of airports. • Mitigation measures will be provided to manage residual night lighting impacts to protect adjoining properties, in consultation with affected landowners; • Regular inspections would be undertaken to check the health of retained vegetation around site boundaries and the conditions of site hoarding and acoustic sheds; • During construction - hoardings, site sheds, fencing, acoustic walls around the perimeter of the site, and any structures within the Project footprint or built as part of the Project are to be maintained free of graffiti: a) offensive graffiti will be removed or concealed within 24 hours; b) highly visible (yet inoffensive) graffiti will be removed or concealed within a week; c) graffiti that is neither offensive or highly visible will be removed or concealed within a month; d) any unauthorised advertising material will be removed or concealed within 24 hours; • The Contractor will retain compliance records of any inspections undertaken in relation to visual and landscape measures; • Temporary construction works will be designed with consideration of urban design and visual amenity as per Section 4.4 of CEMF; • Existing vegetation not affected by the construction works will be retained;

Visual Amenity	
	• Temporary site lighting, for security purposes or night works will be installed and operated in accordance with AS4282:1997 Control of the Obtrusive Effect of Outdoor Lighting; • The CSSI name, application number, telephone number, postal address and email address required under condition B3 and A47 must be available on site boundary fencing / hoarding. This information is to also be provided on the website as required under CoA B11. <u>Post Construction</u> • Temporary hoardings, barriers, traffic management and signage would be removed when no longer required; • At the completion of construction, all plant, temporary buildings or vehicles not required for the subsequent stage of construction will be removed from the site; • All land, including roadways, footpaths, loading facilities and other temporarily occupied land will be returned to their pre-existing condition or better; • Working areas will be reinstated in consultation with Sydney Metro - WSA, the landowner and stakeholders; • Community Spaces, Infrastructure and Services will be reinstated as soon as possible after completion of construction.
Responsibilities	• Construction Manager; Project Manager; Project Engineer; Site Supervisor are required to ensure that the requirements of this ERAP are implemented for their operations; • Environmental Manager to ensure compliance with ERAP; • Environmental Advisor's regular inspection will include checking the condition of any site hoarding and acoustic sheds, the health of retained vegetation around site boundaries and checking the positioning of site lightning.
Timeframe	• Throughout construction activities
Monitoring and reporting	• Visual monitoring weekly of any existing items – Site Supervisor; • Completion of the Environmental Inspection Report. – LORAC Environmental Advisor.
Auditing	• Audits will be undertaken to assess the effectiveness of environmental controls, compliance with this ERAP; • Audit requirements are detailed in Section 18 of this Plan.
Record Keeping	• Typical records to be generated and maintained (on the Project Document System/Server) will include: • Inspection records; • Dust monitoring, training and toolbox meeting records;

Visual Amenity	
	• Laing O'Rourke will retain compliance records of any inspections undertaken in relation to visual and landscape measures.

Socio-Economic, Land Use and Property	
Objective	• To minimise impacts and interference to the third-party property;
Targets	• No disturbance or damage to the third-party properties. • No damage to the utilities, services and other infrastructures; • Avoiding disruption to the services wherever possible.
Legal, contractual and other requirements	• Relevant planning approvals and associated documents (dependent on work package); • CSSI 10051: MCoA E82, E83, E84, E85, E86, E91, REMMs LU1, SE1.
Controls (means and resources)	• A Community Liaison Management Plan (CLMP) would be developed and consultation with the local community and project stakeholders would be undertaken to identify and deliver opportunities to provide a positive contribution to the potentially affected community; • Utilities, services and other infrastructure potentially affected by construction will be identified before works affecting the item, to determine requirements for access to diversion protection and support; • Alterations to services will be determined by negotiation with the service providers. Disruption to services resulting from construction will be avoided, wherever possible, and advised to customers where it is not possible; • A suitably qualified and experienced person would take condition surveys of all buildings, structures, utilities likely to be affected by the work. The results of the surveys would be documented in a Pre-Construction Condition survey report for each item survey; • Copies of pre-construction Condition Survey Reports must be provided to the landowners of the items surveyed, and no later than three (3) months following the completion of the work that could impact on the subject surface/ subsurface structure; • Small Business Owners Engagement Plan will be prepared for St Marys and implemented in accordance with the Overarching Community Communication Strategy (OCCS) to minimise impact on small businesses directly affected by construction activities at St Marys during construction; • Disruption to any service will be minimised and local residents and businesses affected will be advised before any planned disruption of service.

Socio-Economic, Land Use and Property	

	• Section 8.11.5 of the EIS discusses the potential for additional utility works required outside of the construction footprint for the project. Such utility works would be delivered for the project provided the works are consistent with the following *performance criteria.* The works would require Sydney Metro and ER approval.
	  ○ the works connect to the construction footprint or to a point adjacent to the construction footprint
	  ○ the works have no direct impact on heritage items (including areas of archaeological sensitivity), threatened species, populations or ecological communities beyond the impacts assessed in the Environmental Impact Statement
	  ○ the works can be carried out and managed consistent with the performance outcomes (Table 27-4) identified in Chapter 27 (Synthesis) or as revised.
	  ○ If the works are not consistent with the *performance criteria*, the works may require further assessment. LORAC will liaise with TfNSW regarding such works.

Responsibilities	• Construction Manager and site team to ensure the utilities potentially impacted are identified prior to the works; • Community and stakeholder advisor to inform the communities on disruption of services prior to works.
Timeframe	• Throughout construction activities

Heritage	
Objective	• To comply with contractual and legislative requirements and ensure that existing and undiscovered heritage and archaeological items are protected from construction activities; • Embed significant heritage values through any architectural design, education or physical interpretation; • Minimise impacts on items or places of heritage value; • Avoid accidental impacts on heritage items; • Maximise worker's awareness of indigenous and non-indigenous heritage.
Targets	• No disturbance or damage to existing known heritage sites or items; • Unknown or undocumented heritage sites are not knowingly destroyed, defaced or damaged; • Identify and protect any new artefacts or heritage sites before any harm can take place; • Any relics found on site will be kept safe for consideration of incorporation into site fixtures.

Heritage	
Legal, contractual and other requirements	• *Heritage Act 1977;* • *National Parks and Wildlife Act 1974*; • CSSI 10051: E19 – E36, REMMs: NAH1, NAH2, NAH3, NAH5, NAH6, NAH7, NAH9, ONAH1-ONAH7, AH1, AH2, AH5-AH13, OAH1, CEMF: 8.1, 9.1a, 9.2, Staging Report and Submissions Report.
Controls (means and resources)	• For full Heritage Procedure refer to Attachment R: Heritage Management Procedure; <u>Pre-construction</u> • Archival recording is to be undertaken prior to the commencement of construction; • Design and construction of the Proposed Activity within the curtilage of St Marys Railway Station Group must be undertaken in accordance with the conditions of approval; • Location of currently identified archaeological and heritage items are to be nominated on the Environmental Control Map. At a minimum, the location nearby heritage items and significant elements such as the Goods Shed and jib crane must be marked on environmental control plans; • An ACHAR and ACHMP were prepared by M2A as part of the EIS for the project; • The AFC Design Reports Must be reviewed by the Environmental Manager to ensure the works will not impact significant heritage fabric. Where impact to significant fabric is identified, consultation with an appropriately qualified and suitably experienced heritage architect will be undertaken in accordance with ONAH7. <u>During Construction</u> • Where impact to significant fabric is identified, work methodologies will be undertaken by skilled tradespeople accordance with ONAH7; • Activities that cause vibration are to be managed in accordance with Sydney Metro Construction Noise and Vibration Strategy and FSM DNVIS (Attachment S); • To ensure that the enabling works do not cause vibration impacts to significant elements such as the Goods Shed and jib crane, vibration monitors would be installed and reviewed during the works; • If vibration limits are exceeded or if it is identified that the levels of vibration are causing damage to heritage fabric, works would cease and the construction methodology would be reviewed by the project engineers in consultation with a Heritage Consultant in order to mitigate further impacts; • Exclusion zones, including hoarding, fencing, screening or mapped no go zones would be provided where the enabling works are to be undertaken in close proximity to significant elements of St Marys Railway Station Group (SHR# 01249) to minimise the risk of impacts. In particular, the Goods Shed must not be adversely affected in accordance with E21;

Heritage	
	• Physical barriers such as hoarding, screening or protective blankets would primarily be needed where works or plant movement would be undertaken within about 5m of significant fabric of a heritage item such as the Goods Shed or jib crane. Where physical barriers are set up around the Goods Shed and jib crane, they must be sufficiently set back from the structure (approximately 3m) to ensure that if the hoarding collapsed it would not strike the items. Signage would be attached to the barriers to identify the items and outline management requirements; • Unidentified Indigenous or non-Indigenous heritage/archaeological items are uncovered during construction works, will be managed in accordance with the Sydney Metro Unexpected Heritage Finds Procedure; • If suspected human remains are identified, the Sydney Metro Unexpected Heritage Finds Procedure and Sydney Metro Exhumation Management Plan would be implemented in accordance with E36 and NAH9; • Awareness training on the need to stop work and to report on new sites, artefacts or items of heritage value; • Exclusion fencing and/or flagging will be provided around the perimeter of any identified heritage or archaeological items; • Awareness training on the need for the preservation of artefacts and items of heritage value to be provided during the site induction and pre-starts; • Should any new items be discovered that are suspected of being of heritage significance, whether Indigenous or European, work in the specific area would cease and LORAC and SM-WSA is to be notified immediately; • If evidence of deterioration is observed in significant fabric as a result of the enabling works, such as impacts caused by vibrations, or if there is an inadvertent impact to significant fabric, advice on management and treatment would be sought from the heritage architect. • In the event that a significant unexpected find is encounters a nominated Excavation Director is to be engaged to consult with Heritage NSW and would be present to oversee excavation where required; • Should suspected heritage or archaeological items including human remains be found during the works, the following procedure will apply (refer to Unexpected finds procedure): o Work is to cease in the area immediately and LORAC Environment Manager to be notified; o The matter is to be referred to SM-WSA and the ER; o The object is to be left in place; o Location of the item are to be noted; o Photographic records of the item and its location are to be made; o A written clearance confirmation would be provided by the project archaeologist to Laing O'Rourke once non-Aboriginal archaeological management of an unexpected find has been completed.

Heritage	
	<u>Post Construction</u> • Heritage inventory registers for heritage items modified by the project would be updated to document their change in condition following the completion of construction works for the project (to be completed by SM).
Responsibilities	• All personnel on site are to ensure that archaeological and heritage items are protected from damage or disturbance; • The Environmental Manager will ensure all site personnel undertake toolbox talks in relation to protection of nominated items that were previously unknown.
Timeframe	• Throughout construction activities.
Monitoring and reporting	• Visual monitoring weekly of any existing items against dilapidation report; • Completion of the Environmental Inspection Report; • Vibration Monitoring during vibration generating activities as per DNVIS (Attachment S).

Attachment G: Severe Environmental Risks – LORAC Assessment Process

The Severe Environmental Risk Controls Standard is a key element of the LORAC environmental management framework. It describes the various critical controls and requirements that must be in place, demonstrated and effectively working such that severe environmental impacts are prevented.

Severe environmental impacts are those which should they eventuate, would result in permanent or long-term damage to the environment or that could not be easily rectified. They would alter receiving environment and result in a significant impact on the project's objectives. It should be noted that this process is focused on preventing severe environmental impacts and is not a tool to monitor compliance generally as per the project requirements.

This standard does not replace the requirements of the Construction Environmental Management Plan.

There are activities and processes within our construction and operational work that have the potential to cause severe environmental impacts. The Severe Environmental Risk Controls (SERs) standard provides clear guidance on the requirements and control measures when implemented are intended to manage these risks.

The standard includes both system and field control measures.

The standard will be reviewed regularly to ensure it incorporates important lessons from any significant incidents and near misses.

The standard may be updated with additional aspects or controls as determined in accordance with the business's risk management process.

Requirements

The Severe Environmental Risk Controls is to be applied to all of LORAC's activities. The controls apply to all personnel, supply chain partners and visitors on to our construction and operational facilities.

Self-assessment and planning tool

Monitoring and review activities will be undertaken on a monthly basis to ensure that the various aspects of performance criteria are in place and working effectively. The monitoring activity scope will be dependent on the scope of the severe environmental risk activities occurring on the project and reflect the current risk processes and methodologies.

Each monitoring activity will include a review of the system and field controls measures. The focus of the system elements is to ensure that the right level of planning and implementation occurs to enable field controls to be effective.

Where the specific aspect or risk is identified during construction and operational activities, teams will review and confirm on a monthly basis that the controls are in place to manage severe environmental impacts. If all aspects of the performance criteria are working effectively ("well controlled") in areas where the risk applies, then the risk can be deemed managed and controlled.

Project and operational reviews

The Severe Environmental Risk Controls standard monitoring results will form part of the project or operational facility review process to ensure that all identified criteria are in place and working effectively. As part of the monthly project or operational facility review process the SERs will provide members of the senior leadership team with a level of oversight on implementation of the relevant standard. This will be reported through a Severe Environmental Risk Controls standard assessment tool.

Project Leaders and operational facility leaders are responsible for ensuring that the control standard and monitoring activities are undertaken on a monthly basis. Leaders will need to be assured that the Severe Environmental Risk Controls are implemented effectively at their facilities.

The Severe Environmental Risk Controls standard will allow personnel at all levels to make informed decisions and will provide clarity to the operators and supply chain partners on our expectations and minimum standards to be applied, demonstrated and monitored to prevent severe environmental impacts.

All LORAC Severe Environmental Risks can be publicly access on the Laing O'Rourke HSEMS webpage.

Attachment H: Project Permits, and Approvals Register

Table 19: Project permits, and approvals register

Relevant legislation	Applicable to the project (yes/no)	Permit/licence/Approval Number/registration certificate	Commencement date	Expiry date	Surrender requirements	Project custodian	Project briefing date
Environmental Planning and Assessment Act 1979							
Sydney Metro - WSA CSSI 10051	Yes	CSSI 10051			-	Environmental Manager	TBC
Environment protection licence							
No	No	-			-	-	-
Water Act 1912							
Section 10 Surface water licence	No	-			-	-	-
Part 5 Section 112 Groundwater licence	No	-			-	-	-
Part 8 Division 3 Approval of controlled work	No	-			-	-	-
Water Management Act 2000							
Section 56 Access licences	No	-			-	-	-
Section 89 Water use approvals	No	-			-	-	-

Relevant legislation	Applicable to the project (yes/no)	Permit/licence/Approval Number/registration certificate	Commencement date	Expiry date	Surrender requirements	Project custodian	Project briefing date
Section 90 Water management work approvals	No	-	-		-	-	-
Section 91 Activity approvals	No	-	-		-	-	-
Fisheries Management Act 1994							
Division 3 (Sections 199, 200, 201) Dredging and reclamation	No	-	-		-	-	-
Section 205 Marine vegetation—regulation of harm Permit to Harm Marine Vegetation	No	-	-		-	-	-
Section 220ZW Licence to harm threatened species, population or ecological community or damage habitat	No	-	-		-	-	-
Sydney Water Act 1994							
Section 49 Offence to discharge into works – Trade Waste Permit	No	-	-		-	-	-
Permit to use approved metered standpipes on Sydney Water hydrants	Yes	TBC – Subcontractor to have				Construction Manager	
Dangerous Goods (Road and Rail) Transport Act 2008							

Relevant legislation	Applicable to the project (yes/no)	Permit/licence/Approval Number/registration certificate	Commencement date	Expiry date	Surrender requirements	Project custodian	Project briefing date
Section 6 Licensing of vehicles transporting dangerous goods	No	-	-		-	-	-
Section 7 Licensing of drivers transporting dangerous goods	No	-	-		-	-	-
Local Government Act 1993							
Section 68 What activities, general, require the approval of council	No	-	-		-	-	-
Section 68A Operation of a system of sewage management	No	-	-		-	-	-
Roads Act 1993							
Section 138 Works and structures – permit to undertake works to roads	Yes	TBC	TBC	TBC	TBC	Construction Manager	TBC
National Parks and Wildlife Act 1974							
Section 90 Aboriginal heritage impact permit	No	-	-	-	-	-	-
Heritage Act 1977							
Section 60 Applications for approval	No	-	-	-	-	-	-

Relevant legislation	Applicable to the project (yes/no)	Permit/licence/Approval Number/registration certificate	Commencement date	Expiry date	Surrender requirements	Project custodian	Project briefing date
Section 65A Applications for modification	No	-	-	-	-	-	-
Section 139 Excavation permit	No	-	-	-	-	-	-
Section 170	No	-	-	-	-	-	-
Rural Fires Act 1997							
Section 89 Issue of permits (includes 'hot works' which would constitute lighting a fire)	Yes	Where required	Where required	-	-	-	-
Environment Protection and Biodiversity Conservation Act 1999 (Cth)							
Controlled Activity Approval	No	-	-	-	-	-	-
Other							

Attachment I: Risk Assessment and Impacts Register

All environmental issues have been assessed in accordance with Table 20. The development of this table has been guided by the HSEMS Environmental Aspects and Impacts Register. The risks must be reassessed following the consideration of control measures.

Table 20: Risk Assessment and Aspects and Impacts Register

Item	Aspect	Impact	Inherent control/mitigation			Construction controls	Residual control/mitigation		
			Impact	Probability	Rating		Impact	Probability	Rating
Environmental planning approvals and licences	Not identifying appropriate approvals/licences required or proceeding without them.	Project operations delayed, infringements and reputational loss, breach of contract. Impact on client and stakeholder relationships and ability to secure future licencing.	Moderate	Occasional	Amber	Planning approval has been granted for the Sydney Metro – Western Sydney Airport (SSI 10051 ER/ Endorsement and Approval of CEMP and procedures completed prior to construction commencing Low Impact works to be approved by Sydney Metro and/or ER for works prior to CEMP approval Project specific CEMP including environmental permits and approvals register Contract risk profile, pre-tender environmental review Project Induction and education on licence requirements Risk assurance program, SERs, Environmental Primary Standards, ERAPs	Moderate	Remote	Green
	Non-compliance with conditions of approval.	Activity or works delay, infringements, prosecution and regulatory action. Impact on client and stakeholder relationships.	Material	Occasional	Amber	CEMP, assurance programme and tracking/reporting metrics ECMs Compliance Matrix against CoAs, REMMs, CEMF, Staging report requirements	Material	Remote	Green
	Design non-compliance with	Programme delay, additional costs, rework and client dissatisfaction.	Material	Occasional	Amber	Design Management Plan, environmental design review and supply chain agreements.	Moderate	Remote	Green

Item	Aspect	Impact	Inherent control/mitigation			Construction controls	Residual control/mitigation		
	environmental approvals.					Inclusion of environmental requirements within design packages			
	Environmental boundaries and battery limits.	Activities undertaken outside of approved environmental or geographic footprint, outside of areas of acquisition or outside of contractual and property boundaries.	Severe	Occasional	Amber	CEMP, assurance program, Design Management Plan, contract documents and geospatial data management systems. ECMs, Environmental Reviews through client Specific review against EIS	Moderate	Improbable	Green
Noise	Noise from general construction activities resulting in impact to residents. Plant and equipment causing excessive noise	Disturbance to residents or neighbouring businesses; potential for complaints.	Moderate	Occasional	Amber	Environmental Primary Standards and CEMP. St Marys DNVIS developed Noise and Vibration Management Procedure (ERAP) Works to be staged to minimize works required to be completed out of hours to reduce impacts to receivers.	Moderate	Remote	Amber
	Non-compliance with noise limits, licence or conditions requirements.	Project delays, breach of approvals or licence conditions, infringements and reputational loss.	Moderate	Probable	Amber	Consult with the community in relation to upcoming activities that may result in concern. Respond to community enquiries and complaints in accordance with Sydney Metro requirements	Moderate	Remote	Amber
	Breach of works hours or unapproved out-of-hours works.	Project delays, breach of approvals or licence conditions, infringements and reputational loss.	Material	Probable	Amber	Noise monitoring during high noise activities and for compliance to project goals Reduction of high noise intensive plan through design and construction methodology Gain approvals required to work outside standard approved hours from Sydney Metro in line with SM WSA OOHW Protocol. Offer AMMs identified from OOHWs	Material	Remote	Amber

Item	Aspect	Impact	Inherent control/mitigation			Construction controls	Residual control/mitigation		
						Implement noise mitigation strategies for out of standard hours work (as per DNVIS and OOHW Permits). Site vehicles to have non-tonal movement alarms Noise efficient equipment to be used on site. Radio communication sets to be set with low volume No swearing, dropping tools from height or loud music Pre-mobilisation acceptance/inspection forms for all plant prior to use on site Pre-start, tool-box talks and ref ECM			
Vibration	Vibration-intensive activities carried out on the site, such as impact piling and vibratory rolling.	Property damage and reputational loss. Client dissatisfied and reputation lost	Severe	Occasional	Red	Environmental Primary Standards, CEMP and ERAP. St Marys DNVIS developed No vibration intensive activities to be completed Residual impact management, including additional respite offers, will be investigated and addressed in the project DNVIS, and subject to consultation with affected sensitive receivers as required by MCoAs. Reduction of vibratory work and plant through design and construction methodology	Moderate	Remote	Amber
	Breach of vibration limits or conditions.	Project delays, breach of approvals or licence conditions, infringements and reputational loss.	Severe	Occasional	Red	Environmental Primary Standards, CEMP and vibration monitoring programme. St Marys DNVIS developed Determine vibration limits and structure/receiver offset distances Vibration Monitoring Regime	Moderate	Occasional	Amber

Item	Aspect	Impact	Inherent control/mitigation			Construction controls	Residual control/mitigation		
						Methods to be modified/reviewed to ensure noise emissions during work and vibration mitigation measures meet planning approval requirements (as required)			
	Vibration exceedance leading to damage to property, damage to significant fabric and heritage fabric	Project delays, breach of approvals or licence conditions, infringements, property damage, cease all works	Highly Severe	Occasional	Red	Building Condition Survey, heritage assessment, dilapidation survey completed, ERAP St Marys DNVIS developed Real time vibration monitoring in place, with suitable alarms when set vibration levels encroached. Exclusion zone with minimum distances for plant proximal to Goods Shed Reduction of vibratory work and plant through design and construction methodology Any damage to adjacent buildings that becomes apparent will be reported and work stopped and checked against the Dilapidation Report	Moderate	Occasional	Amber
	Exceedance of blasting criteria.	Community complaints, project delays, breach of approvals or licence conditions, infringements and reputational loss. Damage to property	Severe	Occasional	Green	Environmental Primary Standards, CEMP. No Blasting within scope	Severe	Remote	Green
Water quality	Erosion and sedimentation as a result of ground disturbance from construction activities. Non-compliant water entering waterways	Degradation of local watercourses. Increased turbidity in local waterways resulting in impact on aquatic life. Infringement notification. Project delays, breach of approvals or licence conditions, breach of	Severe	Occasional	Amber	Environmental Primary Standards, CEMP, ERAP, Erosion and Sediment (ERSED) Plans and SERs. Install ErSed controls within the project area Ensure measures are inspected and maintained as the works progress and also prior and post rainfall events.	Moderate	Remote	Green

Item	Aspect	Impact	Inherent control/mitigation			Construction controls	Residual control/mitigation		
		contract, infringements and reputational loss.				Conduct regular inspection of drains and replace protections where required. Induction, Pre-start and tool-box talks Relevant people to undertake Erosion and Sediment Control Training Minimise stockpiling / use temporary stockpiling Designated stockpile locations identified on ECMs away from waterways and drains Environmental Team or deligate to approve all water discharges form site Educate site staff on requirements and consequences of prosecution			
	Fuel, chemical and hazardous materials spills causing off-site impacts to the environmental values of waterways.	Destruction of aquatic habitat, loss of aquatic species, breach of approvals or licence conditions, breach of contract, infringements and reputational loss.	Severe	Occasional	Amber	Environmental Primary Standards, CEMP ERAP, and SERs. All chemical storage to be done in accordance with ERAP Hazardous Goods and Materials including Dangerous Good Requirements	Material	Remote	Green
	Disturbance of acid sulphate soils resulting in off-site impacts.	Destruction of aquatic habitat, loss of aquatic species, breach of approvals or licence conditions, breach of contract, infringements and reputational loss.	Highly Severe	Remote	Green	Environmental Primary Standards, CEMP, No Acid Sulphate soils identified within construction boundary	Material	Remote	Green
	Discharge of concrete-curing chemicals during pavement operations.	Degradation of water quality and mortality of aquatic organisms. Infringement notice	Severe	Occasional	Amber	CEMP and work activity environmental procedures. ERSED plans Install ErSed controls within the project area Ensure measures are inspected and maintained as the works progress and also prior and post rainfall events.	Moderate	Remote	Green

Item	Aspect	Impact	Inherent control/mitigation			Construction controls	Residual control/mitigation		
						Conduct regular inspection of drains and replace protections where required. Induction, Pre-start and tool-box talks Concrete washout locations to be established and communicated prior to wash out.			
Groundwater and Geology	Groundwater drawdown, pollution and impact of groundwater dependent ecosystems. Ground water entering excavations without appropriate safeguards onsite could lead to ground water contamination. Spreading contamination via groundwater management.	Off-site environmental impacts, regulatory action, reputational loss, programme delays and breach of contract	Severe	Remote	Green	Groundwater anticipated within EIS to be 2-7m. Maximum piling depth currently <14m below ground surface. Not anticipating interaction with groundwater during works. Safeguards to be installed as per design and purpose to protect (as required) Stop works process to be implemented if ground water is encountered. Preference is to pump out captured groundwater and reuse on site or dispose to a licenced facility off site as outlined in the WRS. Toolbox training on site procedures for water discharge	Moderate	Remote	Green
Supply chain environmental performance	Supply chain unable to deliver environmental obligations.	Off-site environmental impacts, regulatory action, reputational loss, programme delays and breach of contract.	Material	Occasional	Amber	Supply chain assessment, contract documentation and supply chain awareness programmes.	Moderate	Remote	Green
Transport - Construction	A lack of mitigation measures and management systems in relation to traffic management leads to frequent non-compliance with	Traffic incidents due to change in conditions, community impacts, breach of approvals or licence conditions, reputational loss, program delays and additional costs.	Moderate	Probable	Red	CTMP in line with CTMF TCP and ROLs as required and approved by Traffic Management Working group Respond to community enquiries and complaints in accordance with Sydney Metro requirements ERAP	Material	Remote	Green

Item	Aspect	Impact	Inherent control/mitigation			Construction controls	Residual control/mitigation		
	the Planning Approval.								
Hazardous materials and chemicals storage	Water and land contamination from storage activities in operational facilities.	Off-site impacts, land contamination, remediation costs, breach of approvals or licence conditions, and regulatory action.	Severe	Remote	Amber	Environmental Primary Standards, CEMP, ERAP, and SERs. Compliance to NSW guidelines	Moderate	Remote	Green
Biodiversity	Unauthorised works or removal of vegetation.	Loss of habitat and vegetation, breach of contract, regulatory action, community impacts, loss of reputation, and additional rehabilitation costs.	Material	Occasional	Amber	Environmental Primary Standards, CEMP, ERAP, SERs and Design Management Plan. SM Tree Removal Form and Approval prior to commencement of removal Removal and reports to be completed by qualified arborist	Material	Remote	Green
	Unapproved removal of threatened species.	Loss of threatened species, breach of contract, regulatory action, community impacts, loss of reputation and programme delays.	Severe	Remote	Amber	Environmental Primary Standards, CEMP and SERs. No threatened species identified in construction boundary	Material	Improbable	Green
	Interaction with fauna species during the project and activities.	Death or injury to fauna species, loss of reputation, community concern and regulatory action.	Material	Probable	Green	Environmental Primary Standards, CEMP, ERAP and SERs. No fauna identified in construction boundary	Material	Remote	Green
	Unapproved access to sensitive areas	Reputation loss, regulatory action and fines, relationship loss. Rework design	Severe	Remote	Green	Communication with sensitive area owners, approval pathway established No sensitive areas identified in construction boundary	Moderate	Remote	Green
	Revegetation and rehabilitation completed for projects and operational facilities.	Incomplete or ineffective revegetation leading to erosion and sedimentation, breach of contract and additional costs.	Material	Probable	Green	Environmental Primary Standards, CEMP and SERs. Contractual requirements as per Staging report and CoAs. SM commitment of replacement trees 2:1 in certified areas	Material	Remote	Green

Item	Aspect	Impact	Inherent control/mitigation			Construction controls	Residual control/mitigation		
Biosecurity	Pests, weeds and pathogens spread as a result of business activities.	Degradation of native vegetation and flora, death of fauna species and loss of habitat.	Material	Remote	Amber	Environmental Primary Standards, ERAP, CEMP Plant to be checked for weeds and seeds in site pre-mobilisation acceptance form	Material	Improbable	Green
Heritage	Interaction with unknown heritage items associated with projects and operational facilities, including visual.	Damage, destruction or loss of utility of heritage items or areas, stakeholder and community concern.	Moderate	Probable	Amber	Environmental Primary Standards, CEMP, Heritage Management Procedure, SERs. Safety in Design workshops interfacing groups (Sydney Trains, TfNSW, Sydney Metro) Community consultation Pre-Start, tool-box talks training on heritage management protocols Exclusion zones to be erected to protect Jib Crane and Goods Shed from potential damage Label any known heritage items on ECMs and signposted onsite If suspected heritage item encountered. Works to stop immediately and Environment Manager contacted. Further site specific heritage management requirements are detailed in the Heritage Management Protocol Undertake vibration compliance as per the DNVIS when high vibration generating activities are required.	Moderate	Remote	Green
	Discovery of unknown heritage items associated with projects.	Unauthorised damage or impact to heritage items, project delays, regulatory actions and community concerns.	Material	Probable	Red		Material	Occasional	Amber
	Interaction with known heritage items associated with projects and operational facilities.	Unauthorised damage or impact to heritage items, project delays, regulatory action and prosecution, reputation damage and community concerns.	Severe	Remote	Red		Moderate	Remote	Amber
Land contamination	Management of contaminated or untreated materials.	Non-compliant material and contamination causing on-site or off-site environmental damage, project delays, regulatory action and community concern.	Material	Occasional	Amber	Environmental Primary Standards, pre-contracts and tender assessment, supply chain contracts, Remediation Action Plans (where required) and supply chain audits. Hazmat inspections materials would be made during construction to determine the presence of visible asbestos. Contaminated materials will be isolated and handled separately to avoid cross contamination. Implement	Moderate	Occasional	Green

Item	Aspect	Impact	Inherent control/mitigation			Construction controls	Residual control/mitigation		
						recommendations from waste classification and/or contamination reports.			
	Non-compliance with treatment plans and procedures for contaminated materials or facilities.	On-site and off-site environmental damage, project delays, breach of contract, additional remediation costs and regulatory action. Classification of material is changed and disposal/ recovery options altered, costs incurred associated with disposal of higher classification of waste.	Material	Remote	Amber	Environmental Primary Standards, pre-contracts and tender assessment, supply chain contracts, Remediation Action Plans (where required), supply chain audits and QMS implementation. Classification of materials to be completed prior to any removal off site, retested if cross-contamination occurs. Hazmat inspections materials would be made during construction to determine the presence of visible asbestos / contaminated material. Contaminated materials will be isolated and handled separately to avoid cross contamination. Contaminated materials to be disposed of at appropriately EPL licenced facility by licenced contractor.	Material	Remote	Green
	Potential for discovery of unexpected contaminated material during construction.	On-site and off-site environmental damage, project delays and additional remediation costs.	Material	Probable	Amber	Environmental Primary Standards, CEMP, Unexpected Contaminated Finds protocol and SERs. If contaminated material is encountered, all works are to stop in the vicinity of the find and the unexpected finds procedure is to be implemented.	Moderate	Occasional	Green
Waste	Waste disposal during construction. Unlawful spoil transport off site.	Incorrect disposal of waste, further costs incurred for classifications and disposal, and regulatory action. Infringement notices Land contamination, community impacts, breach of contract, breach	Severe	Probable	Amber	Environmental Primary Standards, pre-contracts and tender assessment, supply chain contracts, ERAP and waste audits. All material that requires off-site disposal to be appropriately tested and classified against the Waste Classification Guidelines (NSW EPA, 2014) Removal of wastes from the site would only be undertaken by a licensed	Material	Remote	Green

Item	Aspect	Impact	Inherent control/mitigation			Construction controls	Residual control/mitigation		
		of approvals or licence conditions, programme delays and additional costs.				contractor as required by the POEO Act and with appropriate approvals, if required, for contaminated materials, etc Sustainability targets to minimise spoil and waste generation Segregation of materials as per classification to avoid cross-contamination Audits of waste facilities and practices, and ensure accurate waste records are retained			
Resource and energy use	Energy consumption by construction plant and operation of site compound facilities.	Inappropriate energy use, waste of energy resources, energy wastage costs and increased greenhouse gas emissions.	Moderate	Occasional	Amber	Environmental Primary Standards, pre-contracts and tender assessment, supply chain contracts, energy and resource strategies, sustainability ratings tools and Sustainability SDG targets.	Moderate	Remote	Green
	Water usage during construction activities and facility operations.	Excess usage of potable water for construction activities leading to a decline in the amount of potable water.	Moderate	Occasional	Amber	Environmental Primary Standards, pre-contracts and tender assessment, supply chain contracts, energy and resource strategies. Sustainability SDG targets. Utilisation of non-potable water for construction activities	Moderate	Remote	Green
	Resource usage (for example, building materials, water, fuels), waste generation and disposal.	Depletion of resources due to wastage (for example, water wastage, no recycling, poor management of procurement, ineffective removal of off-cuts and waste).	Moderate	Occasional	Amber	Environmental Primary Standards, pre-contracts and tender assessment, supply chain contracts, energy and resource strategies. Sustainability SDG targets. Audits of waste facilities and practices, and ensure accurate waste records are retained	Moderate	Remote	Green

Item	Aspect	Impact	Inherent control/mitigation			Construction controls	Residual control/mitigation		
Air quality	General construction works, such as site establishment, earthworks, piling and drilling.	High-dust activity in close proximity to residential and commercial premises, dust deposits at sensitive receivers, repairs and clean-up needed, complaints received and regulatory action.	Moderate	Occasional	Amber	Environmental Primary Standards, CEMP and ERAP. Provide dust mitigation measures through water sprays/misting as required. Cover stockpiles that are not to be worked on for a period of greater than 10 days. Erosion and Sediment Control Plans approved before works commence. Stage works to minimise dust generation Where excessive dust is generated work to stop immediately, dust control methods modified and extended to meet impact.	Low	Occasional	Green
	Emissions from plant and equipment.	Health impacts, impacts to off-site sensitive receivers, complaints and regulatory action.	Material	Remote	Amber	Environmental Primary Standards, ERAP, CEMP and supply chain contracts. Plant to meet minimum standards and maintenance Vehicles/Plant to be turned off when not used Pre-mobilisation acceptance forms to be completed Non-compliant vehicles removed from site / repaired. No idling of plant.	Low	Remote	Green
Environmental project delivery resources	Environmental resources do not meet operational requirements.	Inability to manage environmental risks, reputational loss, infringements, programme delays and breach of contract.	Moderate	Occasional	Green	Pre-contracts and tender assessments, executive sign-off and review of resourcing, and environmental team input into project resourcing.	Material	Remote	Green
Reputation with interested parties	Environmental performance does not meet stakeholders or community expectations.	Impacts on future work, community reputation, additional resources and loss of licence to operate.	Material	Occasional	Green	Environmental resourcing and capability, EMP, Environmental Primary Standards	Low	Remote	Green

Item	Aspect	Impact	Inherent control/mitigation			Construction controls	Residual control/mitigation		
Sustainability, Climate Change and GHG	Environmental management systems in relation to waste management leads to excessive waste generation, and inappropriate waste classification and disposal.	Impacts on future work, community reputation, reputational loss, additional resources, non-compliance to contractual requirements	Material	Remote	Green	Sustainability Management Plan Sustainable Design Guideline (SDG) requirements. Project induction, Pre-start, Tool-box talks	Material	Remote	Green
Land use and Property	Environmental management systems in relation to land use and property lead to land use and property impacts outside of project approval.	Impacts on future work, community reputation, additional resources, reputational loss.	Material	Remote	Green	Works outside project footprint to be assessed by SM-WSA prior	Material	Improbable	Green
Landscape and Visual Impact	Unreasonable visual impacts on the surrounding community, landscape features and poor landscape design outcomes.	Community reputation, potential complaints, non-compliance to contractual requirements.	Material	Remote	Green	Screening to be erected around long term work areas. SM branded hoarding to be erected Work areas to be kept clean and tidy Lighting required during night works shall be directed towards the work area and are from adjacent sensitive receivers Graffiti to be removed in a timely manner	Material	Remote	Green
Social and economic	Amenity impacts not appropriately mitigated or managed lead to unreasonable impacts on the community.	Community reputation, potential complaints, non-compliance to contractual requirements, and project delays.	Material	Remote	Green	Screening to be erected around long term work areas. SM branded hoarding to be erected Work areas to be kept clean and tidy Lighting required during night works shall be directed towards the work area and are from adjacent sensitive receivers Graffiti to be removed in a timely manner	Material	Remote	Green

Item	Aspect	Impact	Inherent control/mitigation			Construction controls	Residual control/mitigation		
						Community consultation to be undertaken in accordance with the CLMP and SM requirements ERAP and CEMP			
Cumulative Impacts	Cumulative impacts leads to excessive impacts on local community, community construction fatigue	Community reputation, potential complaints, non-compliance to contractual requirements, and project delays.	Moderate	Occasional	Amber	Community consultation to be undertaken in accordance with the CLMP and SM requirements Consult with the community in relation to upcoming activities that may result in concern. Respond to community enquiries and complaints in accordance with Sydney Metro requirements Liaise with interfacing working groups to minimise cumulative community impacts	Moderate	Remote	Green

Table 21: Risk assessment likelihood and consequence matrix

Probability scale	(1) Improbable	(2) Remote	(3) Occasional	(4) Probable	(5) Certain
	2	4	8	16	32
Likelihood	10%	25%	50%	75%	100%
Environmental impact scale	**(1) Low**	**(2) Moderate**	**(3) Material**	**(4) Severe**	**(5) Highly severe**
	2	4	8	16	32
Detail	Low impact to isolated area	Contained low impact	Uncontained impact, able to be rectified in the short term	Extensive hazardous impact requiring long-term rectification	Uncontained hazardous impact with residual effect

Table 22: Red–amber–green assessment matrix

	Environmental impact >	(1) Low	(2) Moderate	(3) Material	(4) Severe	(5) Highly severe
v Probability		2	4	8	16	32
(5) Certain	32	64	128	256	512	1024
(4) Probable	16	32	64	128	256	512
(3) Occasional	8	16	32	64	128	256
(2) Remote	4	8	16	32	64	128
(1) Improbable	2	4	8	16	32	64

Attachment J: Emergency preparedness and response

Table 23 outlines the types of environmental emergencies that could occur on this site.

Table 23: Emergency preparedness and response procedures

Emergency	Preparation	Response	Responsibility
Significant adverse dust event due to weather conditions (high winds)	• Monitor meteorological conditions for the area and develop contingency for wind speeds in excess of 16m/s (55km/h); • Ensure high-wind 'stop works' protocols are in place; • Establish contingency strategy for additional dust control measures, such as additional water carts, dust suppressants and stockpile covers.	• Cease dust-generating activities under direction of the Environmental Manager / Environmental Coordinator or Site supervisor until adverse conditions subside; • Deploy additional mitigation measures to exposed areas, stockpiles and other dust-generating items (for example, water sprayed or covered).	• Site Supervisor; • Environmental Manager; • Environmental Coordinator.
Discovery of friable asbestos	• Review previous land uses and environmental reports for potential for friable asbestos; • Include asbestos awareness in the site induction where the potential exists; • Include contingency in relevant work procedures and SWMSs; • Identify potential service providers for asbestos control and removal.	• Quarantine suspected area; • Cover or provide dust mitigation strategy; • Engage licensed removal and disposal organisation; • Complete post-removal verification.	• Project Manager; • Site Supervisor; • Environmental Manager; • Safety Representative.
Flooding	• Monitor meteorological conditions and develop contingency strategy for rainfall greater than 100mm in 24 hours or potential for greater than 1in 5 average recurrence interval (ARI);	• Recover materials washed from site, including sediment and other waste; • Check effectiveness of erosion and sedimentation devices and other	• Construction Manager; • Site Supervisor; • Environmental Manager.

Emergency	Preparation	Response	Responsibility
	• Consultation with NSW State Emergency Services and relevant local councils to ensure consistent approaches to the management of flood events; • Secure all chemicals, fuels and other hazardous substances in secured containers and store within a sealable shipping container; • Remove plant and equipment from low-lying areas; • Secure plant that cannot be removed; • Provide flood-proofing to excavations at risk of flooding during construction, where reasonable and feasible, such raised entry into shafts or pump out facilities to minimise ingress of floodwater into shafts and the dive structure; • Review of site layout to avoid obstruction of overland flow paths and limit the extent of flow diversion required; • Review site drainage flow paths based on current arrangements; • Redirect site drainage to prevent flooding of residential/business premises; • Ensure site drainage does not concentrate surface flow;	flood controls and maintain where required and safe to do so.	

Emergency	Preparation	Response	Responsibility
	• Review and address the potential for excess water entering the site; • Review and maintain erosion and sedimentation controls;		
Damage to temporary erosion and sediment controls during rainfall	• Plan controls to be suitable for expected conditions; • Ensure sufficient materials, labour and plant are available for additional controls.	• Environmental Manager and Site supervisor to review the site; • Repair or replace damaged controls within 24 hours of detection or immediately if inclement weather current.	• Site Supervisor; • Environmental Manager.
Spill (less than 20L) of hazardous or toxic substance	• Incorporate awareness training of appropriate response and procedures into the project induction; • Ensure an SDS is on site for all materials and kept up to date; • Ensure an adequate supply of absorbent materials is available in the site compound and on vehicles at work locations.	• Report spills immediately to the Site supervisor and/or the Environmental Manager; • Attempt to limit or contain the spill: using sand bags to construct a bund wall; using absorbent material; temporarily sealing cracks or leaks in containers; or using geotextile or silt fencing to contain the spill; • Site supervisor and Supervisors to coordinate the response, clean up and disposal of the material; • Dispose of the material in accordance with the manufacturers' recommendations and applicable legislation.	• Site Supervisor; • Environmental Manager.
Major spill (greater than 20L) of hazardous or toxic substance off site or to environmentally sensitive area	• Incorporate awareness training of appropriate response and procedures into environmental and safety induction;	• Report spill immediately to Project Manager and/or who will notify TfNSW; • Attempt to limit or contain the spill: using sand bags to construct a	• Project Manager; • Site Supervisor; • Environmental Manager.

Emergency	Preparation	Response	Responsibility
	• Ensure an SDS is on site for all materials and kept up to date; • Ensure an adequate supply of absorbent materials is available in the site compound and on vehicles at work locations; • Display emergency telephone numbers for emergency response organisations/fire brigade prominently around the office and issue them to supervisors; • Make initial contact with relevant organisations at start of project.	bund wall; using absorbent material; temporarily sealing cracks or leaks in containers; using geotextile or silt fencing to contain the spill; or transferring the remaining material; • Implement procedures to notify the relevant authorities; • Site Supervisor to coordinate the response and clean-up; • Call NSW Fire and Rescue or emergency organisations if spill cannot be controlled by site resources; • Implement evacuation procedures to remove non-essential personnel from the affected area; • Inform on-site client personnel of the incident; • Internal reporting as per potential Class 1 matter; • Establish access and egress to the area to ensure the appropriate vehicles have effective access and congestion is minimised; • Assist, where required, the senior officer from NSW Fire and Rescue/emergency organisation who will assume control of the operation; • Commence data gathering and investigation once the emergency is contained.	

Emergency	Preparation	Response	Responsibility
Bushfire/Fire	• Incorporate awareness training of appropriate response and procedures into environmental and safety induction; • Include contingency for water carts and water trailers and their availability for local services as necessary; • Maintain fire extinguishers that are clearly labelled and distributed around site compound and vehicles; • Conduct training in the use of fire extinguishers and which one to use for each type of fire; • Stock adequate first aid supplies; • Display emergency telephone numbers for emergency response organisations/NSW Fire and Rescue prominently displayed around office and issued to supervisors; • Make initial contact with relevant organisations at the start of the project.	• For small fires, attempt to extinguish the fire or limit its spread with available fire extinguishers or water hoses if appropriate; • Inform Site Supervisor immediately; • Inform local fire services for all fires as a precautionary measure – 000 in emergencies; • Site Supervisor to contact the client and emergency services where necessary as a precautionary measure; • All personnel in the vicinity to assemble in the evacuation assembly area, with a head count performed; • Handle any resulting fuel or chemical spill as detailed above; • Site Supervisor to coordinate with emergency services and provide assistance as required.	• Site Supervisor; • Environmental Manager.
Vibration causing structural damage	• Choose correct plant when working near structures; minimise size and impact; • Use safe working distances during the planning phase; • Implement vibration monitoring at the start of vibration-generating	• Cease activities causing vibration under direction of the Environmental Manager or Site Supervisor; • Evacuate any occupants of buildings with due consideration to safety and secure the area to prevent unauthorised access;	• Environmental Manager; • Project Manager.

Emergency	Preparation	Response	Responsibility
	works to ensure compliance with standards.	• Undertake a structural assessment and, if there is any damage associated with construction, agree on rectification work.	
Unapproved clearing or damage to protected vegetation, threatened or endangered flora	• Clearly demarcate site boundaries; • Clearly demarcate clearing areas and brief site personnel; • Identify/mark vegetation to be retained or protected; • Identify species that may be impacted and include material within the project induction; • Include requirements within construction planning documentation.	• Immediately cease activities; • Engage a consultant to assess damage to vegetation and the presence of any endangered or threatened communities.	• Site Supervisor; • Environmental Manager.
Injury or death to protected, endangered or threatened fauna	• Identify potentially impacted species prior to starting on site; • Identify species that may be impacted and include material within the project induction; • Review and inspect vegetation to be cleared prior to clearing; use an ecologist or spotter where there is the potential for endangered or threatened species; • Engage with local vet and/or WIRES representative on the appropriate contact and procedure; • Implement a site procedure for the short-term management of injured fauna.	• Immediately cease activities upon discovery of injured fauna; • Implement procedure for short-term stabilisation and transport to vet or WIRES; • Undertake additional vegetation inspection to identify any remaining fauna prior to restarting work.	• Site Supervisor; • Environmental Manager.

Emergency	Preparation	Response	Responsibility
Damage to or destruction of Indigenous heritage items	• Ensure site investigations detail any heritage items on or in proximity to the site; • Include awareness material within the project induction; • Develop a 'stop works' protocol for any heritage find on site.	• Cease works and stabilise the area, under the direction of the Environmental Manager or Site Supervisor. The Environmental Manager is to report the remnants to the client and regulatory authority; • Contact an archaeologist to assess the significance and archaeological potential of the uncovered feature.	• Environmental Manager.
Damage to or destruction of European heritage items	• Ensure site investigations detail any heritage items on or in proximity to the site; • Develop a 'stop works' protocol for any heritage find on site.	• Cease works and stabilise the area, under the direction of the Environmental Manager or Site Supervisor; • Contact an archaeologist to assess the significance and archaeological potential of the uncovered feature.	• Environmental Manager.

Attachment K: Unexpected Contaminated Finds Procedure

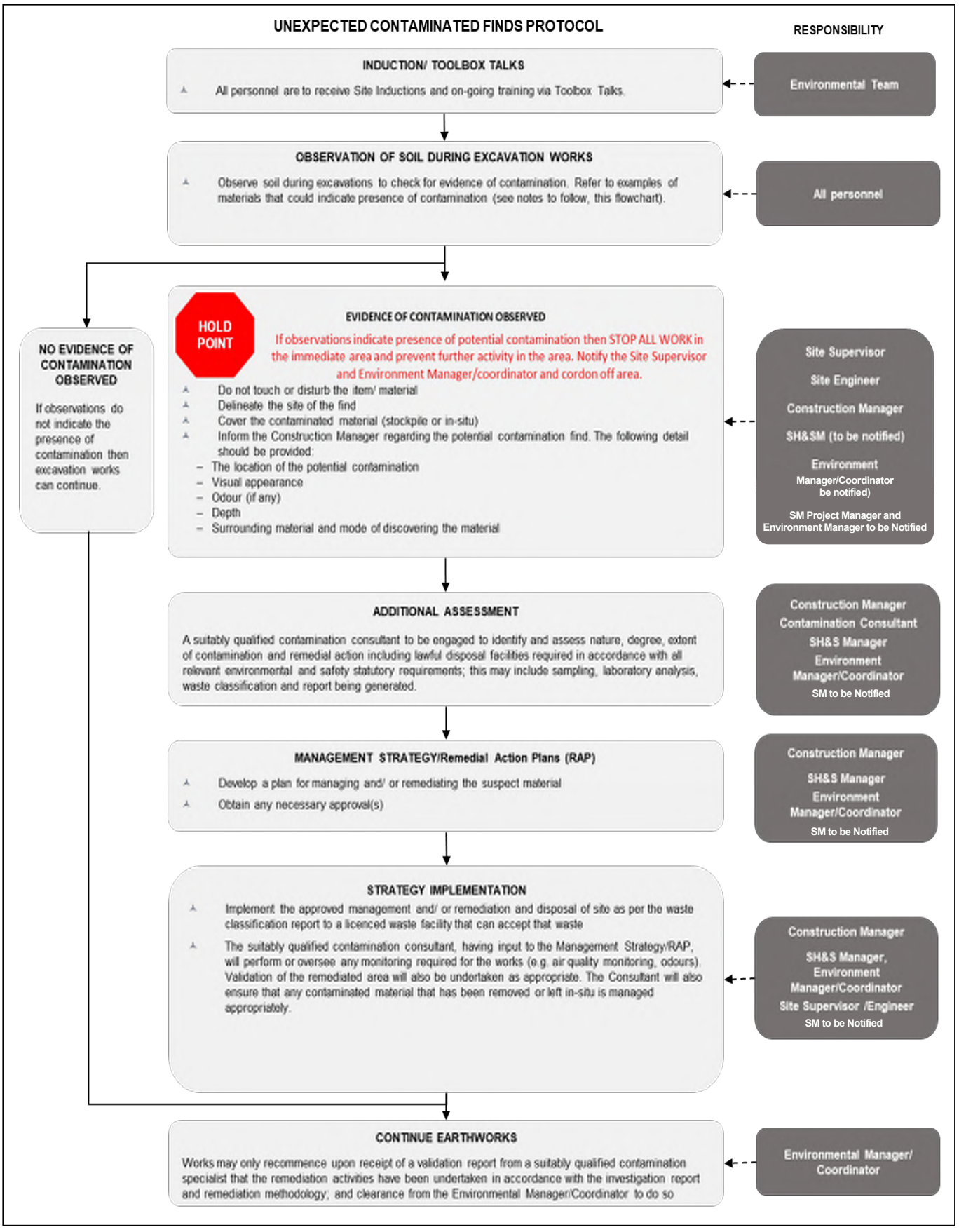


Figure 14: LORAC Unexpected Contaminated Finds Procedure

Attachment L: Flora and Fauna Response Procedure

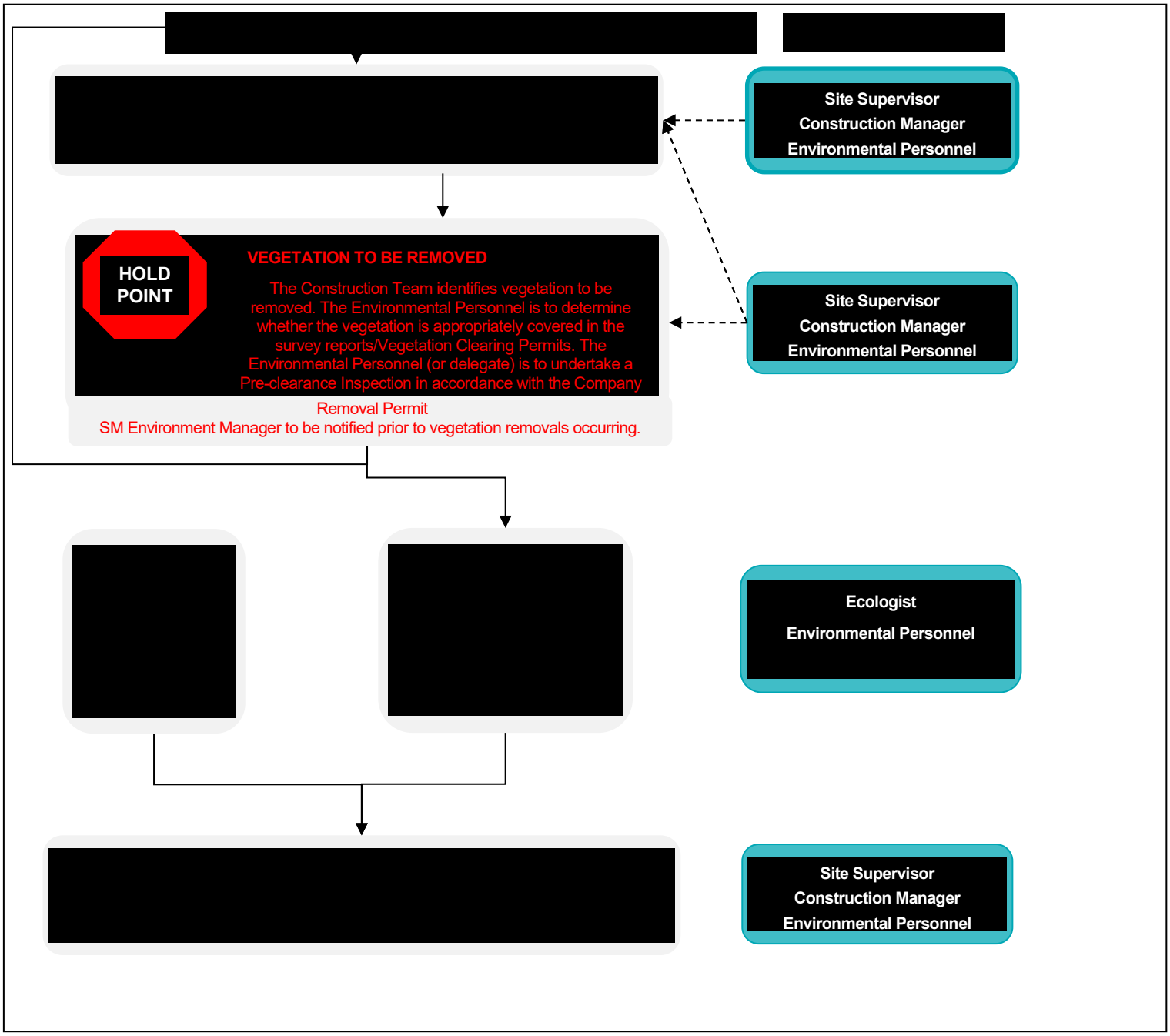


Figure 15: LORAC Flora and Fauna Response Procedure

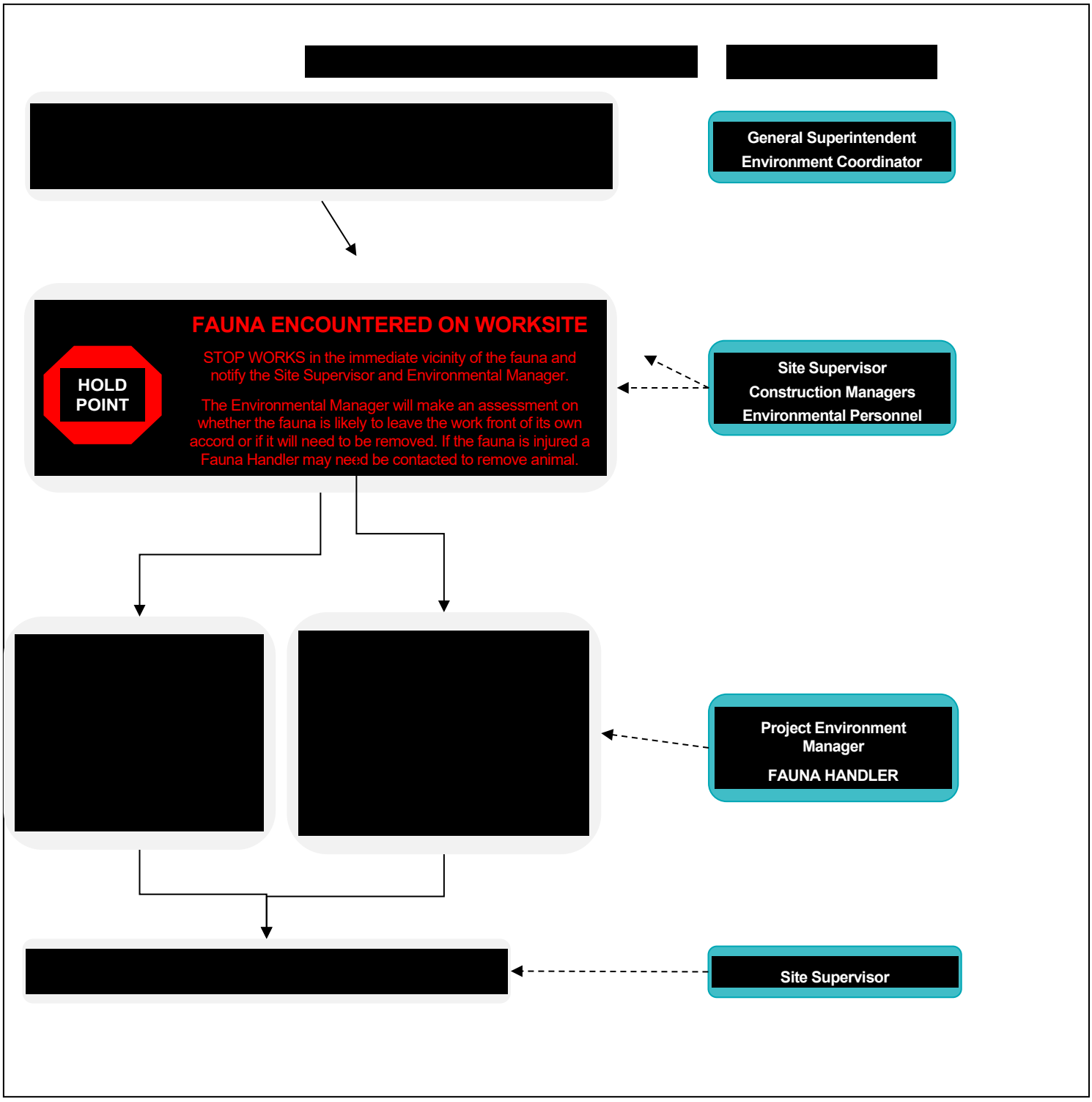


Figure 16: LORAC Fauna Response Procedure

Attachment M: Environmental Inspection

E-T-8-1227 ENVIRONMENTAL INSPECTION REPORT

CONTRACT/PROJECT No.:	WORK LOCATION:
DATE:	TIME:

A = ACCEPTABLE AR = ACTION REQUIRED N/A = NOT ASSESSED

No.	ITEM	CONFORMANCE			RISK CLASS	DESCRIPTION OF NON-COMPLIANCE/ CORRECTIVE ACTION	CORRECTIVE ACTION REQUIRED	RESPONSIBLE	TARGET DATE
		A	AR	NA					
GENERAL									
1	Are good house-keeping practices in place in Work Areas?								
2	Vehicles parked in designated parking zones?								
3									
4									
FIRE CONTROLS									
5	Hot works conducted under Permit?								
6	Any evidence of unapproved fires onsite or offsite along Project boundaries?								
7	Fire extinguishers/equipment available and maintained? (vehicles/work areas)								
DUST									
8	Are fugitive dust emissions travelling beyond Project boundaries?								
9	Are agreed dust control measures being implemented to minimise dust emissions (e.g. – sufficient number of watercarts, handling/transport of materials, application of dust suppressants etc.)?								
10									
11									
AIR POLLUTION									
12	Do excessive black smoke emissions from vehicles and equipment occur >20 seconds?								
13									
MAINTENANCE / EQUIPMENT / REFUELLING									
14	Are vehicles, equipment and plant being serviced on time and according to manufacturer specifications? Maintenance logs up to date & available to view?								
15	All gen-sets and diesel tanks are self contained or in 110% capacity bund with no evidence of water or litter pooling within?								
16	Are refueling activities taking place at designated zones with spill kits, drip trays and fire extinguishers present?								
WASTE MANAGEMENT									
17	Sufficient waste receptacles available to segregate waste streams (e.g. oily rags, plastics, wood, steel, 'butt out bins') & are they close to work areas?								
18	Are waste streams being segregated into clearly labelled receptacles?								
19	Do all waste receptacles have appropriate lids and/or coverings?								
20	Any evidence of unreported leaks/spills (e.g. – sewerage overflows/leaks, hydrocarbon spills and vehicle wash down areas and chemical storage areas)?								
21	Are concrete washout areas installed in agreed locations and are they being maintained and emptied?								
22									
23									
CHEMICAL MANAGEMENT AND SPILLS									
24	Are hazardous chemicals/liquids store inside a bund that satisfies the criteria - 110% of the max. storage or 10% of double skinned tank?								
25	Are spill kits (hydrocarbon and/or chemical) located within each Work Area and/or with major vehicles? Are they free from litter and water?								
26	Hazardous materials segregated (no incompatible materials together) and have correct signage, fire extinguishers, ventilation, correct containers & labels)?								
27									
28									
EROSION AND SEDIMENT CONTROL									
29	Are Erosion Control Structures (ESCs) installed as per the current ESCP?								
30	Are all controls being installed correctly and maintained and have a minimum of 75% capacity?								
31	Is there evidence of erosion/sedimentation or surface water discharge occurring external to the Project Footprint?								
32	Are sediment basins of adequate size and constructed so that all water on-site is draining to them?								
33	Is there evidence of sediment tracking on external public roads?								
34	Is the ESCP up to date for the scope of works and catchment areas?								
35	Clean water diverted to approved locations and dirty/contaminated water contained? No evidence of contaminated water leaving site?								

No.	ITEM	CONFORMANCE A	CONFORMANCE AR	CONFORMANCE NA	RISK CLASS	DESCRIPTION OF NON-COMPLIANCE/ CORRECTIVE ACTION	CORRECTIVE ACTION REQUIRED	RESPONSIBLE	TARGET DATE
36									
WATER QUALITY AND MANAGEMENT									
37	Collected water treated and tested prior to discharge offsite?								
38									
No.	**ITEM**	**A**	**AR**	**NA**	**RISK CLASS**	**DESCRIPTION OF NON-COMPLIANCE/ CORRECTIVE ACTION**	**CORRECTIVE ACTION REQUIRED**	**RESPONSIBLE**	**TARGET DATE**
39									
FLORA / VEGETATION / WEEDS									
40	Do vehicles have Weed free Certificates and are Weed Inspection Logs up to date?								
41	Are works being carried out within approved cleared boundaries with no unapproved ground disturbance? (i.e. tracks/turning circles etc.)								
42	Is there evidence of adverse impacts to vegetation on-site and up to 5m around site, along Project roads or infrastructure footprints (e.g. - overspray from dust suppression activities, dust settlement, unauthorised clearing)?								
43	Topsoil/ Vegetation/ Weeds are segregated and sign posted?								
44	Physical vegetation protection measures (fencing, flagging tape etc) in place and maintained?								
45									
FAUNA PROTECTION									
46	Are fauna egress points installed in sediment basins and other excavations/trenches?								
47	Is there evidence of vehicular activity or unapproved activities in off-limit areas, known fauna habitats?								
48	During night works is lighting facing downwards and illuminating work areas only?								
49									
50									
NOISE / VIBRATION									
51	Equipment is located/directed away from sensitive areas and where suitable are fitted with sound insulation and/or vibration suppression devices?								
52									
53									
Cultural Heritage									
54	Physical protection measures (fencing, flagging tape etc) in place and maintained?								
55	Is there evidence of unapproved activities or damage to known curltural heritage areas?								
56									
57									
Contaminated land/PASS/ASS									
58	Contamination remediation being undertaken in accordance with approved plan?								
59	Physical controls for known contaminated areas in place and maintained?								
60	All PASS/ASS treatment pads and sumps, maintained as per required specifications?								
61									
VEHICLES AND TRAFFIC									
62	Are vehicles and equipment operating within the approved Project Footprint?								
63									
ADDITIONAL COMMENTS / REQUIRED ACTIONS:									

INSPECTION TEAM:	Risk Class	Environment
SIGNATURE(S):	0	Requirement Complies with system or criteria.
Project Manager or Leader:	1	Major Noncompliance eg: Nil evidence of implementation, departure from documented system requirement, potential or pending failure leading to long term defect or immediate requirement for rectification or change of work method or construction details. Potential prosecution
SIGNATURE:	2	Minor Noncompliance. Eg: Issues with system or criteria requirement establishment or implementation, potential failure leading to possible long term defect or review of work method or construction details.
Note: This form MUST be signed and scanned as electronic copy and saved in the projects Environmental system folder (1430). Hard copy to remain in project file for no less than 12 months. All non-compliances must be uploaded into the Corrective Action Register (E-T-8-	3	Opportunity for Improvement (minor omissions, oversights, identification of recommendations to improve, etc)

Attachment N: Environmental Controls Map & CEMF checklist

Environmental Control Maps are live documents that will be updated to reflect construction methodology, potential impacts on receiving environment and the associated mitigation measures. A copy of relevant Environmental Control Maps will be available on the project drive.

EMF 3.6.c. Checklist:

The Principal Contractor will prepare and implement site based, progressive Environmental Control Maps (ECMs) which as a minimum:

Minimum requirement	Completed
i. Depicting the current representation of the site;	✓
ii. Indicate which environmental procedures, environmental approvals, or licences are applicable;	✓
iii. Illustrate the site, showing significant structures, work areas and boundaries;	✓
iv. Illustrate the environmental control measures and environmentally sensitive receivers;	✓
v. Is endorsed by the Principal Contractors Environmental Manager or delegate;	✓

Minimum requirement	Completed
vi. Include all the training and competency requirements for relevant workers; and.	✓
vii. Be communicated to relevant workers, including sign off the appropriate procedures prior to commencing works on the specific site and / or activity	✓

Attachment O: Environmental Management Plan Guideline Compliance Checklist

Checklist as per '*Guideline for the Preparation of Environmental Management Plans'* Department of Infrastructure, Planning and Natural Resources (2004)

EMP element	Contents	Section within CEMP
Background	Introduction	1
	Project Description	1.2
	EMP Context	2
	EMP Objectives	2.2
	Environmental Policy	5
Environmental Management	Environmental Management Structure and Responsibility	3, 6
	Approval and Licence Requirements	9, Attachment E, Attachment H
	Reporting	17
	Environmental Training	11
	Emergency Contacts and Response	13, Attachment B
Implementation	Risk Assessment	Attachment I
	Environmental Management Activities and Controls	12, Attachment F
	Environmental Management Plans or maps	12.2, Attachment N
	Environmental Schedules, Inspection	Attachment M
Monitor and Review	Environmental Monitoring	17
	Environmental Auditing	15
	Corrective Action	17
	EMP Review	16

Attachment P: Compliance Matrix

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	General	A1	The Proponent must carry out the CSSI in accordance with the terms of this approval and generally in accordance with the: (a) Sydney Metro – Western Sydney Airport Environmental Impact Statement dated 21 October 2020; and (b) Sydney Metro – Western Sydney Airport Submissions Report submitted April 2021.	LORAC	Section 9.2 of the CEMP: Planning Assessments and Approvals
MCoA	General	A2	The CSSI must only be carried out in accordance with all procedures, commitments, preventative actions, performance criteria and mitigation measures set out in the documents listed in Condition A1 unless otherwise specified in, or required under, this approval.	LORAC	Section 9.1 of the CEMP: Project Approval
MCoA	General	A3	In the event of an inconsistency between: (a) the conditions of this approval and any document listed in Condition A1, the conditions of this approval will prevail to the extent of the inconsistency; and (b) any document listed in Condition A1, the most recent document will prevail to the extent of the inconsistency. Note: For the purpose of this condition, there is an inconsistency between a term of this approval and any document if it is not possible to comply with both the term and the document.	LORAC	Section 9.1 of the CEMP: Project Approval
MCoA	General	A4	In the event that there are differing interpretations of the conditions of this approval, including in relation to a condition of this approval, the Planning Secretary's interpretation is final.	LORAC	Section 9.1 of the CEMP: Project Approval
MCoA	General	A5	The Proponent must comply with all written requirements or directions of the Planning Secretary, including in relation to: (a) the environmental performance of the CSSI; (b) any document or correspondence in relation to the CSSI; (c) any notification given to the Planning Secretary under the terms of this approval; (d) any audit of the construction or operation of the CSSI; (e) the terms of this approval and compliance with the terms of this approval (including anything required to be done under this approval); (f) the carrying out of any additional monitoring or mitigation measures; and	LORAC	Section 9.1 of the CEMP: Project Approval

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
			(g) in respect of ongoing monitoring and management obligations, compliance with an updated or revised version of a guideline, protocol, Australian Standard or policy required to be complied with under the terms of this approval.		
MCoA	General	A6	Where the terms of this approval require a document or monitoring program to be prepared, or a review to be undertaken, in consultation with identified parties, evidence of the consultation undertaken must be submitted to the Planning Secretary with the document. The evidence must include:	LORAC, except that Sydney Metro will make all submissions of evidence of the consultation undertaken to the Planning Secretary.	Noted
			(a) documentation of the engagement with the party identified in the condition of approval that has occurred before submitting the document for approval;		
			(b) a log of the dates of engagement or attempted engagement with the identified party and a summary of the issues raised by them;		
			(c) documentation of the follow-up with the identified party(s) where feedback has not been provided to confirm that the party(s) has none or has failed to provide feedback after repeated requests;		
			(d) outline of the issues raised by the identified party(s) and how they have been addressed; and		
			(e) a description of the outstanding issues raised by the identified party(s) and the reasons why they have not been addressed.		
MCoA	General	A7	This approval lapses five (5) years after the date on which it is granted, unless work has physically commenced on or before that date.	LORAC	Noted
MCoA	General	A8	References in the terms of this approval to any guideline, protocol, Australian Standard or policy are to such guidelines, protocols, standards or policies in the form they are in as at the date of this approval.	LORAC	Noted

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	General	A9	Any document that must be submitted or action taken within a timeframe specified in or under the conditions of this approval may be submitted or undertaken within a later timeframe agreed with the Planning Secretary. This condition does not apply to the written notification required in respect of an incident under Condition A41.	LORAC, except that Sydney Metro will facilitate, and involve as necessary, the Contractor in any negotiations with the Planning Secretary on extended timeframes for submissions for conditions and make all submissions to the Planning Secretary.	Section 9.1 of the CEMP: Project Approval
MCoA	Staging	A10	The CSSI may be constructed and operated in stages. Where staged construction and/or operation is proposed, a Staging Report must be prepared. The Staging Report must be submitted to the Planning Secretary for information no later than one (1) month before the lodgement of any CEMP or CEMP sub plan for the first of the proposed stages of construction (or if only staged operation is proposed, one (1) month before the commencement of operation of the first of the proposed stages of operation), unless otherwise agreed with the Planning Secretary.	Not Applicable	Not applicable per Staging Report. Staging report completed by Sydney Metro. LORAC to comply with the Staging Report.

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Staging	A11	The Staging Report must: (a) set out how construction of the whole of the CSSI will be staged, including details of work and other activities to be carried out in each stage and the general timing of when construction of each stage will commence and finish; (b) if staged operation is proposed, set out how the operation of the whole of the CSSI will be staged, including details of each stage and the general timing of when operation of each stage will commence; (c) specify conditions that apply to each stage of construction and operation including how compliance with conditions will be achieved across and between each of the stages of the CSSI; (d) set out mechanisms for managing any cumulative impacts arising from the proposed staging; and (e) for the purposes of informing Conditions C2, C7 and C17, include an assessment of the predicted level of environmental risk and potential level of community concern posed by the construction activities required to construct each stage of the CSSI. With respect to (e) above, the risk assessment must use an appropriate process consistent with AS/NZS ISO 31000: 2018; Risk Management - Guidelines and must be endorsed by the ER. Note: 1. A Staging Report may reflect the staged construction and operation of the project through geographical activities, temporal activities or activity-based staging. 2. The risk matrix must reflect the stages of construction identified in the Staging Report	Not Applicable	Not applicable per Staging Report. Staging report completed by Sydney Metro. LORAC to comply with the Staging Report.
MCoA	Staging	A12	The CSSI must be staged in accordance with the Staging Report, as submitted to the Planning Secretary for information.	LORAC to the extent required by the Staging Report	Section 9.2 of the CEMP: Planning Assessments and Approvals
MCoA	Staging	A13	Where staging is proposed, the terms of this approval that apply or are relevant to the work or activities to be carried out in a specific stage must be complied with at the relevant time for that stage.	LORAC to the extent required by the Staging Report	Section 9.2 of the CEMP: Planning Assessments and Approvals
MCoA	Staging	A14	Where changes are proposed to the staging of construction or operation, a revised Staging Report must be prepared and submitted to the Planning Secretary for information before the commencement of changes to the stage of construction or the stage of operation.	Sydney Metro LOR to advise of changes	Noted. To be completed by Sydney Metro where applicable.

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Staging	A15	Where changes are proposed to the risk assessment related to the staging of construction or operation, a revised Staging Report must be submitted to the Planning Secretary for information one (1) month before the lodgement of any CEMP or CEMP sub plan associated with the stage where change in risk assessment is proposed.	Sydney Metro. LOR to advise of changes	Noted. To be completed by Sydney Metro where applicable.
MCoA	Staging	A16	The Proponent may submit any strategies, plans or programs required by this approval on a progressive basis, within each stage of the CSSI. *Notes:* *1. While any strategy, plan or program may be submitted on a progressive basis, the Proponent will need to ensure that the existing activities on site are covered by suitable strategies, plans or programs at all times; and* *2. If the submission of any strategy, plan or program is to be submitted on a progressive basis, then the relevant strategy, plan or program must clearly describe the activities to which the strategy, plan or program applies, the relationship of this activity to any future activities within the stage, and the trigger for updating the strategy, plan or program.* *3. The staged submission of strategies, plans or programs may reflect the construction and operation of the project through geographical activities, temporal activities or activity-based staging.*	AEW Contractor, except that Sydney Metro will make all submissions to the Planning Secretary	Noted. Section 9.2 of the CEMP: Planning Assessments and Approvals The Staging Report references the FSM CEMP to include relevant environmental aspect procedures and nominates the ER as the approval authority.
MCoA	Ancillary Facilities – Ancillary facilities	A17	Ancillary facilities that are not identified by description and location in the documents listed in Condition A1 can only be established and used in each case if: (a) they are located within or immediately adjacent to the Construction Boundary of the CSSI; and (b) they are not located next to sensitive land use(s) (including where an access road is between the facility and the receiver), unless the landowner and occupier have given written acceptance to the carrying out of the relevant facility in the proposed location; and (c) they have no impacts on Heritage items (including areas of archaeological sensitivity), threatened species, populations or ecological communities beyond the impacts approved under the terms of this approval; and	LORAC	No ancillary facilities outside of the documents in A1 planned to be required, not classed as minor. .

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
			(d) the establishment and use of the facility can be carried out and managed within the outcomes set out in the terms of this approval, including in relation to environmental, social and economic impacts.		
			Note: *This condition does not apply to any ancillary facilities or work that are exempt or complying development, established before the commencement of construction under this approval or minor ancillary facilities established under Condition A22.*		
MCoA	Site Establishment Work – Site Establishment Management Plan	A18	Before establishment of any ancillary facility (excluding exempt or complying development, ancillary facilities determined by the ER to have minimal environmental impact and those established under Condition A17and those considered in an approved CEMP), 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 ancillary facilities. The Site Establishment Management Plan must be prepared in consultation with the Relevant Council(s) and relevant government agencies. The Site Establishment Management Plan must include:	LORAC	Site Establishment Management Plan not forecast to be required. No ancillary facilities outside of the documents in A1 planned to be required, not classed as minor. Refer Section 1.2.3 and Attachment N
			(a) a description of activities to be undertaken during establishment of the ancillary facility (including scheduling and duration of work to be undertaken at the site);		
			(b) figures illustrating the proposed operational site layout and the location of the closest sensitive land use(s);		
			(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 before the commencement of site establishment work;		
			(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 Condition A1; and		
			(ii) manage the risks identified in the risk analysis undertaken in subsection (c) of this condition; and		
			(e) a program for monitoring the performance outcomes, including a program for construction noise monitoring, where appropriate or required.		

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
			Nothing in this condition prevents the Proponent from preparing individual Site Establishment Management Plans for each ancillary facility.		
MCoA	Site Establishment Work – Site Establishment Management Plan	A19	With the exception of a Site Establishment Management Plan expressly nominated by the Planning Secretary to be endorsed by the ER, all Site Establishment Management Plans must be submitted to the Planning Secretary for approval one (1) month before the establishment of any ancillary facilities.	LORAC, except that Sydney Metro must make submissions of Site Establishment Management Plans to the Planning Secretary. LORAC must provide the Site Establishment Management Plan to Sydney Metro 6 weeks before the establishment of any construction ancillary facility to which this condition applies	Site Establishment Management Plan not forecast to be required

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Site Establishment Work – Site Establishment Management Plan	A20	A Site Establishment Management Plan expressly nominated by the Planning Secretary to be endorsed by the ER must be submitted to the ER for endorsement one (1) month before the establishment of that ancillary facility or as otherwise agreed with the ER.	LORAC, except that Sydney Metro must make submissions of Site Establishment Management Plans to the Planning Secretary. LORAC must provide the Site Establishment Management Plan to Sydney Metro 6 weeks before the establishment of any construction ancillary facility to which this condition applies	Site Establishment Management Plan not forecast to be required
MCoA	Site Establishment Work – Use of Ancillary Facilities	A21	The use of ancillary facility for construction must not commence until the CEMP required by Condition C1 relevant CEMP Sub-plans required by Condition C5 and relevant Construction Monitoring Programs required by Condition C13 have been approved by the Planning Secretary or endorsed by the ER (whichever is applicable). ***Note**: This condition does not apply to Condition A22 or where the use of an ancillary facility is Low Impact Work or for Low Impact Work.*	LORAC, except that Sydney Metro will notify the Contractor when the relevant CEMP, CEMP Sub-plans and Construction Monitoring Programs have been approved by the Planning Secretary	Ancillary facilities are located within the construction boundary identified in documents of Condition A1, for office sheds, lunch sheds and temporary toilet facilities.
MCoA	Site Establishment Work – Minor Ancillary facilities	A22	Lunch sheds, office sheds, portable toilet facilities and the like, can be established and used where they have been assessed in the documents listed in Condition A1 or satisfy the following criteria: (a) are located within or adjacent to the Construction Boundary; and (b) have been assessed by the ER to have - (i) minimal amenity impacts to surrounding residences and businesses, after consideration of matters such as compliance with the ICNG, traffic and access impacts, dust and odour impacts, and visual (including light spill) impacts, and	LORAC	Ancillary facilities located within the construction boundary identified in documents of Condition A1, for office sheds, lunch sheds and temporary toilet facilities. Refer to Section 1.2.3 and Attachment N. The locations of stockpiles and laydown areas are addressed in Section 12.8.15 of the CEMP

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
			(ii) minimal environmental impact with respect to waste management and flooding, and (iii) no impacts on biodiversity, soil and water, and Heritage items beyond those already approved under other terms of this approval.		
MCoA	Site Establishment Work – Boundary Screening	A23	Boundary screening must be erected around ancillary facilities that are adjacent to sensitive land use(s) for the duration that the ancillary facility is in use unless otherwise agreed with relevant affected residents, business operators or landowners.	LORAC	Noted. No sensitive land uses adjacent to the ancillary facility. Nonetheless boundary screening will be erected around ancillary facility where there is no impact on vegetation.
MCoA	Site Establishment Work – Boundary Screening	A24	Boundary screening required under Condition A23 must minimise visual impacts on adjacent sensitive land use(s).	LORAC	Noted. No sensitive land uses adjacent the ancillary facility where there is no impact on vegetation.
MCoA	Independent Appointments	A25	All Independent Appointments required by the terms of this approval must have regard to the Department's guideline Seeking approval from the Department for the appointment of independent experts (DPHI, 2020) and hold current membership of a relevant professional body, unless otherwise agreed by the Planning Secretary.	LORAC to facilitate and assist the Planning Secretary in any such appointment.	Noted
MCoA	Independent Appointments	A26	The Planning Secretary may at any time commission an audit of how an Independent Appointment has exercised their functions. The Proponent must: (a) facilitate and assist the Planning Secretary in any such audit; and (b) make it a term of their engagement of an Independent Appointment that the Independent Appointment facilitate and assist the Planning Secretary in any such audit.	Sydney Metro	Noted
MCoA	Independent Appointments	A27	Upon completion of an audit under Conditions A26 above, the Planning Secretary may withdraw its approval of an Independent Appointment should they consider the Independent Appointment has not exercised their functions in accordance with this approval. Note: Conditions A26 and A27 apply to all Independent Appointments including the ER and Independent Auditor.	Sydney Metro	Noted

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Environment Representative	A28	Work must not commence until an Environmental Representative (ER) has been nominated by the Proponent and approved by the Planning Secretary.	LORAC	Section 3 of the CEMP: Roles and Responsibilities The ER has been nominated and approved by the Planning Secretary
MCoA	Environment Representative	A29	The proposed ER must be a suitably qualified and experienced person(s) who was not involved in the preparation of the documents listed in Condition A1 and is independent from the design and construction personnel for the CSSI and those involved in the delivery of it.	Sydney Metro	Noted. Sydney Metro will manage ER appointments.
MCoA	Environment Representative	A30	The Proponent may engage more than one ER for the CSSI, in which case the functions to be exercised by an ER under the terms of this approval may be carried out by any ER that is approved by the Planning Secretary for the purposes of the SSI.	Sydney Metro	Noted. Sydney Metro will manage ER appointments.
MCoA	Environment Representative	A31	The ER must meet the requirements of the Department's Environmental Representative Protocol (DPHI, 2018).	Sydney Metro	Noted. Sydney Metro will manage ER appointments.
MCoA	Environment Representative	A32	For the duration of the work until the commencement of operation, or as agreed with the Planning Secretary, the approved ER must:	LORAC	Section 3 of the CEMP: Roles and Responsibilities
			(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 A10, A18, A20, C1, C5 and C13 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) endorse the documents before submission of such documents to the Planning Secretary (if those documents are required to be approved by the Planning Secretary); or		
			(ii) endorse the documents before the implementation of such documents (if those documents are only required to be submitted to the Planning Secretary / Department for information or are not required to be submitted to the Planning Secretary / Department);		

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
			(iii) provide a written statement to the Planning Secretary advising the documents have been endorsed.		
			(e) for documents that are required to be submitted to the Planning Secretary / Department for information under (d)(ii) above, the documents must be submitted as soon as practicable to the Planning Secretary / Department after endorsement by the ER, unless otherwise agreed by the Planning Secretary;		
			(f) regularly monitor the implementation of the documents listed in Conditions A10, A18, A20, C1, C5 and C13 to ensure implementation is being carried out in accordance with the document and the terms of this approval;		
			(g) as may be requested by the Planning Secretary, help plan or attend audits of the development commissioned by the Department including scoping audits, programming audits, briefings and site visits, but not independent environmental audits required under Condition A36;		
			(h) as may be requested by the Planning Secretary, assist the Department in the resolution of community complaints received directly by the Department;		
			(i) consider or assess the impacts of ancillary facilities as required by Condition A22; and		
			(j) consider any minor amendments to be made to the Site Establishment Management Plan, CEMP, CEMP Sub-plans and construction monitoring programs without increasing impacts to nearby sensitive land use(s), and are consistent with the terms of this approval and the Site Establishment Management Plan, CEMP, CEMP Sub-plans and construction monitoring programs approved by the Planning Secretary and, if satisfied such amendment is necessary, approve the amendment. This does not include any modifications to the terms of this approval;		
			(k) prepare and submit to the Planning Secretary and other relevant regulatory 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 or as otherwise agreed by the Planning Secretary; and		

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
			(l) assess the impacts of activities as required by the Low Impact Work definition. With respect to (d) above, the ER is not required to endorse the specialist content in documents requiring specialist review and / or endorsement.		
MCoA	Environment Representative	A33	The Proponent must provide the ER with all documentation requested by the ER in order for the ER to perform their functions specified in Condition A32 (including preparation of the ER monthly report), as well as: (a) the Complaints Register (to be provided on a weekly basis or as requested); and (b) a copy of any assessment carried out by the Proponent of whether proposed work is consistent with the approval (which must be provided to the ER before the commencement of the subject work).	LORAC	Section 3: Roles and Responsibilities
MCoA	Notification of Commencement	A34	The Department, and relevant Councils must be notified in writing of the date of commencement of construction at least seven (7) days before the commencement of construction.	LORAC to notify Sydney Metro	Noted. Sydney Metro will notify the Department and relevant council on behalf of LORAC.
MCoA	Notification of Commencement	A35	If construction of the CSSI is to be staged, the Department, Liverpool City Council and Penrith City Council must be notified in writing at least seven (7) days before the commencement of each stage, of the date of the commencement of that stage.	LORAC to notify Sydney Metro	Noted. Sydney Metro will notify on behalf of LORAC.
MCoA	Independent Environmental Audit	A36	Independent Audits of the CSSI must be conducted and carried out in accordance with the Independent Audit Post Approval Requirements (DPHI, 2020).	Sydney Metro	LORAC will support Sydney Metro as required
MCoA	Independent Environmental Audit	A37	Notwithstanding Condition A36, the Proponent may prepare an audit program to outline the scope and timing of each independent audit that will be undertaken during construction. If prepared, the audit program must be developed in consultation with, and approved by, the Planning Secretary prior to commencement of the first audit and implemented throughout construction.	Sydney Metro	Section 15 of the CEMP: Audit LORAC will support Sydney Metro as required
MCoA	Independent Environmental Audit	A38	Proposed independent auditors must be approved by the Planning Secretary before the commencement of an Independent Audit.	Sydney Metro	LORAC will support Sydney Metro as required

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Independent Environmental Audit	A39	The Planning Secretary may require the initial and subsequent Independent Audits to be undertaken at different times to those specified in the Independent Audit Post Approval Requirements (DPHI, 2020), upon giving at least four (4) weeks' notice (or timing as stipulated by the Planning Secretary) to the Proponent of the date upon which the audit must be commenced.	Sydney Metro	Section 15 of the CEMP: Audit LORAC will support Sydney Metro as required
MCoA	Independent Environmental Audit	A40	Independent Audit Reports and the Proponent's response to audit findings must be submitted to the Planning Secretary within two (2) months of undertaking the independent audit site inspection as outlined in the Independent Audit Post Approval Requirements (DPHI, 2020), unless otherwise agreed by the Planning Secretary.	LORAC, except that Sydney Metro will submit Independent Audit Reports to the Planning Secretary	Section 15 of the CEMP: Audit LORAC will support Sydney Metro as required
MCoA	Incident and Non-compliance Notification and Reporting – Incident Notification, Reporting and Response	A41	The Planning Secretary must be notified via phone or in writing via the Major Projects website immediately after the Proponent becomes aware of an incident. Any notification via phone must be followed up by a notification in writing via the Major Projects website within 24 hours of the initial phone call. The written notification must identify the CSSI (including the application number and the name of the CSSI if it has one) and set out the location and general nature of the incident.	LORAC, except that Sydney Metro will submit Independent Audit Reports to the Planning Secretary	Section 17.3.1 of the CEMP: Incident Notification
MCoA	Incident and Non-compliance Notification and Reporting – Incident Notification, Reporting and Response	A42	Any incident within or potentially affecting the Controlled Areas of the WaterNSW Pipelines corridor must also be reported to WaterNSW on the WaterNSW 24-hour Incident Notification Number 1800 061 069.	Not Applicable	Not Applicable per Staging Report
MCoA	Incident and Non-compliance Notification and Reporting – Incident Notification, Reporting and Response	A43	Subsequent notification must be given, and reports submitted in accordance with the requirements set out in Attachment A.	LORAC, except that Sydney Metro will submit Independent Audit Reports to the Planning Secretary.	Section 17.3.1 of the CEMP: Incident Notification

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Incident and Non-compliance Notification and Reporting – Non-compliance Notification	A44	The Planning Secretary must be notified in writing via the Major Projects website within seven (7) days after the Proponent becomes aware of any non-compliance with the terms of this approval.	LORAC shall provide Sydney Metro with the written notification to allow for Sydney Metro to report to the Planning Secretary.	Section 17.3.1 of the CEMP: Incident Notification
MCoA	Incident and Non-compliance Notification and Reporting – Non-compliance Notification	A45	A non-compliance notification must identify the CSSI (including the application number for it), set out the condition of approval that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be undertaken to address the non-compliance. Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.	Sydney Metro will raise and expect investigation and actions to be carried out by the LORAC. The LORAC shall provide Sydney Metro with the Incident Report required under Condition A45.	Section 17.3.1 of the CEMP: Incident Notification
MCoA	Identification of Workforce	A46	All Heavy Vehicles used for spoil haulage must be clearly marked on the sides and rear with the project name and application number to enable immediate identification by a person viewing the Heavy Vehicle standing 20 metres away.	LORAC	Attachment F of the CEMP: ERAPs - Spoil Management
MCoA	Identification of Workforce	A47	The CSSI name, application number, telephone number, postal address and email address required under Condition B3 must be available on-site boundary fencing / hoarding at each ancillary facility before the commencement of construction. This information must also be provided on the website required under Condition B11.	LORAC, except that Sydney Metro will submit the project identification markings to the Planning Secretary for approval and will confirm approval to the Contractor / existing allocation	Noted - these details will be available where required, as outlined.
MCoA		B1	The Overarching Community Communication Strategy as provided in the documents listed in Condition A1, or updated Strategy must be implemented for the duration of the work.	LORAC	LORAC will implement the relevant requirements of the Sydney Metro WSA OCCS

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
	Community Information, Consultation and Involvement – Community Communication		Should the Overarching Community Communication Strategy be updated, a copy must be provided to the Planning Secretary for information.		
MCoA	Complaints Management System	B2	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.	LORAC will participate in the implementation of the complaints management system and provide Sydney metro with all information it requires to comply with Condition B2.	Section 18.2 Complaints Management
MCoA	Complaints Management System	B3	The following information must be available to facilitate community enquiries and manage complaints 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.	LORAC will participate in the implementation of the complaints management system and provide Sydney metro with all information it requires to comply with Condition B3.	Section 18.2 Complaints Management, Sydney Metro Website, Community liaison management plan
MCoA	Complaints Management System	B4	A Complaints Register must be maintained recording information on all complaints received about the CSSI during the carrying out of any work and for a minimum of 12 months following the completion of construction. The Complaints Register must record the: (a) number of complaints received; (b) date and time of the complaint;		

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
			(c) number of people (in the household) affected in relation to a complaint, if relevant; (d) method by which the complaint was made; (e) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect; (f) issue of the complaint; (g) means by which the complaint was addressed and whether resolution was reached, with or without mediation; and (h) if no action was taken, the reason(s) why no action was taken.	LORAC will participate in the implementation of the complaints management system and provide Sydney metro with all information it requires to comply with Condition B4 until substantial portion completion.	Section 18.2 Complaints Management. LORAC will implement the relevant requirements of the Sydney Metro WSA Overarching Community Communications Strategy (OCCS)
MCoA	Complaints Management System	B5	Complainants must be advised of the following information before, or as soon as practicable after, providing personal information: (a) the Complaints Register may be forwarded to government agencies, including the Department (Department of Planning Industry and Environment, 4 Parramatta Square, 12 Darcy Street, Parramatta NSW 2150), to allow them to undertake their regulatory duties; (b) by providing personal information, the complainant authorises the Proponent to provide that information to government agencies; (c) the supply of personal information by the complainant is voluntary; and (d) the complainant has the right to contact government agencies to access personal information held about them and to correct or amend that information (Collection Statement). The Collection Statement must be included on the Proponent or development website to make prospective complainants aware of their rights under the Privacy and Personal Information Protection Act 1998 (NSW). For any complaints made in person, the complainant must be made aware of the Collection Statement.	LORAC will participate in the implementation of the complaints management system and provide Sydney metro with all information it requires to comply with Condition B5	Section 18.2 Complaints Management LORAC will implement the relevant requirements of the Sydney Metro WSA Overarching Community Communications Strategy (OCCS)
MCoA	Complaints Management System	B6	The Complaints Register must be provided to the Planning Secretary upon request, within the timeframe stated in the request.		

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
			Note: Complainants must be advised that the Complaints Register may be forwarded to Government agencies to allow them to undertake their regulatory duties.	LORAC will participate in the implementation of the complaints management system and provide Sydney metro with all information it requires to comply with Condition B6 until substantial portion completion.	Section 17.3.1 of the CEMP: Incident and Complaints Reporting LORAC will implement the relevant requirements of the Sydney Metro WSA Overarching Community Communications Strategy (OCCS)
MCoA	Complaints Management System	B7	A Community Complaints Mediator that is independent of the design and construction personnel must be engaged by the Proponent, upon the referral of the complaint by the ER in accordance with the Overarching Community Communication Strategy.	Sydney Metro	A Community Complaints Mediator will be engaged via Sydney Metro as required. LORAC will assist as required.
MCoA	Complaints Management System	B8	The role of the Community Complaints Mediator is to provide independent mediation services for any reasonable and unresolved complaint referred by the ER where a member of the public is not satisfied by the Proponent's response. Where a Community Complaints Mediator is required, a mediator accredited under the National Mediator Accreditation System (NMAS), administered by the Mediator Standards Board must be appointed.	LORAC will facilitate the Community Complaints Mediation process and provide the Community Complaints Mediator with any information or documentation they require to meet their obligations under the CSSI approval.	Sydney Metro OCCS LORAC Community Liaison Management Plan
MCoA	Complaints Management System	B9	The Community Complaints Mediator will: (a) review any unresolved disputes, referred by the ER in accordance with the Overarching Community Communication Strategy;		Sydney Metro OCCS LORAC Community Liaison Management Plan

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
			(b) make recommendations to the Proponent to satisfactorily address complaints, resolve disputes or mitigate against the occurrence of future complaints or disputes; and (c) provide a copy of the recommendations, and the Proponent's response to the recommendations, to the Planning Secretary within one month of the recommendations being made.	LORAC will facilitate the Community Complaints Mediation process and provide the Community Complaints Mediator with any information or documentation they require to meet their obligations under the CSSI approval.	
MCoA	Complaints Management System	B10	Community Complaints Mediation will not be enacted before the Complaints Management System required by Condition B2 has been executed for a complaint and will not consider issues such as property acquisition, where other dispute processes are provided for in this approval, statute or clear government policy and resolution processes are available or matters which are not within the scope of this CSSI.	Sydney Metro	Sydney Metro OCCS Community Complaints Mediation will be managed via Sydney Metro. LORAC will assist as required.
MCoA	Provision of Electronic Information	B11	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 all stages of construction of the CSSI. Up-to-date information (excluding confidential, private, commercial information or other documents as agreed to by the Planning Secretary) must be published before the relevant work commencing 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, 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, or links to the referenced documents where available;	LORAC will comply with B11 (a), (b) and (c) and provide a link on Sydney Metro's website to the Principal Contractors website.	https://www.laingorourke.com/projects/australia/st-marys-station-footbridge/

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
			(d) a copy of each statutory approval, licence or permit required and obtained in relation to the CSSI, or where the issuing agency maintains a website of approvals, licences or permits, a link to that website; (e) a current copy of each document required under the terms of this approval, which must be published within one (1) week of its approval or before the commencement of any work to which they relate or before their implementation, as the case may be; and (f) a copy of the audit reports required under 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. All information required in this condition is to be provided on the website or webpage, and easy to navigate.	Any documentation, statutory approval, licence or permit required to be produced or obtained by LORAC that is also required to be on a website under this condition, must be uploaded or linked to LORAC's website	
MCoA	Construction Environmental Management Plan	C1	Construction Environmental Management Plans (CEMPs) and CEMP Sub-plans must be prepared in accordance with the Construction Environmental Management Framework (CEMF) included in the documents listed in Condition A1 to detail how the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1 will be implemented and achieved during construction.	LORAC	Section 1.4 of the CEMP: Scope of the Plan
MCoA	Construction Environmental Management Plan	C2	With the exception of any CEMPs expressly nominated by the Planning Secretary to be endorsed by the ER, all CEMPs must be submitted to the Planning Secretary for approval. Note: The Planning Secretary will consider the assessment of the predicted level of environmental risk and potential level of community concern required under Condition A11(e) when deciding whether any CEMP's may be endorsed by the ER.	LORAC, except Sydney Metro will submit the CEMP to the ER and will confirm approval to LORAC.	Sydney Metro WSA Staging Report Table 4-3 outlines that this AEW CEMP is not required to be submitted to DPHI, and that the ER is the nominated approval authority.
MCoA	Construction Environmental Management Plan	C3	The CEMP(s) not requiring the Planning Secretary's approval must be submitted to the ER for endorsement no later than one (1) month before the commencement of construction or where construction is staged no later than one (1) month before the commencement of that stage. That CEMP must obtain the endorsement of the ER as being consistent with the conditions of this approval and all undertakings made in the documents listed in Condition A1.	LORAC, except Sydney Metro will submit the CEMP to the ER and will confirm approval to LORAC.	Section 3: Roles and Responsibilities

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Construction Environmental Management Plan	C4	Any CEMP to be approved by the Planning Secretary must be endorsed by the ER and then submitted to the Planning Secretary for approval no later than one (1) month before the commencement of construction or where construction is staged no later than one (1) month before the commencement of that stage.	LORAC, except Sydney Metro will submit the CEMP to the Planning Secretary/ER and will confirm approval to the LORAC.	Section 3: Roles and Responsibilities
MCoA	Construction Environmental Management Plan	C5	Of the CEMP Sub-plans required under Condition C1, the following CEMP Sub-plans must be prepared in consultation with the relevant government agencies identified for each CEMP Sub-plan. Details of issues raised by a government agency during consultation (as required by Condition A6) must be provided with the relevant CEMP Sub-plan when submitted to the Planning Secretary / ER (whichever is applicable). Where a government agency(ies) request(s) is not included, the Proponent must provide the Planning Secretary / ER (whichever is applicable) justification as to why. Required CEMP Sub-Plan Relevant government agencies to be consulted for each CEMP Sub-plan (a) Noise and vibration Relevant Councils and WaterNSW (in relation to its assets) (b) Flora and fauna DPHI EES, DPI Fisheries, and Relevant Councils (c) Soil and water DPI Fisheries, and Relevant Councils (d) Non-Aboriginal heritage Relevant Councils, WaterNSW and Heritage NSW Note: CEMP Sub-plan(s) may reflect the construction of the project through geographical activities, temporal activities or activity based staging.	LORAC, except Sydney Metro will submit the CEMP to the Planning Secretary/ER and will confirm approval to the LORAC. It is unlikely that full sub-plans will be required for the FSM works.	No CEMP subplans to be developed for the FSM scope. The Sydney Metro WSA Staging Report Section 4.3.3, Section 4.3.4 and Appendix B outlines that the CEMP will cover environmental aspects without need for separate CEMP subplans.

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Construction Environmental Management Plan	C6	The CEMP Sub-plans must state how: (a) the environmental performance outcomes identified in the documents listed in Condition A1 will be achieved; (b) the mitigation measures identified in the documents listed in Condition A1 will be implemented; (c) the relevant terms of this approval will be complied with; and (d) issues requiring management during construction (including cumulative impacts), as identified through ongoing environmental risk analysis, will be managed through SMART principles.	LORAC	No CEMP subplans to be developed for the FSM scope. The Sydney Metro WSA Staging Report Section 4.3.3, Section 4.3.4 and Appendix B outlines that the CEMP will cover environmental aspects without need for separate CEMP subplans.
MCoA	Construction Environmental Management Plan	C7	With the exception of any CEMP Sub-plans expressly nominated by the Planning Secretary to be endorsed by the ER, all CEMP Sub-plans must be submitted to the Planning Secretary for approval.	LORAC, except Sydney Metro will submit the CEMP to the Planning Secretary and will confirm approval to the LORAC.	No CEMP subplans to be developed for the FSM scope. The Sydney Metro WSA Staging Report Section 4.3.3, Section 4.3.4 and Appendix B outlines that the CEMP will cover environmental aspects without need for separate CEMP subplans.
MCoA	Construction Environmental Management Plan	C8	The CEMP Sub-plans not requiring the Planning Secretary's approval must obtain the endorsement of the ER as being in accordance with the conditions of approval and all relevant undertakings made in the documents listed in Condition A1. Any of these CEMP Sub-plans must be submitted to the ER with, or subsequent to, the submission of the CEMP but in any event, no later than one (1) month before construction or where construction is staged no later than one (1) month before the commencement of that stage.	LORAC, except Sydney Metro will submit the CEMP to the ER and will confirm approval to the LORAC.	No CEMP subplans to be developed for the FSM scope. The Sydney Metro WSA Staging Report Section 4.3.3, Section 4.3.4 and Appendix B outlines that the CEMP will cover environmental aspects without need for separate CEMP subplans.

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Construction Environmental Management Plan	C9	Any of the CEMP Sub-plans to be approved by the Planning Secretary must be submitted to the Planning Secretary with, or subsequent to, the submission of the CEMP but in any event, no later than one (1) month before construction or where construction is staged no later than one (1) month before the commencement of that stage.	Applicable in the Staging Report although CEMP Sub-plans are not applicable to FSM.	No CEMP subplans to be developed for the FSM scope. The Sydney Metro WSA Staging Report Section 4.3.3, Section 4.3.4 and Appendix B outlines that the CEMP will cover environmental aspects without need for separate CEMP subplans.
MCoA	Construction Environmental Management Plan	C10	Construction must not commence until the CEMP and all CEMP Sub-plans have been approved by the Planning Secretary or endorsed by the ER (whichever is applicable), unless otherwise agreed by the Planning Secretary. The CEMP and CEMP Sub-plans, as approved by the Planning Secretary or endorsed by the ER (whichever is applicable), including any minor amendments approved by the ER, must be implemented for the duration of construction.	LORAC, except Sydney Metro will confirm approval to the Principal Contractor.	Section 3: Roles and Responsibilities
MCoA	Construction Environmental Management Plan	C11	In addition to the relevant requirements of the CEMF, the Flora and Fauna CEMP Sub-plan must include but not be limited to: (a) details of how the requirements of Conditions E11 will be met; (b) details of a dewatering plan of farm dams including: (i) supervision of dewatering by a suitably qualified ecologist; (ii) a methodology for the transfer of native fauna species known to inhabit and/or use the dam; (iii) the location and suitability of the proposed relocation sites; and (iv) any potential impacts of relocating the fauna to the relocation sites; (c) protocols for incidental finds of threatened species and ecological communities within the construction boundary.	Not Applicable	No CEMP subplans to be developed for the FSM scope. The Sydney Metro WSA Staging Report Section 4.3.3, Section 4.3.4 and Appendix B outlines that the CEMP will cover environmental aspects without need for separate CEMP subplans.
MCoA	Construction Environmental Management Plan	C12	In addition to the relevant requirements of the CEMF, the Soil and Water CEMP Sub-Plan must include but not be limited to: (a) details how the requirements of Conditions E127, E128 and E129 will be met; and (b) the unexpected, contaminated finds protocol required by Condition E98.	Not Applicable	No CEMP subplans to be developed for the FSM scope. Attachment F of the CEMP: ERAPs - Soil and Water Quality and Attachment K for the Unexpected Finds Procedure

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Construction Monitoring Programs	C13	The following **Construction Monitoring Programs** must be prepared in consultation with the relevant government agencies (as required by Condition A6) identified for each to compare actual performance of construction of the CSSI against the performance predicted in the documents listed in Condition A1 or in the CEMP. Where a government agency(ies) request(s) is not included, the Proponent must provide the Planning Secretary / ER (whichever is applicable) justification as to why.	LORAC	Relevant environmental monitoring information to manage relatively low risk of FSM works included within the CEMP and attached ERAPs (attachment F).
MCoA	Construction Monitoring Programs	C14	Each **Construction Monitoring Program** must provide: (a) details of baseline data available including the period of baseline monitoring; (b) details of baseline data to be obtained and when; (c) details of all monitoring of the project to be undertaken; (d) the parameters of the project to be monitored; (e) the frequency of monitoring to be undertaken; (f) the location of monitoring; (g) the reporting of monitoring results and analysis results against relevant criteria; (h) details of the methods that will be used to analyse the monitoring data; (i) procedures to identify and implement additional mitigation measures where the results of the monitoring indicated unacceptable project impacts; (j) a consideration of SMART principles; (k) any consultation to be undertaken in relation to the monitoring programs; and (l) any specific requirements as required by Conditions C15 to C16.	LORAC	Relevant environmental monitoring information to manage relatively low risk of FSM works included within the CEMP and attached ERAPs (attachment F).
MCoA	Construction Monitoring Programs	C15	The **Noise and Vibration Construction Monitoring Program** must include: (a) noise and vibration monitoring at representative residential and other locations (including at the worst- affected residences), subject to property owner approval, to confirm construction noise and vibration levels; (b) monitoring undertaken during the day, evening and night-time periods throughout the construction period and cover the range of activities being undertaken;	LORAC	

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
			(c) method and frequency for reporting monitoring results; and		Relevant environmental monitoring information to manage relatively low risk of FSM works included within the CEMP and attached ERAPs (attachment F). In addition to the LORAC CEMP, noise and vibration monitoring will be undertaken in accordance with the Sydney Metro Out of Hours Works Protocol and Sydney Metro Construction Noise and Vibration Strategy.
			(d) a process to undertake real time noise and vibration monitoring.		
			The results of the monitoring must be readily available to the construction team, the Proponent and ER. The Planning Secretary and EPA must be provided with access to the results on request.		
MCoA	Construction Monitoring Programs	C16	**Groundwater Construction Monitoring Program** must include:	LORAC, as applicable	No impacts to groundwater anticipated. Relevant environmental monitoring information to manage relatively low risk of FSM works included within the CEMP and attached ERAPs (attachment F).
			(a) groundwater monitoring networks at each construction excavation site predicted to intercept groundwater in the documents listed in Condition A1;		
			(b) detail of the location of all monitoring bores with nested sites to monitor both shallow and deep groundwater levels and quality;		
			(c) define the location of saltwater interception monitoring where sentinel groundwater monitoring bores will be installed between the saline sources and that of each construction excavation site predicted to intercept groundwater in the documents listed in Condition A1;		
			(d) results from existing monitoring bores;		
			(e) monitoring and gauging of groundwater inflow to the excavations predicted to intercept groundwater in the documents listed in Condition A1, appropriate trigger action response plan for all predicted groundwater impacts upon each noted neighbouring groundwater system component for each excavation construction site;		
			(f) trigger levels for groundwater quality, salinity and groundwater drawdown in monitoring bores and / or other groundwater users;		
			(g) daily measurement of the amount of water discharged from the water treatment plants;		
			(h) water quality testing of the water discharged from treatment plants;		
			(i) management and mitigation measures and criteria, including measures to address impacts on groundwater dependent ecosystems;		

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
			(j) groundwater inflow to the excavations to enable a full accounting of the groundwater take from the Sydney Basin Central Groundwater Source; (k) reporting of groundwater gauging at excavations, groundwater monitoring, groundwater trigger events and action responses; and (l) methods for providing the data collected to Sydney Water where discharges are directed to their assets.		
MCoA	Construction Monitoring Programs	C17	With the exception of any **Construction Monitoring Programs** expressly nominated by the Planning Secretary to be endorsed by the ER, all Construction Monitoring Programs must be submitted to the Planning Secretary for approval.	LORAC, except Sydney Metro will submit to the Planning Secretary and will confirm approval to LORAC.	Relevant environmental monitoring information to manage relatively low risk of FSM shaft works included within the CEMP and attached ERAPs (attachment F).
MCoA	Construction Monitoring Programs	C18	The **Construction Monitoring Programs** not requiring the Planning Secretary's approval must obtain the endorsement of the ER as being in accordance with the conditions of approval and all undertakings made in the documents listed in Condition A1. Any of these Construction Monitoring Programs must be submitted to the ER for endorsement at least one (1) month before the commencement of construction or where construction is staged no later than one (1) month before the commencement of that stage.	LORAC, except Sydney Metro will submit any Construction Monitoring Programs to the ER and will confirm endorsement to LORAC.	Relevant environmental monitoring information to manage relatively low risk of FSM works included within the CEMP and attached ERAPs (attachment F).
MCoA	Construction Monitoring Programs	C19	Any of the **Construction Monitoring Programs** which require Planning Secretary approval must be endorsed by the ER and then submitted to the Planning Secretary for approval at least one (1) month before the commencement of construction or where construction is staged no later than one (1) month before the commencement of that stage.	LORAC, except Sydney Metro will submit any Construction Monitoring Programs to the Planning Secretary and will confirm approval to the Contractor	Noted. It is not anticipated that any FSM works monitoring requirements will require approval by the Planning Secretary.
MCoA	Construction Monitoring Programs	C20	Unless otherwise agreed with the Planning Secretary, construction must not commence until the Planning Secretary has approved, or the ER has endorsed (whichever is applicable), all of the required **Construction Monitoring Programs** and all relevant baseline data for the specific construction activity has been collected.	LORAC, except Sydney Metro will confirm approval to LORAC.	Noted. It is not anticipated that any FSM works monitoring requirements will require approval by the Planning Secretary.

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Construction Monitoring Programs	C21	The **Construction Monitoring Programs**, as approved by the Planning Secretary or the ER has endorsed (whichever is applicable), including any minor amendments approved by the ER, must be implemented for the duration of construction and for any longer period set out in the monitoring program or specified by the Planning Secretary or the ER (whichever is applicable), whichever is the greater.	LORAC	Noted. It is not anticipated that any FSM works monitoring requirements will require approval by the Planning Secretary.
MCoA	Construction Monitoring Programs	C22	The results of the Construction Monitoring Programs must be submitted to the Planning Secretary, ER and relevant regulatory agencies, for information in the form of a Construction Monitoring Report at the frequency identified in the relevant Construction Monitoring Program. ***Note:*** *Where a relevant CEMP Sub-plan exists, the relevant Construction Monitoring Program may be incorporated into that CEMP Sub-plan.*	LORAC, except Sydney Metro will submit to the Planning Secretary	Environmental monitoring information will be made available to the Planning Secretary, ER and relevant regulatory agencies as requested.
MCoA	Operational Environmental Management	D1	An Operational Environmental Management Plan (OEMP) must be prepared having regard to the Environmental Management Plan Guideline for Infrastructure Projects (Department Planning, Industry and Environment 2020). The OEMP must detail how the performance outcomes, commitments and mitigation measures made and identified in the documents listed in Condition A1 will be implemented and achieved during operation. This condition (Condition D1) does not apply if Condition D2 of this approval applies.	Not Applicable	Not Applicable
MCoA	Operational Environmental Management	D2	An OEMP is not required for the CSSI if the Proponent has an Environmental Management System (EMS) or equivalent as agreed with the Planning Secretary, and demonstrates, to the satisfaction of the Planning Secretary, that through the EMS or equivalent: (a) the performance outcomes, commitments and mitigation measures, made and identified in the documents listed in Condition A1, and specified relevant terms of this approval can be achieved; (b) issues identified through ongoing risk analysis can be managed; and (c) procedures are in place for rectifying any non-compliance with this approval identified during compliance auditing, incident management or any other time during operation.	Not Applicable	Not Applicable

<table>
<tr><th>Type</th><th>Condition Classification</th><th>Reference</th><th>Description</th><th>Responsibility</th><th>Where addressed</th></tr>
<tr><td>MCoA</td><td>Operational Environmental Management</td><td>D3</td><td>Where an OEMP is required, the Proponent must include the following OEMP Sub-plans in the OEMP:
<table><tr><th colspan="2">Required OEMP Sub-plan</th><th>Relevant government agencies to be consulted for each OEMP Sub-plan</th></tr><tr><td>(a)</td><td>Groundwater Management</td><td>DPHI Water</td></tr><tr><td>(b)</td><td>Bushfire Management Plan</td><td>NSW Rural Fire Service</td></tr><tr><td>(c)</td><td>Flood Emergency Management Plan</td><td>EES Group, DPHI Water, SES and Relevant Council(s)</td></tr></table></td><td>Not Applicable</td><td>Not Applicable</td></tr>
<tr><td>MCoA</td><td>Operational Environmental Management</td><td>D4</td><td>Each of the OEMP Sub-plans must include the information set out in Condition D2 of this approval.</td><td>Not Applicable</td><td>Not Applicable</td></tr>
<tr><td>MCoA</td><td>Operational Environmental Management</td><td>D5</td><td>The OEMP Sub-plans must be developed in consultation with relevant government agencies as identified in Condition D3 and must include information requested by an agency to be included in an OEMP Sub-plan during such consultation. Details of all information requested by an agency to be included in an OEMP Sub-plan as a result of consultation, including copies of all correspondence from those agencies, must be provided with the relevant OEMP Sub-Plan.</td><td>Not Applicable</td><td>Not Applicable</td></tr>
<tr><td>MCoA</td><td>Operational Environmental Management</td><td>D6</td><td>The OEMP Sub-plans must be submitted to the Planning Secretary as part of the OEMP.</td><td>Not Applicable</td><td>Not Applicable</td></tr>
<tr><td>MCoA</td><td>Operational Environmental Management</td><td>D7</td><td>The OEMP or EMS or equivalent as agreed with the Planning Secretary, must be submitted to the Planning Secretary for information no later than one (1) month before the commencement of operation.</td><td>Not Applicable</td><td>Not Applicable</td></tr>
<tr><td>MCoA</td><td>Operational Environmental Management</td><td>D8</td><td>The OEMP or EMS or equivalent, as submitted to the Planning Secretary and amended from time to time, must be implemented for the duration of operation or as agreed with the Planning OEMP or</td><td>Not Applicable</td><td>Not Applicable</td></tr>
</table>

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
			EMS or equivalent must be made publicly available before the commencement of operation.		
MCoA	Air Quality	E1	All reasonably practicable measures must be implemented to minimise the emission of dust and other air pollutants during construction.	LORAC	Attachment F of the CEMP: Operational Control Procedures - ERAPs - Air Quality and Dust Management
MCoA	Biodiversity and Trees - Biodiversity Credits	E2	The clearing of native vegetation must be minimised to the greatest extent practicable with the objective of reducing impacts to threatened ecological communities and threatened species habitat.	Not Applicable	Not Applicable per Staging Report
MCoA	Biodiversity and Trees - Biodiversity Credits	E3	Impacts to plant community types must not exceed those identified in the documents listed in Condition A1, unless otherwise approved by the Planning Secretary. In requesting the Planning Secretary's approval, an assessment of the additional impact(s) to plant community types and an updated ecosystem and / or species credit requirement under Condition E4 below, if required, must be provided.	Not Applicable	Not Applicable per Staging Report
MCoA	Biodiversity and Trees - Biodiversity Credits	E4	Prior to impacts on the biodiversity values set out in Table 3 and Table 4, the number and classes of ecosystem credits and species credits (like-for-like) must be retired. **Table 3: Ecosystem credits:** Plant Community Type (PCT) ID and name — Number of Credits 724: Broad-leaved Ironbark – Grey Box – Melaleuca decora grassy open forest on clay/gravel soils of the Cumberland Plain, Sydney Basin Bioregion — 246 835: Forest Red Gum – Rough-barked Apple grassy woodland on alluvial flats of the Cumberland Plain, Sydney Basin Bioregion — 217 849: Grey Box – Forest Red Gum grassy woodland on flats of the Cumberland Plain, Sydney Basin Bioregion — 204	Not Applicable	Not Applicable per Staging Report

Type	Condition Classification	Reference	Description		Responsibility	Where addressed
			1800: Swamp Oak open forest on river flats of Cumberland Plain and Hunter Valley	181		
			TOTAL	848		

Table 4: Species credits required:

Species	Number of Credits
Acacia bynoeana (Bynoe's Wattle)	31
Acacia pubescens (Downy Wattle)	54
Allocasuarina glareicola	47
Cynanchum elegans (White-flowered Wax Plant)	18
Dillwynia tenuifolia	72
Grevillea juniperina subsp. juniperina (Juniper-leaved Grevillea	153
Grevillea parviflora subsp. parviflora (Small-flower Grevillea)	32
Marsdenia viridiflora subsp. viridiflora (Endangered population Marsdenia viridiflora R. Br. subsp viridiflora	137
Micromyrtus minutiflora	47
Pimlea curvilora var. curviflora	18
Pimlea spicata (Spiked Rice-flower)	22
Pultenaea parviflora	31

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
			Meridolum corneovirens Cumberland Plain Land Snail 159 Myotis Macropus (Southern Myotis) 292 TOTAL SPECIES CREDITS 1113		
MCoA	Biodiversity and Trees - Biodiversity Credits	E5	The requirement to retire like-for-like ecosystem credits and species credits in Condition E4 may be satisfied by payment to the Biodiversity Conservation Fund of an amount equivalent to the number and classes of ecosystem credits and species credits.	Not Applicable	Not Applicable per Staging Report
MCoA	Biodiversity and Trees - Biodiversity Credits	E6	Where evidence of compliance with the Ancillary rules: Reasonable steps to seek like-for-like biodiversity credits for the purpose of applying the variation rules has been provided to the Planning Secretary, variation rules may be applied to retire the relevant ecosystem credits and species credits as set out in the BAM Biodiversity Credit Report (Variation)	Not Applicable	Not Applicable per Staging Report
MCoA	Biodiversity and Trees - Biodiversity Credits	E7	Evidence of the retirement of credits in satisfaction of Condition E4 or payment to the Biodiversity Conservation Fund in satisfaction of Condition E5 must be provided to the Planning Secretary prior to impacts on the biodiversity values.	Not Applicable	Not Applicable per Staging Report
MCoA	Biodiversity and Trees - Key Fish Habitat	E8	The Proponent must minimise impacts to Key Fish Habitat (KFH) as defined in Policy and Guidelines for Fish Habitat Conservation and Management (DPI, 2013 update). Residual impacts to KFH, following the implementation of habitat rehabilitation or other environmental compensation measures, must be offset at a ratio of 2:1 habitat offset requirement in accordance with the Policy and Guidelines for Fish Habitat Conservation and Management (DPI, 2013 update) and in consultation with DPI Fisheries	Not Applicable	Not Applicable per Staging Report
MCoA	Biodiversity and Trees - Key Fish Habitat	E9	Where offsets are required in accordance with Condition E8, payment of the habitat offset requirement must be made to the DPI Fish Conservation Trust Fund prior to the commencement of Work that impacts KFH.	Not Applicable	Not Applicable per Staging Report
MCoA	Biodiversity and Trees - Key Fish Habitat	E10	Where offsets are required in accordance with Condition E8, the Proponent must submit to the Planning Secretary a receipt confirming payment to the DPI Fish Conservation Trust Fund within one (1) month of making the payment.	Not Applicable	Not Applicable per Staging Report

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Biodiversity and Trees - Nest Boxes	E11	Nest Boxes must be installed one (1) month prior to any removal of existing tree hollows and/or the release of any captured hollow dependent fauna.	Not Applicable	Not Applicable per Staging Report
MCoA	Biodiversity and Trees - Reuse of Timbers	E12	Prior to vegetation clearing, the Proponent must identify where it is practicable for the CSSI to reuse native trees and vegetation that are to be removed. If it is not possible for the CSSI to reuse removed native trees and vegetation, the Proponent must consult with the relevant council(s), NSW National Parks & Wildlife Service, Western Sydney Parklands Trust, Greater Sydney Local Land Services, Landcare groups, DPI Fisheries and any additional relevant government agencies to determine if: (a) hollows, tree trunks (greater than 25-30 centimetres in diameter and 2-3 metres in length), mulch, bush rock and root balls salvaged from native vegetation impacted by the CSSI; and (b) collected plant material, seeds and/or propagated plants from native vegetation impacted by the CSSI, could be used by others in habitat enhancement and rehabilitation work, before pursuing other disposal options.	Not Applicable	Not Applicable per Staging Report
MCoA	Biodiversity and Trees - Reuse of Timbers	E13	Revegetation and the provision of replacement trees must be informed by a Tree Survey undertaken during detailed design. The Tree Survey must identify the number, type and location of any trees to be removed, except for trees that are offset under Condition E4. The Tree Survey must be submitted to the Planning Secretary for information with the Place, Urban Design and Corridor Landscape Plan required under Condition E79. Where trees are to be removed, the Proponent must provide a net increase in the number of replacement trees at a ratio of 2:1, except trees that are offset under Condition E4. Replacement trees must have a minimum pot size consistent with the relevant authority's plans / programs / strategies for vegetation management, street planting, or open space landscaping, or as agreed by the relevant authority(ies). Note: For the purposes of this condition, the relevant authority is that State or local government authority that owns or manages the land on which the replacement trees will be planted.	Not Applicable	Not Applicable per Staging Report Vegetation removal was undertaken as per the Biodiversity ERAP in Attachment F and tree removal report has been provided to SM.

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Biodiversity and Trees - Water Course Crossing	E14	The Proponent must design the watercourse crossings and the east-west regional corridor (Patons Lane) crossing to achieve the following objectives: (a) design of viaducts to retain and minimise clearing/disturbance of native vegetation and maximise native plant growth under the structures, (i) maintain and/or improve riparian/terrestrial connectivity under the viaduct and bridge structures to maximise the corridor function; (ii) maximise the viaduct and bridge structures span over the riparian corridor and/or remnant native vegetation whichever is the widest; (iii) minimise the clearing/disturbance of native vegetation and native riparian vegetation; and (iv) maximise light and moisture penetration under the viaduct and bridge structures to support native plant growth; (b) design of culverts and other crossings incorporate the following into the design to provide for movement of aquatic and terrestrial fauna, (i) elevated "dry" cells to encourage terrestrial movement, and recessed "wet" cells to facilitate the movement of aquatic fauna; (ii) maximise light penetration into the culvert structures; (iii) a naturalised base along the bed of the culvert; and 'fauna furniture' (such as rocks, logs, ropes and ledges) to facilitate fauna movement to maintain connectivity and provide fauna passage; (c) design of scour protection using natural solutions such as the revegetation of banks with local native species; and (d) details of remnant native vegetation including riparian vegetation. The Proponent must consult with DPHI EES, DPI Fisheries and engage suitably qualified experts in fauna crossing design to achieve the outcomes of this condition. Note: These design objectives must form part of the Place, Urban Design and Corridor Landscape Plan required under Condition E79.	Not Applicable	Not Applicable per Staging Report

<table>
<tr><th>Type</th><th>Condition Classification</th><th>Reference</th><th>Description</th><th>Responsibility</th><th>Where addressed</th></tr>
<tr><td>MCoA</td><td>Flooding</td><td>E15</td><td>The CSSI must be designed and constructed with the objective of not exceeding the flood impacts presented in the documents listed in Condition A1 or the flood impact criteria in Table 5, whichever is greater, within and in the vicinity of the CSSI for all flood events up to and including the one (1) per cent Annual Exceedance Probability (AEP) flood event.

Table 5: Flood Impact Criteria

<table>
<tr><th>Parameter</th><th>Location</th><th>Criteria</th></tr>
<tr><td rowspan="5">Afflux</td><td rowspan="3">Land zoned as residential, industrial or commercial, and critical infrastructure</td><td>Maximum 10 mm to buildings that are flood prone in existing conditions</td></tr>
<tr><td>No new above floor flooding</td></tr>
<tr><td>Maximum 50 mm where flooding is below floor level</td></tr>
<tr><td>Roads</td><td>Maximum 50 mm</td></tr>
<tr><td>Land zoned as rural, primary production, environment or public recreation</td><td>Maximum 100 mm</td></tr>
<tr><td>Velocity</td><td>All areas</td><td>Velocities are to remain below 1 metre per second. Where existing velocities exceed 1 metre per second, increase by less than 10 per cent</td></tr>
<tr><td rowspan="2">Flood hazard</td><td>Residential and commercial land</td><td>No increase in the flood hazard or risk to life</td></tr>
<tr><td>Roads</td><td>No increase in the flood hazard or risk to life</td></tr>
<tr><td rowspan="3">Flood duration</td><td>Residential and commercial buildings</td><td>No increase to duration of above floor flooding</td></tr>
<tr><td>Roads</td><td>No more than 1 hour increase</td></tr>
<tr><td>Crown land, open space, farming, grazing and cropping land</td><td>No more than 1 hour increase</td></tr>
</table>
</td><td>LORAC</td><td>EIS S14.5.1- states FSM is not in a flood prone area therefore the flood impact criteria is not applicable.</td></tr>
</table>

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
			Measures identified in the documents listed in Condition A1 to limit flooding impacts or measures that achieve the same outcome must be incorporated into the detailed design of the CSSI.		
MCoA	Flooding	E16	Updated modelling that incorporates these measures and is calibrated and validated with consideration of the results of the Wianamatta-South Creek Catchment Flood Assessment prepared by Infrastructure NSW as part of Stage 2 of the South Creek Sector Review must be prepared by a suitably qualified flood consultant. The modelling must identify changes in post-development flood behaviour including cumulative flood impacts associated with Western Sydney International Airport and the M12, where this information is available, prior to detailed design being finalised.	Not Applicable	Not Applicable per Staging Report
MCoA	Flooding	E17	Where flooding characteristics exceed the levels identified in Condition E15 above the Proponent must undertake the following: (a) consult with affected landowners for properties adversely flood affected as a result of the CSSI regarding appropriate mitigations; and (b) consult with the NSW State Emergency Service (SES) and Relevant Council(s) regarding the management of any continuous and residual flood risk from rarer flood events larger than the 1 per cent AEP and up to the probable maximum flood. In the event that the Proponent and the affected landowner cannot agree on the measures to mitigate the impact as described in Condition E15, the Proponent must engage a suitably qualified and experienced independent person to advise and assist in determining the impact and relevant mitigation measures.	Not Applicable	Not Applicable per Staging Report

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Flooding	E18	Flood information including flood reports, models and geographic information system outputs must be provided to the DPHI PDPS, Relevant Council(s), DPHI EES and the SES in order to assist in preparing relevant documents and to reflect changes in flood behaviour as a result of the CSSI. The DPHI PDPS, Relevant Council(s), DPHI EES and the SES must be notified in writing that the information is available no later than one (1) month following the completion of construction. Information requested by the DPHI PDPS, Relevant Council(s), DPHI EES or the SES must be provided no later than six (6) months following the completion of construction or within another timeframe agreed with the DPHI PDPS, Relevant Council(s), DPHI EES and the SES. The project flood models and data must be uploaded to the NSW Flood Data Portal and access must be provided to the DPHI PDPS, Relevant Council(s), DPHI EES and SES no later than one (1) month following the completion of construction.	Not Applicable	Not Applicable per Staging Report
MCoA	Heritage – Non-Aboriginal	E19	The Proponent must not destroy, modify or otherwise physically affect any Heritage item not identified in documents referred to in Condition A1. Unexpected heritage finds identified by the CSSI must be managed in accordance with the Unexpected Heritage Finds and Human Remains Procedure outlined in Conditions E34 to E36. Consideration of avoidance and redesign to protect unexpected finds of state heritage significance must be addressed where this condition applies.	LORAC	Attachment R of the CEMP: Heritage Management Procedure Attachment F of the CEMP: ERAPs- Heritage
MCoA	Heritage – Non-Aboriginal	E20	The dismantling and reassembly of the jib crane at St Marys Station, if required, must only be undertaken under the supervision of a consultant experienced in the conservation of heritage machinery.	LORAC	Attachment R of the CEMP: Heritage Management Procedure. Attachment F of the CEMP: ERAPs- Heritage. Note: It is not anticipated that the jib crane will need to be removed under the LORAC scope of works.

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Heritage – Non-Aboriginal	E21	The St Marys Goods Shed must not be destroyed, modified or otherwise adversely affected, except as identified in the documents listed in Condition A1.	LORAC	Attachment R of the CEMP: Heritage Management Procedure Attachment F of the CEMP: ERAPs- Heritage It is not anticipated that any LORAC works will take place within the area of concern regarding the goods shed potential for archaeology.
MCoA	Heritage – Non-Aboriginal	E22	The Archaeological Research Design (ARD) included in the documents listed in Condition A1 must be implemented during construction.	LORAC	Attachment R of the CEMP: Heritage Management Procedure Attachment F of the CEMP: ERAPs- Heritage The ARD is to be implemented as required. It is not anticipated that any LORAC works will take place within the area of concern regarding the goods shed potential for archaeology.
MCoA	Heritage – Non-Aboriginal	E23	Before commencement of archaeological excavation, the Proponent must, in consultation with Heritage NSW, nominate a suitably qualified Excavation Director, who complies with Heritage Council of NSW's Criteria for Assessment of Excavation Director (September 2019), to oversee and advise on matters associated with historical archaeology for the approval of the Planning Secretary. The Excavation Director must be present to oversee excavation, advise on archaeological issues, advise on the duration and extent of oversight required during archaeological excavations consistent with the Archaeological Research Design and Excavation Methodology(s) identified in the documents listed in Condition A1. More than one Excavation Director may be engaged for CSSI to exercise the functions required under the conditions of this approval.	LORAC	Attachment R of the CEMP: Heritage Management Procedure. Sophie Jennings of GML has been approved as Excavation Director.

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Heritage – Non-Aboriginal	E24	**Archival photographic digital recording** must be undertaken for all listed heritage items which will be affected by the CSSI. The recordings must be undertaken prior to the commencement of Work which may impact the items and documented in an Archival Recording Report. The recordings must include buildings, structures and landscape features and detailed maps showing the location of features. The archival recording must be prepared in accordance with How to Prepare Archival Records of Heritage Items (NSW Heritage Office, 1998) and Photographic Recording of Heritage Items Using Film or Digital Capture (NSW Heritage Office, 2006).	Sydney Metro	Completed St Marys Railway Station, St Marys: Archival Recording Report, January 2022
MCoA	Heritage – Non-Aboriginal	E25	The Archival Recording Report must be submitted to the Planning Secretary, relevant councils and Heritage NSW for information within 12 months of completing all work described in the documents listed in Condition A1 in relation to heritage items. Copies of the Archival Recording Report must also be provided to relevant local historical societies.	LORAC, except Sydney Metro will submit to the Planning Secretary, relevant councils and Heritage NSW	St Marys Railway Station, St Marys: Archival Recording Report, January 2022. LORAC St Marys Station archival recording will be supplied to Sydney Metro to issue to the Planning Secretary as required.
MCoA	Heritage – Non-Aboriginal	E26	Following completion of all work described in the documents listed in Condition A1 in relation to heritage items, a non-Aboriginal Archaeological Excavation Report including the details of further historical research either undertaken or to be carried out and archaeological excavations (with artefact analysis and identification of a final repository for finds) and addressing the research design, must be prepared in accordance with any guidelines and standards required by the Heritage Council of NSW and Heritage NSW.	LORAC	Attachment R of the CEMP: Heritage Management Procedure It is not planned or anticipated for any LORAC works will require archaeological excavation.
MCoA	Heritage – Non-Aboriginal	E27	The non-Aboriginal Archaeological Excavation Report must be submitted to the Planning Secretary, relevant councils and Heritage NSW for information within 12 months of completing all Work described in the documents listed in Condition A1 in relation to heritage items. Copies of the Report must also be provided to relevant local historical societies and local libraries.	LORAC, except Sydney Metro will submit to the Planning Secretary, relevant councils and Heritage NSW	Attachment R of the CEMP: Heritage Management Procedure. It is not planned or anticipated for any LORAC works will require archaeological excavation.

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Heritage Aboriginal Heritage	E28	All reasonable steps must be taken so as not to harm, modify or otherwise impact Aboriginal objects or places of cultural significance except as authorised by this approval.	LORAC	Attachment R of the CEMP: Heritage Management Procedure. No known Aboriginal objects or places of cultural significance in the vicinity of the LORAC works.
MCoA	Heritage Aboriginal Heritage	E29	The Registered Aboriginal Parties (RAPs) must be kept regularly informed about the CSSI. The RAPs must continue to be provided with the opportunity to be consulted about the Aboriginal cultural heritage management requirements of the CSSI throughout construction.	LORAC	Sydney Metro will inform RAPs regarding the CSSI and Sydney Metro's Aboriginal Cultural Heritage Management Plan
MCoA	Heritage Aboriginal Heritage	E31	The updated Aboriginal Cultural Heritage Management Plan must be implemented for the duration of salvage activities and construction.	LORAC	Is applicable as per the Staging Report. There are no Aboriginal archaeological sites in the FSM site. The updated ACHMP will be implemented during construction as applicable.
MCoA	Heritage Aboriginal Heritage	E32	At the completion of Aboriginal cultural heritage test and salvage excavations, an Aboriginal Cultural Heritage Excavation Report(s) must be prepared by a suitably qualified person. The Aboriginal Cultural Heritage Excavation Report(s) must: (a) be prepared in accordance with the Guide to Investigation, assessing and reporting on Aboriginal cultural heritage in NSW, OEH 2011 and the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales, DECCW 2010; and (b) document the results of the archaeological test excavations and any subsequent salvage excavations (with artefact analysis and identification of a final repository for finds). The RAPs must be given a minimum of 28 days to consider the report(s) and provide comments before the report(s) is finalised. The final report(s) must be provided to the Planning Secretary, Heritage NSW, the relevant Councils, Gandangara LALC and Deerubbin LALC, the RAPs and local libraries within 24 months of the completion of the Aboriginal archaeological excavations (both test and salvage).	Not Applicable	Not Applicable per Staging Report No Aboriginal archaeological investigations are required at St Marys Station; therefore, an Aboriginal Cultural Heritage Excavation Report is not expected to be required. An Aboriginal Cultural Heritage Excavation Report would be prepared if unexpected Aboriginal objects are encountered during the FSM works by Sydney Metro.

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Heritage Aboriginal Heritage	E33	Where previously unidentified Aboriginal objects or places of cultural significance are discovered, all work must immediately stop in the vicinity of the affected area. Works potentially affecting the previously unidentified objects or places must not recommence until Heritage NSW has been informed. The measures to consider and manage this process must be specified in the Unexpected Heritage Finds and Human Remains Procedure required by Condition E34 and include registration in the Aboriginal Heritage Information Management System (AHIMS), where required.	LORAC, except Sydney Metro to inform Heritage NSW/ existing allocation	Noted. Attachment R of the CEMP: Heritage Management Procedure Attachment F of the CEMP: ERAPs- Heritage Sydney Metro Unexpected Heritage Finds and Human Remains Procedure
MCoA	Heritage - Unexpected Finds and Human Remains	E34	An Unexpected Heritage Finds and Human Remains Procedure must be prepared to manage unexpected heritage finds (heritage items and values) in accordance with any guidelines and standards prepared by the Heritage Council of NSW or Heritage NSW.	Sydney Metro	Attachment R of the CEMP: Heritage Management Procedure. Attachment F of the CEMP: ERAPs- Heritage Sydney Metro Unexpected Heritage Finds and Human Remains Procedure
MCoA	Heritage - Unexpected Finds and Human Remains	E35	The Unexpected Heritage Finds and Human Remains Procedure must be prepared by a suitably qualified and experienced heritage specialist in consultation with the Heritage Council of NSW (with respect to non-Aboriginal cultural heritage) and in relation to Aboriginal cultural heritage, in accordance with the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010) and submitted to the Planning Secretary for information no later than one (1) month before the commencement of construction.	Sydney Metro	Attachment R of the CEMP: Heritage Management Procedure Sydney Metro Unexpected Heritage Finds and Human Remains Procedure
MCoA	Heritage - Unexpected Finds and Human Remains	E36	The Unexpected Heritage Finds and Human Remains Procedure, as submitted to the Planning Secretary, must be implemented for the duration of construction. Where archaeological investigations have been undertaken as a result of Unexpected Finds notifications then a Final Archaeological Report must be provided in accordance with Heritage Council guidance and standard requirements for final reporting under Excavation Permits.	Sydney Metro	Attachment R of the CEMP: Heritage Management Procedure Sydney Metro Unexpected Heritage Finds and Human Remains Procedure

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
			Note: Human remains that are found unexpectedly during the carrying out of work may be under the jurisdiction of the NSW State Coroner and must be reported to the NSW Police immediately. Management of human remains in NSW is subject to requirements set out in the Public Health Act 2010 (NSW) and Public Health Regulation 2012 (NSW). Nothing in these conditions prevents separate procedures for the Unexpected Heritage Finds and Human Remains Procedure.		
MCoA	Noise and vibration – Land Use Survey	E37	A detailed land use survey must be undertaken to confirm sensitive land use(s) (including critical working areas such as operating theatres and precision laboratories) potentially exposed to construction noise and vibration and construction ground-borne noise. The survey may be undertaken on a progressive basis but must be undertaken in any one area before the commencement of work which generates construction noise, vibration or ground-borne noise in that area. The results of the survey must be included in the Detailed Noise and Vibration Impact Statements required under Condition E47.	LORAC	Included within the FSM DNVIS (Attachment S)
MCoA	Noise and vibration – Construction Hours	E38	Work must only be undertaken during the following hours: (a) 7:00am to 6:00pm Mondays to Fridays, inclusive; (b) 8:00am to 1:00pm Saturdays; and (c) at no time on Sundays or public holidays.	LORAC	Noted. Attachment F of the CEMP: Operational Control Procedures - ERAPs - Noise and Vibration
MCoA	Noise and vibration – Highly Noise Intensive Works	E39	Except as permitted by an EPL or approved in accordance with the Out-of-Hours Works Protocol required by Condition E42, highly noise intensive work 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 work.	LORAC	Noted. Attachment F of the CEMP: Operational Control Procedures - ERAPs - Noise and Vibration Sydney Metro Out of Hours Works Protocol. FSM DNVIS (Attachment S)

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Noise and vibration – Highly Noise Intensive Works	E40	This approval does not permit blasting.	LORAC	Noted - no blasting to be undertaken as part of the LORAC scope.
MCoA	Noise and Vibration – Variation to Work Hours	E41	Notwithstanding Conditions E38 and E39 work may be undertaken outside the hours specified in the following circumstances: (a) Safety and Emergencies, including: (i) for the delivery of materials required by the NSW Police Force or other authority for safety reasons; or (ii) 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 (b) Low impact, including: (i) construction that causes LAeq(15 minute) noise levels: • no more than 5 dB(A) above the rating background level at any residence in accordance with the ICNG, and • no more than the 'Noise affected' NMLs specified in Table 3 of the ICNG at other sensitive land user(s); and (ii) construction that causes: • 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), or • 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 (c) By Approval, including: (i) where different construction hours are permitted or required under an EPL in force in respect of the CSSI; or (ii) works which are not subject to an EPL that are approved under an Out-of-Hours Work Protocol as required by Condition E42; or (iii) negotiated agreements with directly affected residents and sensitive land user(s); or (d) By Prescribed Activity, including:	LORAC	Attachment F of the CEMP: Operational Control Procedures - ERAPs - Noise and Vibration Sydney Metro Out of Hours Works Protocol. FSM DNVIS (Attachment S)

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
			(i) tunnelling and ancillary support activities (excluding cut and cover tunnelling and surface works not directly supporting tunneling) are permitted 24 hours a day, seven days a week; or		
			(ii) grout batching at the Orchard Hills construction site is permitted 24 hours per day, seven days per week; or		
			(iii) delivery of material that is required to be delivered outside of standard construction hours in Condition E38 to directly support tunnelling activities, except between the hours 10:00 pm and 7:00 am to / from the Orchard Hills ancillary facility; or		
			(iv) haulage of spoil generated through tunnelling is permitted 24 hours per day, seven days per week except between the hours of 10:00 pm and 7:00 am to / from the Orchard Hills construction site; or		
			(v) works within an acoustic enclosure are permitted 24 hours a day, seven days a week where there is no exceedance of noise levels or intermittent vibration levels under Low impact circumstances identified in Condition E41(b), unless otherwise agreed with the Planning Secretary; or		
			(vi) tunnel and underground station box fit out works are permitted 24 hours per day, seven days per week.		
			NSW Government 38		
			Department of Planning, Industry and Environment		
			Conditions of Approval for Sydney Metro – Western Sydney Airport (SSI 10051)		
			On becoming aware of the need for emergency work in accordance with (a)(ii) above, the ER, the Planning Secretary and the EPA must be notified of the reasons for such work. The Proponent must use best endeavours to notify as soon as practicable all noise and/or vibration affected sensitive land user(s) of the likely impact and duration of those work.		
			Notes:		
			1. Tunnelling does not include station box excavation.		
			2. Tunnelling ancillary support activities includes logistics support and material handling and delivery		

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Noise and Vibration - Variation to Work Hours	E42	An Out-of-Hours Work Protocol must be prepared to identify a process for the consideration, management and approval of work (not subject to an EPL) that is outside the hours defined in Conditions E38 and E39. The Protocol must be approved by the Planning Secretary before commencement of the out-of-hours work. The Protocol must be prepared in consultation with the ER. The Protocol must provide: (a) justification for why out-of-hours work need to occur; (b) identification of low and high-risk activities and an approval process that considers the risk of activities, proposed mitigation, management, and coordination, including where: (i) the ER reviews all proposed out-of-hours activities and confirms their risk levels; (ii) low risk activities that can be approved by the ER; and (iii) high risk activities that are approved by the Planning Secretary; (c) a process for the consideration of out-of-hours work against the relevant NML and vibration criteria; (d) 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 E56. The measures must take into account the predicted noise levels and the likely frequency and duration of the out-of-hours works that sensitive land user(s) would be exposed to, including the number of noise awakening events; (e) 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; and (f) notification arrangements for affected receivers for all approved out-of-hours works and notification to the Planning Secretary of approved low risk out-of-hours works. This condition does not apply if the requirements of Condition E41 are met. Note: Out-of-hours work is any work that occurs outside the construction hours identified in Condition E38 and E39.	Sydney Metro	LORAC will implement the approved Sydney Metro OOH Work Protocol
MCoA		E43	Mitigation measures must be implemented with the aim of achieving the following construction noise management levels and vibration criteria:	LORAC	

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
	Noise and Vibration - Construction Noise Management Levels and Vibration Criteria		(a) construction 'Noise affected' noise management levels established using the Interim Construction Noise Guideline (DECC, 2009); (b) preferred 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" (for human exposure); (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 Vibration CEMP Sub-plan. ***Note:*** *The ICNG identifies 'particularly annoying' activities that require the addition of 5 dB(A) to the predicted level before comparing to the construction Noise Management Level.*		Attachment F of the CEMP: Operational Control Procedures - ERAPs - Noise and Vibration Sydney Metro Out of Hours Works Protocol. FSM DNVIS (Attachment S)
MCoA	Noise and Vibration - Construction Noise Management Levels and Vibration Criteria	E44	All reasonable and feasible mitigation measures must be applied when the following residential ground-borne noise levels are exceeded: (a) evening (6:00 pm to 10:00 pm) — internal LAeq(15 minute): 40 dB(A); and (b) night (10:00 pm to 7:00 am) — internal LAeq(15 minute): 35 dB(A). The mitigation measures must be outlined in the Noise and Vibration CEMP Sub-plan, including in any Out-of-Hours Work Protocol, required by Condition E42.	LORAC	Attachment F of the CEMP: Operational Control Procedures - ERAPs - Noise and Vibration Sydney Metro Out of Hours Works Protocol. FSM DNVIS (Attachment S)

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Noise and Vibration - Construction Noise Management Levels and Vibration Criteria	E45	Noise generating work in the vicinity of potentially-affected community, religious, educational institutions and noise and vibration-sensitive businesses and critical working areas (such as theatres, laboratories and operating theatres) resulting in noise levels above the NMLs must not be timetabled within sensitive periods, unless other reasonable arrangements with the affected institutions are made at no cost to the affected institution.	LORAC	Attachment F of the CEMP: Operational Control Procedures - ERAPs - Noise and Vibration Sydney Metro Out of Hours Works Protocol. FSM DNVIS (Attachment S)
MCoA	Noise and Vibration - Construction Noise and Vibration Mitigation and Management	E46	Industry best practice construction methods must be implemented where reasonably practicable to ensure that noise and vibration levels are minimised around sensitive land use(s). Practices may include, but are not limited to: (a) use of regularly serviced low sound power equipment; (b) at source control, temporary noise barriers (including the arrangement of plant and equipment) around noisy equipment and activities such as rock hammering and concrete cutting; (c) use of non-tonal reversing alarms; and (d) use of alternative construction and demolition techniques.	LORAC	Attachment F of the CEMP: Operational Control Procedures - ERAPs - Noise and Vibration FSM DNVIS (Attachment S)
MCoA	Noise and Vibration - Construction Noise and Vibration Mitigation and Management	E47	Detailed Noise and Vibration Impact Statements (DNVIS) must be prepared for any work that may exceed the NMLs, vibration criteria and / or ground-borne noise levels specified in Conditions E43 and E44 at any residence outside construction hours identified in Condition E38, or where receivers will be highly noise affected or subject to vibration levels above those otherwise determined as appropriate by a suitably qualified structural engineer under Condition E87. The DNVIS must include specific mitigation measures identified through consultation with affected sensitive land user(s) and the mitigation measures must be implemented for the duration of the works. A copy of the DNVIS must be provided to the ER before the commencement of the associated works. The Planning Secretary and the EPA may request a copy (ies) of the DNVIS.	LORAC	Attachment F of the CEMP: Operational Control Procedures - ERAPs - Noise and Vibration FSM DNVIS (Attachment S)

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Noise and Vibration - Construction Noise and Vibration Mitigation and Management	E48	Owners and occupiers of properties at risk of exceeding the screening criteria for cosmetic damage must be notified before works that generate vibration commences in the vicinity of those properties. If the potential exceedance is to occur more than once or extend over a period of 24 hours, owners and occupiers must be provided a schedule of potential exceedances on a monthly basis for the duration of the potential exceedances, unless otherwise agreed by the owner and occupier. These properties must be identified and considered in the Noise and Vibration CEMP Sub-plan.	LORAC	Attachment F of the CEMP: Operational Control Procedures - ERAPs - Noise and Vibration No forecast of LORAC works exceeding the screening criteria for cosmetic damage at adjacent properties.
MCoA	Noise and Vibration - Construction Noise and Vibration Mitigation and Management	E49	Where sensitive land use(s) are identified in Appendix B as exceeding the highly noise affected criteria during typical case construction, mitigation measures must be implemented with the objective of reducing typical case construction noise below the highly noise affected criteria at each relevant sensitive landuse(s). Activities that would exceed highly noise affected criteria during typical case construction must not commerce until the measures identified in this condition have been implemented, unless otherwise agreed with the Planning Secretary. Note: Mitigation measures may include path barrier controls such as acoustic sheds and/or noise walls, at-property treatment, or a combination of path and at-property treatment.	Applicable	Applicable in the Staging report, but through knowledge of scope, will not be relevant.
MCoA	Noise and Vibration - Construction Noise and Vibration Mitigation and Management	E50	For all construction sites where acoustic sheds are installed, the sheds must be designed, constructed and operated to minimise noise emissions. This would include the following considerations: (a) all significant noise producing equipment that would be used during the night-time would be inside the sheds, where feasible and reasonable; (b) noise generating ventilation systems such as compressors, scrubbers, etc, would be located inside the sheds and external air intake/discharge ports would be appropriately acoustically treated; and (c) the doors of acoustic sheds would be kept closed during the night-time period. Where night-time vehicle access is required at sites with nearby residences, the shed entrances would be designed and constructed to minimise noise breakout.	Not Applicable	Applicable in the Staging report, but through knowledge of scope, will not be relevant. Hence classified as not applicable

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Noise and Vibration - Construction Noise and Vibration Mitigation and Management	E51	Where Condition E49 determines that at-property treatment (temporary or permanent) is the appropriate measure to reduce noise impacts, this at-property treatment must be offered to landowners of residential properties for habitable living spaces, unless other mitigation or management measures are agreed to by the landowner. Landowners must be advised of the range of options that can be installed at or in their property and given a choice as to which of these they agree to have installed. A copy of all guidelines and procedures that will be used to determine at-property treatment at their residence must be provided to the landowner.	Not Applicable	Applicable in the Staging report, but through knowledge of scope, will not be relevant. Hence classified as not applicable
MCoA	Noise and Vibration - Construction Noise and Vibration Mitigation and Management	E52	Any offer for at-property treatment or the application of other noise mitigation measures in accordance with Condition E51, does not expire until the noise impacts specified in Condition E49, affecting that property are completed, even if the landowner initially refuses the offer. Note: If an offer has been made but is not accepted, this does not preclude the commencement of construction under Condition E49.	Not Applicable	Applicable in the Staging report, but through knowledge of scope, will not be relevant. Hence classified as not applicable
MCoA	Noise and Vibration - Construction Noise and Vibration Mitigation and Management	E53	The implementation of at-property treatment does not preclude the application of other noise and vibration mitigation and management measures including temporary and long term accommodation.	Not Applicable	Applicable in the Staging report, but through knowledge of scope, will not be relevant. Hence classified as not applicable
MCoA	Noise and Vibration - Construction Vibration Mitigation – Heritage Items	E54	Vibration testing must be conducted during vibration generating activities that have the potential to impact on Heritage items to verify minimum working distances to prevent cosmetic damage. In the event that the vibration testing and attended monitoring shows that the preferred values for vibration are likely to be exceeded, the Proponent must review the construction methodology and, if necessary, implement additional mitigation measures. Such measures must include, but not be limited to, review or modification of excavation techniques.	LORAC	Attachment F of the CEMP: Operational Control Procedures - ERAPs - Noise and Vibration

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Noise and Vibration - Construction Vibration Mitigation – Heritage Items	E55	The Proponent must seek the advice of a heritage specialist on methods and locations for installing equipment used for vibration, movement and noise monitoring at Heritage items.	LORAC	Attachment R of the CEMP: Heritage Management Procedure
MCoA	Noise and Vibration - Utility Coordination and Respite	E56	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 noise sensitive land use(s) so that the respite is achieved in accordance with Condition E57; or (b) consider the provision of alternative respite or mitigation to impacted noise sensitive land use(s); and (c) provide documentary evidence to the ER in support of any decision made by the Proponent in relation to respite or mitigation. The consideration of respite must also include all other approved Critical SSI, SSI and SSD projects which may cause cumulative and / or consecutive impacts at receivers affected by the delivery of the CSSI.	LORAC	Attachment F of the CEMP: Operational Control Procedures - ERAPs - Noise and Vibration
MCoA	Noise and Vibration - Out-of-Hours Works – Community Consultation on Respite	E57	In order to undertake out-of-hours work outside the work hours specified under Condition E38, appropriate respite periods for the out-of-hours work must be identified in consultation with the community at each affected location on a regular basis. This consultation must include (but not be limited to) providing the community with: (a) a progressive schedule for periods no less than three (3) months, of likely out-of-hours work; (b) a description of the potential work, location and duration of the out-of-hours work; (c) the noise characteristics and likely noise levels of the work; and (d) likely mitigation and management measures which aim to achieve the relevant NMLs under Condition E43 (including the circumstances of when respite or relocation offers will be available and details about how the affected community can access these offers).	Sydney Metro will provide the Planning Secretary with the outcomes of community engagement, the identified respite periods and the scheduling of the likely out-of-hours works.	Attachment F of the CEMP: Operational Control Procedures - ERAPs - Noise and Vibration. LORAC will provide the ER and the EPA with the outcomes of community engagement, the identified respite periods and the scheduling of the likely out-of hours works.

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
			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 ER before the out of hours work commences, and to the EPA and the Planning Secretary prior to the out-of-hours work commencing on request. ***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 RBL at any residence.*		LORAC will provide Sydney Metro with all information and documentation it requires to provide the Planning Secretary with the outcomes of community engagement, the identified respite periods and the scheduling of the likely out-of-hours works.

MCoA	Noise and Vibration - Noise Mitigation - Operational Noise and Vibration Mitigation Measures	E58	The Proponent must prepare an Operational Noise and Vibration Review (ONVR) to confirm noise and vibration mitigation measures that would be implemented for the Operation of the CSSI for the ultimate service. The ONVR must be prepared as part of the iterative design development and in consultation with the EPA, relevant council(s), other relevant stakeholders and must: (a) identify appropriate Operational noise and vibration objectives and levels for surrounding development, including existing and potential future (as known at the time of ONVR preparation) sensitive land use(s); (b) confirm the operational noise and vibration predictions based on the expected final design. Confirmation must be based on an appropriately calibrated noise model; (c) identify sensitive landuses that are predicted to exceed: (i) noise criteria set out in the Rail Infrastructure Noise Guideline (EPA, 2013), Noise Policy for Industry (EPA, 2017); and (ii) vibration goals for human exposure for existing sensitive land use(s), as presented in Assessing Vibration: a Technical Guideline (DECC, 2006); (d) identify all noise and vibration mitigation measures including location, type and timing of mitigation measures, with a focus on: (i) source control and design; (ii) at the receiver (if relevant); and (iii) 'best practice' achievable noise and vibration outcome for each activity; (e) describe how the final suite of mitigation measures will achieve: (i) the noise criteria outlined in the Rail Infrastructure Noise Guideline (EPA, 2013) and Noise Policy for Industry (EPA, 2017); and (ii) vibration goals for human exposure for existing sensitive land use(s), as presented in Assessing Vibration: a Technical Guideline (DECC, 2006); (f) include a consultation strategy to seek feedback from directly affected landowners on the noise and vibration mitigation measures being offered; (g) include procedures for operational noise and vibration complaints management, including investigation and monitoring (subject to complainant agreement). The ONVR must be verified by an independent acoustic expert and submitted to the Planning Secretary for approval before the implementation of any operational noise mitigation measures.	Not Applicable	Not Applicable per Staging Report

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
			The Proponent must implement the identified noise and vibration control measures and make the ONVR publicly available. Note: The design of noise barriers and the like must be undertaken in consultation with the relevant stakeholders, including affected landowners and businesses (or a representative of a business), Western Parklands City Authority and relevant council(s) as part of the Place, Urban Design and Corridor Landscape Plan required under Condition E79.		
MCoA	Noise and Vibration - Noise Mitigation - Operational Noise and Vibration Mitigation Measures	E59	Operational noise mitigation measures as identified in Condition E58 that will not be physically affected by work, must be implemented within six months of submitting the ONVR, unless otherwise agreed by the Planning Secretary. Where implementation of operational noise mitigation measures are not proposed to be implemented in accordance with this requirement, the Proponent must submit to the Planning Secretary a report providing justification as to why, along with details of temporary measures that would be implemented to reduce construction noise impacts, until such time that the operational noise mitigation measures are implemented. The report must be submitted to the Planning Secretary within six months of submitting the ONVR. Note: Not having finalised detailed design is not sufficient justification for not implementing the proposed mitigation measures.	Not Applicable	Not Applicable per Staging Report

MCoA	Noise and Vibration - Noise Mitigation - Operational Noise and Vibration Mitigation Measures	E60	Within 12 months of the commencement of operation of the CSSI, the Proponent must undertake monitoring of operational noise to compare actual noise performance of the CSSI against the noise performance predicted in the review of noise mitigation measures required by Condition E58. An Operational Noise and Vibration Compliance Report (ONVCR) must be prepared to document this monitoring and include, but not necessarily be limited to: (a) noise and vibration monitoring to assess compliance with the operational noise levels predicted in the review of operational noise mitigation measures required under Condition E58; (b) methodology, location and frequency of noise and vibration monitoring undertaken, including monitoring sites at which CSSI noise and vibration levels are ascertained, with specific reference to locations indicative of impacts on receivers; (c) a review of the performance of the CSSI against the: (i) operational noise levels in terms of criteria and noise goals established in the NSW Rail Infrastructure Noise Guideline (EPA 2013) and Noise Policy for Industry (EPA, 2017); (ii) vibration goals for human exposure for existing sensitive land use(s), as presented in Assessing Vibration: a Technical Guideline (DECC, 2006); (d) details of any complaints and enquiries received in relation to Operational noise and vibration generated by the CSSI (between the date of commencement of Operation and the date the report was prepared); (e) an assessment of the performance and effectiveness of applied noise and vibration mitigation measures together with a review and if necessary, reassessment of mitigation measures; (f) identification of: (i) additional measures to meet the criteria outlined in the NSW Rail Infrastructure Noise Guideline (EPA 2013) and Noise Policy for Industry (EPA, 2017), (ii) additional measures to meet the vibration goals for human exposure for existing sensitive land, as presented in Assessing Vibration: a Technical Guideline (DECC, 2006); (iii) when these measures are to be implemented; and (iv) how their effectiveness is to be measured and reported to the Planning Secretary and the EPA. The ONVCR must be submitted to the Planning Secretary and the EPA within 60 days of completing the Operational noise and vibration monitoring and made publicly available. Note: Refer to Condition B5 about how personal information will be handled.	Not Applicable	Not Applicable per Staging Report

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Place, Urban Design and Visual Amenity – Construction Sites	E61	Wayfinding information must be incorporated on temporary hoardings to guide pedestrians around the St Marys construction site and enhance their understanding and experience of the locality and space.	LORAC	Attachment F of the CEMP: Operational Control Procedures - ERAPs - Visual Amenity
MCoA	Place, Urban Design and Visual Amenity – Construction Sites	E62	The CSSI must be constructed in a manner that minimises visual impacts of construction sites including temporary landscaping and vegetative screening, minimising light spill, and incorporating architectural treatment and finishes within key elements of temporary structures that reflect the context within which the construction sites are located, wherever practicable.	LORAC	Attachment F of the CEMP: Operational Control Procedures - ERAPs - Visual Amenity
MCoA	Place, Urban Design and Visual Amenity – Design Requirements and Strategic Context	E63	The CSSI must be designed with consideration of: the design objectives, principles and guidelines identified in documents listed in Condition A1; the principles and objectives of the draft Connecting with Country Framework; relevant land use changes, masterplans and initiatives, where this information is known and/or available; existing and proposed future local context and character; and transport and land use integration and system functionality in the context of precincts, to the extent it is known and/or defined. Responses to items (a) – (e) must be reviewed by the Design Review Panel (DRP) to inform the design of permanent built works and landscape design of the CSSI. The outcome of the DRP review must be provided to the Planning Secretary prior to the submission of the Place, Urban Design and Corridor Landscape Plan (PUDCLP). Note: In accordance with Condition A10 and Condition A16, the requirements of this condition can be staged.	LORAC, except Sydney Metro will submit the outcome of the DRP review to the Planning Secretary / existing allocation	The Place, Urban Design and Corridor Landscape Plan is applicable and will be prepared for the FSM works.
MCoA	Place, Urban Design and Visual Amenity - Design Guidance and Standards - Lighting and Security	E64	The CSSI must be constructed and operated with the objective of minimising light spill to surrounding properties. All lighting associated with the CSSI must be consistent with the requirements of: (a) ASINZS 4282:2019 Control of the obtrusive effects of outdoor lighting, relevant Australian Standards in the series ASINZS 1158 - Lighting for Roads and Public Spaces; (b) NASF Guideline E: Managing the Risk of Distractions to Pilots from Lighting in the Vicinity of Airports; and	LORAC	Attachment F of the CEMP: Operational Control Procedures - ERAPs - Visual Amenity

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
			(c) NASF Guideline C: Managing the risk of wildlife strikes in the vicinity of airports. Mitigation measures must be provided to manage residual night lighting impacts to protect properties adjoining or adjacent to the CSSI, in consultation with affected landowners.		
MCoA	Place, Urban Design and Visual Amenity - Design Guidance and Standards - Active Transport	E65	Designs must have regard to the Movement and Place Framework relevant guidance including the Walking Space Guide: Towards Pedestrian Comfort and Safety (TfNSW, 2020) and the Cycleway Design Toolbox: Designing for Cycling and Micromobility (TfNSW, 2020).	Not Applicable	Not Applicable as per Staging Report. Design Reports and PUDCLP will have regard to these guidelines.
MCoA	Place, Urban Design and Visual Amenity - Design Guidance and Standards - Active Transport	E66	Active transport facilities must be designed, constructed and/or rectified in accordance with the Guide to Road Design Part 6A: Paths for Walking and Cycling (Austroads, 2017) and relevant Australian Standards (AS) such as AS 1428.1-2009 Design for access and mobility. The active transport links must also incorporate relevant Crime Prevention Through Environmental Design principles.	Not Applicable	Applicable in the Staging report, CoA E66 is applicable to the Northern Plaza, taxi, kiss and ride, plaza entrance, bike shed, footpaths and is captured in the PUDCLP
MCoA	Design Review Panel and Design Review – Panel membership	E67	The Proponent must establish an independent DRP to provide advice and recommendations to the Proponent during the CSSI's design development and construction to facilitate quality design and place outcomes. The DRP must be formed and hold its first meeting within six months of the date of this approval, or as otherwise agreed with the Planning Secretary. Note: Nothing in this approval prevents the use of an existing design panel as the Design Review Panel convened for this project where the function and composition of that panel complies with the terms of this approval.	Sydney Metro	Noted. To be completed by Sydney Metro where applicable. LORAC will participate in the DRP where required, and provide the DRP with any information or documentation they require to meet their obligations under this approval.

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Design Review Panel and Design Review – Panel membership	E68	The responsibilities of the Design Review Panel include: (a) providing advice and recommendations to the Proponent for consideration in the design development of the CSSI (b) provide advice on the application of Sydney Metro – Western Sydney Airport Submissions Report – Appendix D Design Guidelines to key design elements in relation to place making, architecture, heritage, urban and landscape design and artistic aspects of the CSSI; and (c) reviewing and endorsing any updates to the Sydney Metro – Western Sydney Airport Submissions Report – Appendix D Design Guidelines. The Panel's advice must be consistent with the CSSI as approved.	Sydney Metro	Noted. To be completed by Sydney Metro where applicable. LORAC will participate in the DRP, where required, and provide the DRP with any information or documentation they require to meet their obligations under this approval.
MCoA	Design Review Panel and Design Review – Panel membership	E69	The DRP must be chaired by the NSW Government Architect (or their nominee), and must be comprised of, where relevant, by suitably qualified, experienced and independent professional(s) in each of the fields of: (a) urban design and place making; (b) landscape architecture; and (c) architecture. The Panel may seek advice from suitably qualified, experienced independent professionals in other fields as required, including but not limited to sustainability, active transport and non-Aboriginal heritage. The Panel must also seek appropriate expertise to ensure Aboriginal cultural heritage and cultural values inform its advice.	Sydney Metro	Noted. To be completed by Sydney Metro where applicable. LORAC will participate in the DRP where required, and provide the DRP with any information or documentation they require to meet their obligations under this approval.
MCoA	Design Review Panel and Design Review – Panel membership	E70	Panel members must be sourced from the NSW State Design Review Panel Pool or otherwise be approved by the NSW Government Architect	Sydney Metro	Noted. To be completed by Sydney Metro where applicable.

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Design Review Panel and Design Review – Panel membership	E71	Prior to forming the DRP, a Design Review Panel Terms of Reference is to be developed and endorsed by the NSW Government Architect. The Terms of Reference must be submitted to the Planning Secretary once it is endorsed by the NSW Government Architect and: (a) must be generally consistent with the NSW State Design Review Panel Terms of Reference (version 5); (b) outline the frequency of DRP meetings, coordinated with the Proponent's program requirements, as outlined in Condition E76, to ensure timely advice and design adjustment; and (c) identify cessation arrangements.	Sydney Metro	Noted. To be completed by Sydney Metro where applicable.
MCoA	Design Review Panel and Design Review – Panel membership	E72	The DRP must be operated and managed in accordance with the Design Review Panel Terms of Reference.	Sydney Metro	Noted. To be completed by Sydney Metro where applicable.
MCoA	Design Review Panel and Design Review – Operation of the Design Review Process	E73	The NSW Government Architect must, after consultation with the Proponent, appoint an appropriately qualified and experienced design advisor to the DRP and may appoint an alternate design advisor. The advisor must attend meetings of the Panel. The advisor may also be invited by the Panel to assist with decisions regarding the Panel's recommendations and record the Panel's advice and recommendations.	Sydney Metro	Noted. To be completed by Sydney Metro where applicable.
MCoA	Design Review Panel and Design Review – Operation of the Design Review Process	E74	The relevant council may be invited to the meetings of the Panel as observers or to provide feedback on key design elements of the CSSI.	Sydney Metro	Noted. To be completed by Sydney Metro where applicable.
MCoA	Design Review Panel and Design Review – Operation of the Design Review Process	E75	DRP advice and recommendations, as issued by the Panel, and the Proponent's response to each recommendation must be included when submitting the final PUDCLP to the Planning Secretary for information.	Sydney Metro	Noted. To be completed by Sydney Metro where applicable. LORAC will participate in the DRP where required and provide the DRP with any information or documentation they require to meet their obligations under this approval.

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Design Review Panel and Design Review – Operation of the Design Review Process	E76	The Proponent must provide the design development schedule to the DRP prior to its first meeting, including details of when relevant elements of the detailed design will be available for review by the Panel. The schedule must be updated every three months until the detailed design process is complete.	Sydney Metro	Noted. To be completed by Sydney Metro where applicable. LORAC will participate in the DRP where required, and provide the DRP with any information or documentation they require to meet their obligations under this approval.
MCoA	Design Review Panel and Design Review – Place, Urban Design and Corridor Landscape Plan	E77	A PUDCLP must be prepared to document and illustrate the permanent built works and landscape design of the CSSI and how these works are to be maintained. The PUDCLP must be: (a) prepared by a suitably qualified and experienced person(s) in consultation with the community (including the affected landowners and businesses or a representative of the businesses), Western Parklands City Authority, Western Sydney Planning Partnership and relevant council(s); (b) reviewed by an independent and suitably qualified and experienced person nominated by the DRP; (c) submitted to the Planning Secretary prior to the construction of permanent built surface works and/or landscaping, excluding those elements which for ecological requirements, or technical requirements, or requirements as agreed by the Planning Secretary do not allow for alternate design outcomes; and (d) implemented during construction and operation of the CSSI. Note: The PUDCLP may be developed and considered in stages to facilitate design progression and construction. Any such staging and associated approval would need to facilitate a cohesive final design and not limit final design outcomes.	LORAC and Sydney Metro	(a) LORAC to develop and submit to Sydney Metro a PUDCLP (b) Sydney Metro (LORAC to provide all information required and respond to all comments) (c) Sydney Metro to submit to the Planning Secretary (d) LORAC during construction
MCoA	Design Review Panel and Design Review – Place, Urban Design and Corridor Landscape Plan	E78	The PUDCLP must document how the following matters have been considered in the design and landscaping of the project: (a) the requirements of Conditions E63 to E65, and (b) advice and recommendations from the DRP.	LORAC	LORAC to develop and submit to Sydney Metro a PUDCLP

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Design Review Panel and Design Review – Place, Urban Design and Corridor Landscape Plan	E79	The PUDCLP must include descriptions and visualisations (as appropriate) of: (a) design of the permanent built elements of the CSSI, including stabling and maintenance and ancillary facilities, service facilities and tunnel portals; (b) plans for station precincts including but not limited to (i) justification of the spatial scope of each station precinct plan; (ii) provision for public art and heritage interpretation installations; (iii) placemaking opportunities, having regard to placemaking initiatives in Western Sydney Aerotropolis planning documents; (iv) interchange access plans developed in consultation with the Traffic and Transport Liaison Group; (v) active transport connections and end of trip facilities, design of pedestrian and cycle access, facilities and fixtures; (vi) design of commuter car parking elements, where relevant; (c) landscaping and building design opportunities to mitigate visual impacts and minimise light spill on the nearby residences; (d) the design of watercourse crossings and east-west corridor movements to give to effect of Condition E14; (e) landscaping: (i) landscape plan, hard and soft elements, for the corridor and the station precincts; (ii) use of native species from the relevant native vegetation community (or communities), where identified as appropriate; (iii) water sensitive urban design initiatives (vii) management and routine maintenance standards and regimes for design elements and landscaping work (including weed management) to ensure the success of the design; (viii) measures to prevent wildlife strike risk in proximity to Western Sydney International Airport; (f) details of strategies to rehabilitate, regenerate or revegetate disturbed areas, where relevant; (g) management and routine maintenance standards and regimes for design elements and landscaping work (including weed management) to ensure the success of the design; (h) operational maintenance standards; and (i) the timing and responsibilities for implementation of elements included within the PUDCLP.	LORAC	LORAC to develop and submit to Sydney Metro a PUDCLP

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Design Review Panel and Design Review – Operational maintenance	E80	The ongoing maintenance and operation costs of urban design, open space, landscaping and recreational items and work implemented as part of this approval remain the Proponent's responsibility until satisfactory arrangements have been put in place for the transfer of the asset to the relevant authority. Before the transfer of assets, the Proponent must maintain items and work to at least the design standards established in the PUDCLP, required by Condition E79. The Planning Secretary must be advised prior to the transfer of the asset(s) to the relevant authority.	LORAC	LORAC to develop and submit to Sydney Metro a PUDCLP
MCoA	Design Review Panel and Design Review – Operational maintenance	E81	Should any plant loss occur during the maintenance period the plants must be replaced by the same plant species unless it is determined by a suitably qualified person that a different species is more suitable for that location.	Not Applicable	Not Applicable as per Staging Report
MCoA	Socio-Economic, Land Use and Property	E82	The CSSI must be designed and constructed with the objective of minimising impacts to, and interference with third party property, and that such infrastructure and property is protected during construction.	LORAC	Attachment F of the CEMP: Operational Control Procedures - ERAPs - Socio-Economic, Land Use and Property
MCoA	Socio-Economic, Land Use and Property	E83	The utilities and services (hereafter "services") potentially affected by construction must be identified to determine requirements for diversion, protection and / or support. Alterations to services must be determined by negotiation between the Proponent and the service providers. Disruption to services resulting from construction must be avoided, wherever possible, and advised to customers where it is not possible.	LORAC	Attachment F of the CEMP: Operational Control Procedures - ERAPs - Socio-Economic, Land Use and Property
MCoA	Socio-Economic, Land Use and Property - Condition Survey	E84	A suitably qualified and experienced person must undertake condition surveys of all buildings, structures, utilities and the like identified in the documents listed in Condition A1 and the further assessment carried out under mitigation measure GW1 of the Submissions Report as being at risk of damage before commencement of any work that could impact on the subject surface / subsurface structure. The results of the surveys must be documented in a Pre-construction Condition Survey Report for each item surveyed. Copies of Pre-construction Condition Survey Reports must be provided to the relevant owners of the items surveyed in the vicinity of the proposed work, and no later than one (1) month before the commencement of the work that could impact on the subject surface / subsurface structure.	LORAC	Attachment F of the CEMP: Operational Control Procedures - ERAPs - Socio-Economic, Land Use and Property

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Socio-Economic, Land Use and Property - Condition Survey	E85	Condition surveys of all items for which condition surveys were undertaken in accordance with Condition E84 must be undertaken by a suitably qualified and experienced person after completion of the work identified in Condition E84. The results of the surveys must be documented in a Post-construction Condition Survey Report for each item surveyed. Copies of Post-construction Condition Survey Reports must be provided to the landowners of the items surveyed, and no later than three (3) months following the completion of the work that could impact on the subject surface / subsurface structure.	LORAC	Attachment F of the CEMP: Operational Control Procedures - ERAPs - Socio-Economic, Land Use and Property
MCoA	Socio-Economic, Land Use and Property - Condition Survey	E86	The Proponent, where liable, must rectify any property damage caused directly or indirectly (for example from vibration or from groundwater change) by the work at no cost to the owner. Alternatively, the Proponent may pay compensation for the property damage as agreed with the property owner. Rectification or compensation must be undertaken within 12 months of completion of the work identified in Condition E84 unless another timeframe is agreed with the owner of the affected surface or sub-surface structure or recommended by the Independent Property Impact Assessment Panel (IPIAP).	LORAC for any damage associated with the Works	Attachment F of the CEMP: Operational Control Procedures - ERAPs - Socio-Economic, Land Use and Property
MCoA	Socio-Economic, Land Use and Property - Condition Survey	E87	Appropriate equipment to monitor areas in proximity of ancillary facilities and the tunnel route must be installed during construction with particular reference to at risk buildings, structures and utilities identified in the condition surveys required by Condition E84 and / or geotechnical analysis as required. If monitoring during construction indicates exceedance of the vibration criteria identified in the DNVIS prepared under Condition E47, or levels otherwise determined as appropriate by a suitably qualified structural engineer, then all construction affecting settlement must cease immediately and must not resume until fully rectified or a revised method of construction is established that will ensure protection of affected buildings.	LORAC	Footbridge St Marys DNVIS (Attachment S)
MCoA	Socio-Economic, Land Use and Property - Condition Survey	E88	An IPIAP must be established prior to tunnelling activities commencing. The Planning Secretary must be informed of the members of the IPIAP and must comprise geotechnical and engineering experts independent of the design and construction team. The IPIAP will be responsible for independently verifying condition surveys undertaken under Conditions E84 and E85, the resolution of property damage disputes and the establishment of ongoing settlement monitoring requirements.	Not Applicable	Not Applicable as per Staging Report

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Socio-Economic, Land Use and Property - Condition Survey	E89	Either the affected property owner or the Proponent may refer unresolved disputes arising from potential and/or actual property impacts to the IPIAP for resolution. All costs incurred in the establishing and implementing of the panel must be borne by the Proponent regardless of which party makes a referral to the IPIAP. The findings and recommendations of the IPIAP are final and binding on the Proponent.	Not Applicable	Not Applicable as per Staging Report
MCoA	Socio-Economic, Land Use and Property - Condition Survey	E90	Settlement must be monitored for any period beyond the minimum timeframe requirements of Condition E87 if directed so by the IPIAP following its review of the monitoring data from the period not less than six (6) months after settlement has stabilised, consistent with Condition E87. The results of the monitoring must be made available to the Planning Secretary upon request.	Not Applicable	Not Applicable as per Staging Report
MCoA	Small Business Owners Engagement Plan(s)	E91	Small Business Owners Engagement Plan(s) must be prepared for St Marys and implemented in accordance with the Overarching Community Communication Strategy to minimise impact on small businesses directly affected by construction activities at St Marys during construction. The plan must be prepared and submitted to the Planning Secretary for information before the commencement of construction at St Marys.	LORAC	LORAC Small Business Owners Engagement Plan, Advanced and Enabling Works – St Marys. This will generally comply with the Sydney Metro Small Business Owners Engagement Plan, Advanced and Enabling Works – St Marys.
MCoA	Soil and contamination - Contaminated sites	E92	Before commencement of any construction that would result in the disturbance of moderate to high risk contaminated sites as identified in the documents identified in Condition A1, Detailed Site Investigations (for contamination) must be conducted to determine the full nature and extent of the contamination. The Detailed Site Investigation Report(s) and the subsequent report(s), must be prepared, or reviewed and approved, by consultants certified under either the Environment Institute of Australia and New Zealand's Certified Environmental Practitioner (Site Contamination) scheme (CEnvP(SC)) or the Soil Science Australia Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) scheme. The Detailed Site Investigations must be undertaken in accordance with guidelines made or approved under section 105 of Contaminated Land Management Act 1997 (NSW). Note: Nothing in this condition prevents the Proponent from preparing individual Detailed Site Investigation Reports (for contamination) for separate sites.	LORAC	No planned disturbance of sites identified as moderate to high risk contaminated sites. In accordance with REMM SC1, for low risk areas of environmental concern, worker health and safety measures, waste management and tracking for contamination will be outlined.

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Soil and contamination - Contaminated sites	E93	Should remediation be required to make land suitable for the final intended land use, a Remedial Action Plan must be prepared, or reviewed and approved, by consultants certified under either the Environment Institute of Australia and New Zealand's Certified Environmental Practitioner (Site Contamination) scheme (CEnvP(SC)) or the Soil Science Australia Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) scheme. The Remedial Action Plan must be prepared in accordance with relevant guidelines made or approved by the EPA under section 105 of the Contaminated Land Management Act 1997 (NSW) and must include measures to remediate the contamination at the site to ensure the site will be suitable for the proposed use when the Remedial Action Plan is implemented. ***Note:*** *Nothing in this condition prevents the Proponent from preparing individual Remedial Action Plans for separate sites.*	LORAC	Section 12.8.3 of the CEMP: Contamination and Hazardous Materials (Within Soil) No planned disturbance of sites identified as moderate to high risk contaminated sites.
MCoA	Soil and contamination - Contaminated sites	E94	Before commencing remediation, a Section B Site Audit Statement(s) must be prepared by an NSW EPA-accredited Site Auditor that certifies that the Remedial Action Plan(s) is/are appropriate and that the site can be made suitable for the proposed use. The Remedial Action Plan(s) must be implemented and any changes to the Remedial Action Plan(s) must be approved in writing by the NSW EPA-accredited Site Auditor. ***Note:*** *Nothing in this condition prevents the Proponent from engaging an NSW EPA-accredited Site Auditor to prepare individual Site Audit Statements for Remedial Action Plans for separate sites.*	LORAC	Section 12.8.3 of the CEMP: Contamination and Hazardous Materials (Within Soil) No planned disturbance of sites identified as moderate to high risk contaminated sites.
MCoA	Soil and contamination - Contaminated sites	E95	Validation Report(s) must be prepared in accordance with Consultants Reporting on Contaminated Land: Contaminated Land Guidelines (EPA, 2020) and relevant guidelines made or approved under section 105 of the Contaminated Land Management Act 1997 (NSW). ***Note:*** *Nothing in this condition prevents the Proponent from preparing individual Validation Reports for separate sites.*	LORAC	Section 12.8.3 of the CEMP: Contamination and Hazardous Materials (Within Soil) No planned disturbance of sites identified as moderate to high risk contaminated sites.

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Soil and contamination - Contaminated sites	E96	A Section A1 or Section A2 Site Audit Statement (accompanied by an Environmental Management Plan) and its accompanying Site Audit Report, which state that the contaminated land disturbed by the work has been made suitable for the intended land use, must be submitted to the Planning Secretary and the Relevant Council(s) after remediation and before the commencement of operation of the CSSI. ***Note:*** *Nothing in this condition prevents the Proponent from obtaining Section A Site Audit Statements for individual parcels of remediated land.*	LORAC, except Sydney Metro will submit documents to the planning secretary	Section 12.8.3 of the CEMP: Contamination and Hazardous Materials (Within Soil) No planned disturbance of sites identified as moderate to high risk contaminated sites.
MCoA	Soil and contamination - Contaminated sites	E97	A copy of Detailed Site Investigation Report(s), Remedial Action Plan(s), Validation Report(s), Site Audit Report(s) and Site Audit Statement(s) must be submitted to the Planning Secretary and the Relevant Council(s) for information	LORAC, except Sydney Metro will submit documents to the planning secretary	Section 12.8.3 of the CEMP: Contamination and Hazardous Materials (Within Soil) No planned disturbance of sites identified as moderate to high risk contaminated sites.
MCoA	Soil and contamination - Contaminated sites	E98	An **Unexpected Contaminated Land and Asbestos Finds Procedure** must be prepared before the commencement of construction and must be followed should unexpected, contaminated land or asbestos (or suspected contaminated land or asbestos) be excavated or otherwise discovered during construction.	LORAC	Section 12.8.10 of the CEMP: Unexpected Finds CEMP Attachment K
MCoA	Soil and contamination - Contaminated sites	E99	The Unexpected Contaminated Land and Asbestos Finds Procedure must be implemented throughout construction.	LORAC	Noted. Section 12.8.10 of the CEMP: Unexpected Finds CEMP Attachment K
MCoA	Sustainability	E100	A Sustainability Plan must be prepared to achieve an Infrastructure Sustainability Council of Australia (ISCA) Infrastructure Sustainability rating of +75 (Version 1.2) (or equivalent level of performance using a demonstrated equivalent rating tool) or a 5-Star Green Star rating (or equivalent level of performance using a demonstrated equivalent rating tool).	Sydney Metro	FSM Sustainability Management Plan.

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Sustainability	E101	The Sustainability Plan must be submitted to the Planning Secretary for information within six (6) months of the date of this approval and must be implemented throughout construction and operation. Note: Nothing in this condition prevents the Proponent from preparing separate Sustainability Strategies for the construction and operational stages of the CSSI.	LORAC to implement the Sustainability Plan. Sydney Metro to provide the Sustainability Plan to the Planning Secretary.	FSM Sustainability Management Plan.
MCoA	Sustainability	E102	A Water Reuse Strategy must be prepared, which sets out options for the reuse of collected stormwater and groundwater during construction and operation. The Water Reuse Strategy must include, but not be limited to: (a) evaluation of reuse options; (b) details of the preferred reuse option(s), including volumes of water to be reused, proposed reuse locations and/or activities, proposed treatment (if required), and any additional licences or approvals that may be required; (c) measures to avoid misuse of recycled water as potable water; (d) consideration of the public health risks from water recycling; and (e) time frame for the implementation of the preferred reuse option(s). The Water Reuse Strategy must be prepared based on best practice and advice sought from relevant agencies, as required. The Strategy must be applied during construction. Justification must be provided to the Planning Secretary if it is concluded that no reuse options prevail. A copy of the Water Reuse Strategy must be made publicly available. Note: Nothing in this condition prevents the Proponent from preparing separate Water Reuse Strategies for the construction and operational stages of the CSSI.	LORAC	Water Reuse Plan CEMP Attachment Q
MCoA	Traffic and Transport	E103	Construction Traffic Management Plans (CTMPs) must be prepared in accordance with the Construction Traffic Management Framework. A copy of the CTMPs must be submitted to the Planning Secretary for information before the commencement of any construction in the area identified and managed within the relevant CTMP.	LORAC, except Sydney Metro will submit to the Planning Secretary	LORAC Construction Traffic Management Plan (CTMP)

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Traffic and Transport - Management of Heavy Vehicle Movements	E104	The locations of all Heavy Vehicles used for spoil haulage must be monitored in real time and the records of monitoring be made available electronically to the Planning Secretary and the EPA upon request for a period of no less than one (1) year following the completion of construction	LORAC	Not considered appropriate for relatively minor work scopes.
MCoA	Traffic and Transport - Management of Heavy Vehicle Movements	E105	Local roads proposed to be used by Heavy Vehicles to directly access ancillary facilities / construction sites that are not identified in the documents listed in Condition A1 must be approved by the Planning Secretary and be included in the CTMP.	LORAC to provide documentation to Sydney Metro for submission to the Planning Secretary	Attachment F: ERAP – Traffic Management Construction Traffic Management Plan (CTMP) Heavy Vehicle Load Report D.1
MCoA	Traffic and Transport - Management of Heavy Vehicle Movements	E106	All requests to the Planning Secretary for approval to use local roads under Condition E105 above must include the following: (a) a swept path analysis; (b) demonstration that the use of local roads by Heavy Vehicles for the CSSI will not compromise the safety of pedestrians and cyclists of the safety of two-way traffic flow on two-way roadways; (c) details as to the date of completion of the road dilapidation surveys for the subject local roads; and (d) measures that will be implemented to avoid where practicable the use of local roads past schools, aged care facilities and child care facilities during their peak operation times; and (e) written advice from an appropriately qualified professional on the suitability of the proposed Heavy Vehicle route which takes into consideration items (a) to(d) of this condition.	LORAC	Attachment F: ERAP – Traffic Management Construction Traffic Management Plan (CTMP) Heavy Vehicle Load Report D.1
MCoA	Traffic and Transport - Road Dilapidation	E107	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 Road Authority(s) within three (3) weeks of completion of the survey and at no later than one (1) month before the road being used by Heavy Vehicles associated with the construction of the CSSI.	LORAC	Construction Traffic Management Plan (CTMP); Attachment F of the CEMP: ERAPs- Traffic
MCoA	Traffic and Transport - Road Dilapidation	E108	If damage to roads occurs as a result of the construction of the CSSI, the Proponent must either (at the Relevant Road Authority's discretion): (a) compensate the Relevant Road Authority for the damage so caused; or (b) rectify the damage to restore the road to at least the condition it was in pre-work as identified in the Road Dilapidation Report.	LORAC	Construction Traffic Management Plan (CTMP), Attachment F of the CEMP: ERAPs- Traffic

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Traffic and Transport - Construction Parking and Access Management	E109	Vehicles associated with the project workforce (including light vehicles and Heavy Vehicles) must be managed to: (a) minimise parking on public roads; (b) minimise idling and queueing on state and regional roads; (c) not carry out marshalling of construction vehicles near sensitive land use(s); (d) not block or disrupt access across pedestrian or shared user paths at any time unless alternate access is provided; and (e) ensure spoil haulage vehicles adhere to the nominated haulage routes identified in the CTMP.	LORAC	Construction Traffic Management Plan (CTMP), Attachment F of the CEMP: ERAPs- Traffic
MCoA	Traffic and Transport - Property Access	E110	Access to all utilities and properties must be maintained during works, unless otherwise agreed with the relevant utility owner, landowner or occupier.	LORAC	Construction Traffic Management Plan (CTMP), Attachment F of the CEMP: ERAPs- Traffic
MCoA	Traffic and Transport - Property Access	E111	The Proponent must maintain access to properties during the entirety of works unless an alternative access is agreed in writing with the landowner(s) whose access is impacted by the CSSI works.	LORAC	Construction Traffic Management Plan (CTMP), Attachment E of the CEMP: ERAPs- Traffic
MCoA	Traffic and Transport - Property Access	E112	Where construction of the CSSI restricts a property's access to a public road, the Proponent must, until their primary access is reinstated, provide the property with temporary alternate access to an agreed road decided through consultation with the landowner, at no cost to the property landowner, unless otherwise agreed with the landowner.	LORAC	Construction Traffic Management Plan (CTMP)
MCoA	Traffic and Transport - Property Access	E113	Any property access physically affected by the CSSI must be reinstated to at least an equivalent standard, unless otherwise agreed by the landowner or occupier. Property access must be reinstated within one (1) month of the work that physically affected the access is completed or in any other timeframe agreed with the landowner or occupier.	LORAC	Construction Traffic Management Plan (CTMP), Attachment F of the CEMP: ERAPs- Traffic

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Traffic and Transport - Property Access	E114	During construction, all reasonably practicable measures must be implemented to maintain pedestrian, cyclist and vehicular access to, and parking in the vicinity of, businesses and affected properties. Disruptions are to be avoided, and where avoidance is not possible, minimised. Where disruption cannot be avoided, alternative pedestrian, cyclist and vehicular access, and parking arrangements must be developed in consultation with affected businesses and landowners and implemented before the disruption. Adequate signage and directions to businesses must be provided before, and for the duration of, any disruption.	LORAC	Construction Traffic Management Plan (CTMP), Attachment F of the CEMP: ERAPs- Traffic
MCoA	Traffic and Transport - Pedestrian and Cyclist Access	E115	Safe pedestrian and cyclist access must be maintained around the St Marys construction site during construction. In circumstances where pedestrian and cyclist access is restricted or removed due to construction activities, a proximate alternate route which complies with the relevant standards, must be provided and signposted before the restriction or removal of the impacted access.	LORAC	Construction Traffic Management Plan (CTMP)
MCoA	Traffic and Transport - Road Traffic and Safety	E116	A Traffic and Transport Liaison Group(s) must be established in accordance with the Construction Traffic Management Framework to inform the development of CTMP.	Sydney Metro	LORAC will participate as part of the TTLG and provide any information or documentation it requires to meet the obligations under this approval.

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Traffic and Transport - Road Traffic and Safety	E117	Supplementary analysis and modelling as required by TfNSW and / or the Traffic and Transport Liaison Group(s) must be undertaken to demonstrate that construction and operational traffic can be managed to minimise disruption to traffic network operations, including changes to and the management of pedestrian, bicycle and public transport networks, public transport services, and pedestrian and cyclist movements. Revised traffic management measures must be incorporated into the CTMP. Permanent Road works included in the CSSI must be designed, constructed and operated with the objective of integrating with existing and proposed road and related transport networks and minimising adverse changes to the safety, efficiency and, accessibility of the network. Design and assessment of related traffic, parking, pedestrian and cycle accessibility impacts and changes shall be undertaken: (a) in consultation with, and to the reasonable requirements of the relevant Traffic and Transport Liaison Group; (b) in consideration of existing and future demand, connectivity (in relation to permanent changes), performance and safety requirements; (c) to minimise and manage local area traffic impacts; (d) to, where possible and appropriate, retain or reinstate parking in St Marys; (e) to ensure access is maintained to property and infrastructure (f) to address relevant design, engineering and safety guidelines, including Austroads, Australian Standards and TfNSW requirements. Copies of civil, structural and traffic signal design plans shall be submitted to the Relevant Road Authority for consultation during design development and before completion of construction of the CSSI.	Not Applicable	Not Applicable per Staging Report
MCoA	Traffic and Transport - Road Traffic and Safety	E118	As part of Condition E117 the Traffic and Transport Liaison Group(s) is to identify opportunities to improve the intersection performance during operation at: (a) Queen Street/Great Western Highway/Mamre Road in St Marys; (b) Glossop Street/ Forrester Road in St Marys; and (c) Glossop Street / Great Western highway in St Marys. Identified improvements must be implemented prior to the commencement of operation.	Not Applicable	LORAC not completing road network performance upgrades.

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Traffic and Transport - Road Traffic and Safety	E119	Permanent road works, including vehicular access, signalised intersection works, and works relating to pedestrians, cyclists, and public transport users must be subject to safety audits demonstrating consistency with relevant design, engineering and safety standards and guidelines. Safety audits must be prepared in consultation with the relevant Traffic and Transport Liaison Group before the completion and use of the subject infrastructure and must be made available to the Planning Secretary upon request.	Not Applicable	Not Applicable per Staging Report
MCoA	Utilities Management	E120	The CSSI must be designed and constructed with the objective of minimising impacts to, and interference with utilities infrastructure, and that such infrastructure and property is protected during construction. Utilities, services and other infrastructure potentially affected by construction must be identified before works affecting the item, to determine requirements for access to, diversion protection, and / or support. The relevant owner(s) and / or provider(s) of services must be consulted to make suitable arrangements for access to diversion, protection, and / or support of the affected infrastructure as required. The Proponent must ensure that disruption to any service is minimised and be responsible for advising local residents and businesses affected before any planned disruption of service.	LORAC	Attachment F of the CEMP: Operational Control Procedures - ERAPs -Socio-Economic Land Use
MCoA	Utilities Management - Warragamba to Prospect Water Supply Pipeline	E121	The proponent must consult with WaterNSW regarding design, construction and operational management where the proposal interacts with the Warragamba to Prospect Water Supply Pipeline, and ensure that proposed construction and operational agreements are consistent with the “Guidelines for Development Adjacent to the Upper Canal and Warragamba Pipelines” and implement all practical measures to protect the Warragamba to Prospect Water Supply Pipelines infrastructure, or as otherwise agreed to by WaterNSW.	Not Applicable	Not Applicable per Staging Report
MCoA	Waste	E122	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.	LORAC	Attachment F of the CEMP: Operational Control Procedures - ERAPs -Waste

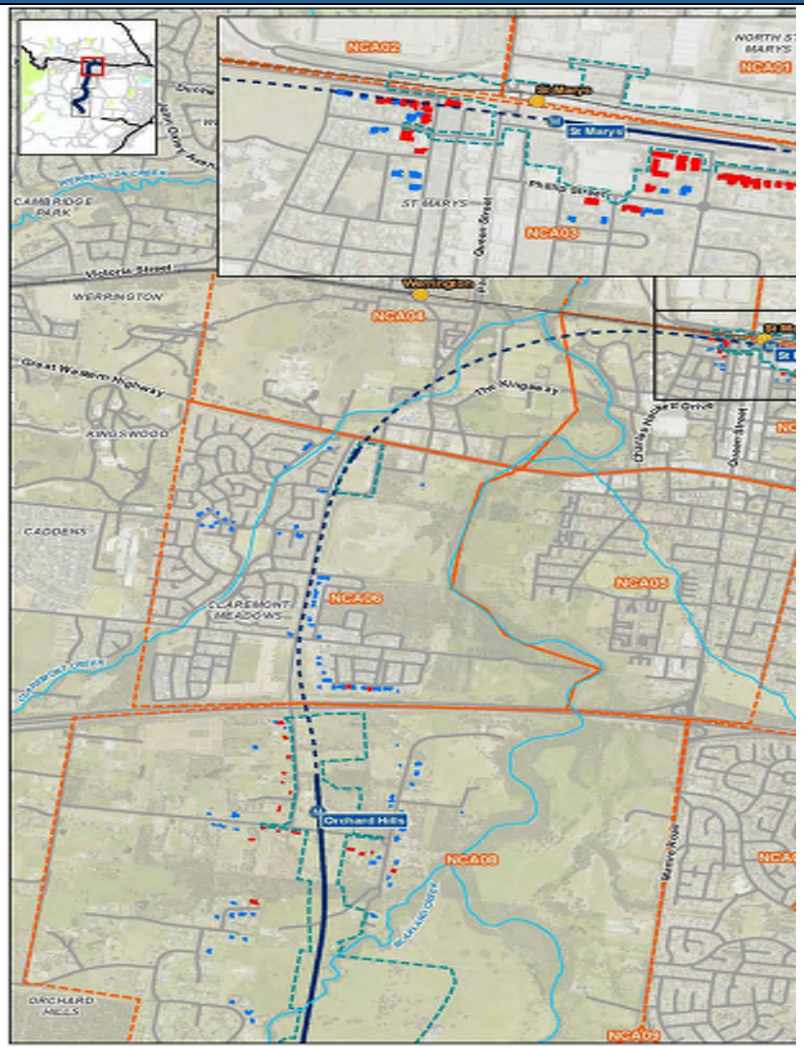
Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Waste	E123	The importation of waste and the storage, treatment, processing, reprocessing or disposal of such waste must comply with the conditions of the current EPL for the CSSI, or be done in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, as the case may be.	LORAC	Attachment F of the CEMP: Operational Control Procedures - ERAPs -Waste
MCoA	Waste	E124	Waste must only be exported to a site licensed by the EPA for the storage, treatment, processing, reprocessing or disposal of the subject waste, or in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, or to any other place that can lawfully accept such waste.	LORAC	Attachment F of the CEMP: Operational Control Procedures - ERAPs -Waste
MCoA	Waste	E125	All waste must be classified in accordance with the EPA's Waste Classification Guidelines, with appropriate records and disposal dockets retained for audit purposes.	LORAC	Attachment F of the CEMP: Operational Control Procedures - ERAPs -Waste
MCoA	Water	E126	The CSSI must be designed and constructed so as to maintain the NSW Water Quality Objectives (NSW WQO) where they are being achieved as at the date of this approval and contribute towards achievement of the NSW WQO over time where they are not being achieved as at the date of this approval, unless an EPL in force in respect of the CSSI contains different requirements in relation to the NSW WQO, in which case those requirements must be complied with.	LORAC	There are no water treatment plants or planned water discharges for these advanced enabling works. NSW WQO's do not represent point source water discharge criteria. To meet WQO's, a water treatment plant may be required. Alternatively, all captured site water will be vacuum trucked for offsite disposal. This is not considered feasible or an environmentally successful outcome. This condition requires monitoring of receiving water bodies in line with WQO's. It is not considered that the risk from FSM works warrants this condition being implemented. Water to be discharged in accordance with Sydney Metro Water Discharge Procedure.

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Water - Construction requirements	E127	The Proponent must consider the Guidelines for controlled activities on waterfront land riparian corridors (Department of Industry 2018) when carrying out work within 40 metres of a watercourse, including its bed.	Not Applicable	No works in proximity to activities on waterfront land riparian corridors. Sydney Metro have not allocated to LORAC works.
MCoA	Water - Construction requirements	E128	Before undertaking any work and during maintenance or construction activities, erosion and sediment controls must be implemented and maintained to prevent water pollution consistent with Managing Urban Stormwater: Soils and Construction Vol 1 4th ed. by Landcom, 2004 (The Blue Book).	LORAC	Attachment F of the CEMP: Operational Control Procedures - ERAPs - Soil and Water Quality
MCoA	Water - Construction requirements	E129	Unless an EPL is in force in respect to the CSSI and that licence specifies alternative criteria, discharges from construction wastewater treatment plants to surface waters must not exceed: (a) the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2018 (ANZG (2018)) default guideline values for toxicants at the 95 per cent species protection level; (b) for physical and chemical stressors, the guideline values set out in Tables 3.3.2 and 3.3.3 of the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 (ANZECC/ARMCANZ); and (c) for bioaccumulative and persistent toxicants, the ANZG (2018) guidelines values at a minimum of 99 per cent species protection level. Where the ANZG (2018) does not provide a default guideline value for a particular pollutant, the approaches set out in the ANZG (2018) for deriving guideline values, using interim guideline values and/or using other lines of evidence such as international scientific literature or water quality guidelines from other countries, must be used.	Not Applicable	Sydney Metro responsibility and have not allocated to LORAC works. Note, there are no water treatment plants or planned water discharges to stormwater for these advanced enabling works.
MCoA	Water - Construction requirements	E130	If construction stage stormwater discharges are proposed, a **Water Pollution Impact Assessment** will be required. Any such assessment must be prepared in consultation with the EPA and be consistent with the National Water Quality Guidelines, with a level of detail commensurate with the potential water pollution risk. ***Note:*** *If an EPL is required the Water Pollution Impact Assessment will be required to inform licensing consistent with section 45 of the POEO Act.*	LORAC	Not considered applicable, minimal site water discharge is anticipated from the FSM works. Water will be discharged in accordance with the TfNSW Water Discharge Procedure.

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
					Attachment F of the CEMP: Operational Control Procedures - ERAPs - Soil and Water Quality. Note, there are no water treatment plants or planned water discharges to stormwater for these advanced enabling works.
MCoA	Water - Construction requirements	E131	Drainage feature crossings (permanent and temporary watercourse crossings and stream diversions) and drainage swales and depressions must be carried out in accordance with relevant guidelines and designed by a suitably qualified and experienced person.	Not Applicable	Sydney Metro have not allocated to LORAC. No drainage feature crossings (permanent and temporary watercourse crossings and stream diversions) and drainage swales and depressions undertaken as part of the works.
MCoA	Water - Operational Requirements	E132	Unless an EPL is in force in respect to the CSSI and that licence specifies alternative criteria, discharges from operational water treatment plants to surface waters must not exceed: (a) the ANZG 2018 default guideline values for toxicants at the 95 per cent species protection level; (b) for physical and chemical stressors, the guideline values set out in Tables 3.3.2 and 3.3.3 of the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC/ARMCANZ, 2000); and (c) for bioaccumulative and persistent toxicants, the ANZG 2018 guideline values at a minimum of 99 per cent species protection level. Where the ANZG 2018 does not provide a default guideline value for a particular pollutant, the approaches set out in the ANZG 2018 for deriving guideline values, using interim guideline values and/or using other lines of evidence such as international scientific literature or water quality guidelines from other countries to be used	Not Applicable	Not Applicable per Staging Report

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Water - Groundwater	E133	Make good provisions for groundwater users must be provided in the event of a material decline in water supply levels, quality or quantity from registered existing bores associated with groundwater changes from either construction and/or ongoing operational dewatering caused by the CSSI.	Not Applicable	Not Applicable per Staging Report
MCoA	Water - Groundwater	E134	The Proponent must submit a revised Groundwater Modelling Report to the Planning Secretary for information before bulk excavation at the relevant construction location. The Groundwater Modelling Report must include: (a) for each construction site where excavation will be undertaken, cumulative (additive) impacts from nearby developments, parallel transport projects and nearby excavation associated with the CSSI; (b) predicted incidental groundwater take (dewatering) including cumulative project effects; (c) potential impacts of the CSSI or detail and demonstrate why the CSSI will not have lasting impacts to the groundwater system, ongoing groundwater incidental take and groundwater level drawdown effects; (d) actions required to minimise the risk of inflows (including in the event the CSSI are delayed or do not progress) and a strategy for accounting for any water taken beyond the life of the operation of the CSSI; (e) saltwater intrusion modelling analysis, from saline groundwater in shale, into metro station sites; and (f) a schematic of the conceptual hydrogeological model.	Not Applicable	Not considered necessary for FSM works. Sydney Metro have not allocated to LORAC works. No bulk excavation being undertaken and no impacts to groundwater anticipated as part of the FSM works.
MCoA	Written Incident and Notification and Reporting Requirements	Appendix A	1. A written incident notification addressing the requirements set out below must be submitted to the Planning Secretary via the Major Projects website within seven (7) days after the Proponent becomes aware of an incident. Notification is required to be given under this condition even if the Proponent fails to give the notification required under Condition A41 or, having given such notification, subsequently forms the view that an incident has not occurred.	LORAC to provide documentation to Sydney Metro for submission to the Planning Secretary	Section 17.4.2 of the CEMP: Incident and Complaints Reporting
			2. Written notification of an incident must:		
			(a) identify the CSSI and application number;		
			(b) provide details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident);		
			(c) identify how the incident was detected;		

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
			(d) identify when the Proponent became aware of the incident;		
			(e) identify any actual or potential non-compliance with conditions of approval;		
			(f) describe what immediate steps were taken in relation to the incident;		
			(g) identify further action(s) that will be taken in relation to the incident; and		
			(h) identify a project contact for further communication regarding the incident.		
			3. Within 30 days of the date on which the incident occurred or as otherwise agreed to by the Planning Secretary, the Proponent must provide the Planning Secretary and any relevant public authorities (as determined by the Planning Secretary) with a detailed report on the incident addressing all requirements below, and such further reports as may be requested.		
			4. The Incident Report must include:		
			(a) a summary of the incident;		
			(b) outcomes of an incident investigation, including identification of the cause of the incident;		
			(c) details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence; and		
			(d) details of any communication with other stakeholders regarding the incident.		

Type	Condition Classification	Reference	Description	Responsibility	Where addressed
MCoA	Construction Noise Mitigation – Receivers identified as exceedingly highly noise affected criteria	Appendix B		Not Applicable	As per condition MCoA E49, through knowledge of scope, will not be relevant. The highly noise affected level (75 dBA) represents the point above which there may be strong community reaction to noise. The DNVIS (Attachment S) modelled scenarios predict that during the highest noise generating works (piling and excavations), the NMLs may be exceeded by 21 – 30 dBA in a worst case OOHW scenario.

Revised Environmental Mitigation Measures

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
REMM	Transport-Construction	T1	**Construction Traffic Management Plan**s would be prepared in accordance with the Construction Traffic Management Framework	LORAC	Construction Traffic Management Plan
REMM	Transport - Construction	T2	The Construction Traffic Management Plan for St Marys would be developed to ensure existing transport interchange infrastructure continues to operate effectively within the St Marys Station precinct would be developed in consultation with the Traffic and Transport Liaison Group.	LORAC	Construction Traffic Management Plan
REMM	Transport - Construction	T3	Coordination with Western Sydney Airport and Transport for NSW would be undertaken through the Traffic and Transport Liaison Group to manage potential cumulative construction traffic impacts with M12 Motorway and Elizabeth Drive.	Not Applicable	Staging report should be not applicable
REMM	Transport-Construction	T4	**Road Safety Audits** would be carried out to address vehicular access and egress, and pedestrian, cyclist and public transport safety. Road Safety Audits would be carried out as per the guidelines outlined in Section 10 of the Construction Traffic Management Framework	LORAC	Construction Traffic Management Plan, Attachment F of the CEMP: ERAPs- Traffic Management
REMM	Transport-Construction	T5	Maintain access for pedestrians and cyclists around construction sites as per the guidelines outlined in the Construction Traffic Management Framework. Appropriate signage and line marking would be provided to guide pedestrians and cyclists past construction sites and on the surrounding network to allow access to be maintained	LORAC	Construction Traffic Management Plan
REMM	Transport-Construction	T6	Access for construction vehicles to be planned as per the guidelines outlined in the Construction Traffic Management Framework. Construction site traffic would be managed to minimise movements during peak periods. Vehicle access to and from construction sites would be managed to maintain pedestrian, cyclist and motorist safety	LORAC	Construction Traffic Management Plan

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
REMM	Transport - Construction	T7	Temporary relocation of bus stops and bus layovers at the Station Street car park in St Marys would be implemented prior to the commencement of construction works that impacts on the existing bus facilities. The temporary relocation of bus stops and the bus layover at St Marys would be carried out in consultation with the Traffic and Transport Liaison Group which includes Transport for NSW, Penrith City Council and bus operators. Way find and customer information would guide customers to temporary bus stop locations.	Not Applicable	Not Applicable as per the staging report.
REMM	Transport - Construction	T8	Transport for NSW would be consulted to discuss opportunities for their delivery of intersection upgrades at Mamre Road/M4 Western Motorway on and off ramps prior to the peak year of construction.	Not Applicable	Not Applicable as per the staging report.
REMM	Transport - Construction	T9	A construction worker car-parking strategy for St Marys would be prepared in consultation with Penrith City Council and Transport for NSW prior to the commencement of construction works. The strategy would seek to: · minimise overall demand for construction worker car-parking through initiatives such as use of other project construction worksites in combination with shuttle buses, car-pooling and encouraging the use of public transport · minimise potential use of on-street car-parking by construction workers The construction worker car-parking strategy would be implemented throughout construction.	LORAC	Construction Traffic Management Plan

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
REMM	Transport - Operation	OT1	Interchange access plans would be prepared, in consultation with the Traffic and Transport Liaison Group, to ensure adequate pedestrian and cycle facilities and other transport interchange infrastructure is provided at each station precinct, in consultation with relevant authorities including Western Parkland City Authority	Not Applicable	Not Applicable
REMM	Transport - Operation	OT2	The project would be designed such that access to properties and existing infrastructure neighbouring the proposed stations would be maintained.	LORAC	Attachment F: Traffic Management
REMM	Transport - Operation	OT3	Consultation and coordination would be undertaken with Transport for NSW through the Traffic and Transport Liaison Group to align proposed road and intersection upgrades with the year of opening, to enable safe and efficient interchanges between transport modes	Not Applicable	Not Applicable as per the staging report.
REMM	Transport - Operation	OT4	An operational car parking strategy for St Marys would be prepared in consultation with Penrith City Council and Transport for NSW prior to commencement of operation. The strategy would include consideration of measures that could be implemented to address any parking impacts as a result of the project.	Not Applicable	Not Applicable as per the staging report.
REMM	Noise and Vibration - Construction	NV1	Where acoustic sheds are installed, the internal lining and type of material used in the construction of the sheds would be considered during design development and construction planning to ensure appropriate attenuation is provided.	Not Applicable	Not Applicable as per the staging report.

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
REMM	Noise and Vibration - Construction	NV2	To avoid potential vibration impacts to the Warragamba to Prospect Water Supply Pipelines, a detailed construction vibration assessment would be undertaken in accordance with the Guidelines for Development adjacent to the Upper Canal and Warragamba Pipelines (WaterNSW, 2020) and would consider the following requirements: • confirm velocity limits for construction activities and the impact the works will have on WaterNSW assets • excavation methods would be undertaken in accordance with German Standard DIN 4150-3:2016 (2.5 mm/s PPV) • vibration monitoring would be undertaken prior to and during construction for high risk construction activities • vibration monitoring reports would be provided to WaterNSW	Not Applicable	Not Applicable as per the staging report.
REMM	Noise and Vibration - Operation	ONV1	An Operational Noise and Vibration Review would be prepared during design development to confirm the mitigation measures required to manage: • airborne and ground-borne noise impacts from rail operations • airborne noise impacts from the stabling and maintenance facility • airborne noise impacts from fixed industrial sources, including stations and services facilities. The Operational Noise and Vibration Review would consider existing and potential future land use to establish Project Noise Trigger Levels. The EPA would be consulted during preparation of the Operational Noise and Vibration Review.	Not Applicable	Not Applicable as per the staging report.

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
REMM	Biodiversity - Construction	FF1	the Biodiversity Construction Environmental Management Plan (on-airport)/ and Flora and Fauna Management Plan (off-airport) would be prepared by a suitably qualified and experienced person to minimise and manage the clearing of native vegetation and habitat by: • seeking to locate site offices, site compounds and ancillary facilities in areas where there are limited biodiversity values (e.g. cleared land) • delaying the removal of vegetation until absolutely necessary • avoiding the removal of hollow-bearing trees, where possible • using a qualified surveyor and suitably qualified ecologist to mark out exclusion zones and clearing/project boundaries prior to construction • providing contractors with regularly updated sensitive area maps (showing clearing boundaries and exclusion zones) • investigating opportunities for salvage and storage of felled native trees for potential use in landscape design. The Biodiversity Construction Environmental Management Plan (on-airport) and Flora and Fauna Management Plan (off-airport) would be implemented throughout construction.	Not Applicable	Not Applicable as per the staging report.

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
REMM	Biodiversity - Construction	FF2	A Nest Box Strategy would be prepared to minimise habitat loss to hollow-dependent fauna in accordance with the Flora and Fauna Management Plan and would include the following requirements: • hollow-bearing trees would be marked/tagged and mapped prior to their removal. The size, type, number and location of nest boxes required would be based on the results of the pre-clearing survey • about 70 per cent of nest boxes would be installed about one month prior to any vegetation removal to provide alternate habitat for hollow-dependent fauna displaced during clearing	Not Applicable	Not Applicable as per the staging report.
REMM	Biodiversity - Construction	FF3	Works on-airport would be undertaken in accordance with the nest box strategy included in the Western Sydney Airport Habitat Management subplan and in consultation with Western Sydney Airport	Not Applicable	Not Applicable as per the staging report.
REMM	Biodiversity - Construction	FF4	A targeted microbat survey (including Eastern Coastal Free-tailed Bat, Large Bent-winged bat and Eastern False Pipistrelle) of dwellings and structures proposed for demolition, removal or modification would be undertaken in accordance with 'Species credit' threatened bats and their habitats NSW survey guide for the Biodiversity Assessment Method (OEH, 2018) prior to disturbance Other human-made structures such as culverts and other under-road structures within the construction footprint would be surveyed for threatened microbats (e.g. particularly the Southern Myotis) in accordance with the Biodiversity Assessment Method (OEH, 2018). If threatened microbats are detected, a Microbat Management Plan would be developed as part of the Biodiversity Construction Management Plan and implemented by a suitably qualified bat specialist	LORAC	Not considered applicable to FSM works due to the limited scale of dwellings and buildings proposed for demolition. Sydney Metro are considered to be best placed to conduct a project wide survey as has been the carried out on other Metro projects.

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
REMM	Biodiversity - Construction	FF5	Works on-airport would be managed in accordance with the Wester Sydney Airport Microbat Management Plan and in consultation with Western Sydney Airport	Not Applicable	Not Applicable as per the staging report.
REMM	Biodiversity - Construction	FF6	During construction, shafing and artificial light impacts would be minimised in areas adjoining remnant bushland that is in intact condition.	Not Applicable	Not Applicable for FSM works
REMM	Biodiversity - Construction	FF7	Fish passage and fish habitat associated with Cosgrove Creek and Blaxland Creek would be protected in accordance with the Policy and Guidelines for Fish Habitat Conservation and Management (DPI (Fisheries NSW), 2013)	Not Applicable	Not Applicable as per the staging report
REMM	Biodiversity - Construction	FF8	A Dewatering Plan would be prepared and implemented for the dewatering of rural dams which are impacted as a result of the construction of the project. This would include measures to manage the transfer of native aquatic fauna, if required, prior to dewatering and removing of dams.	Not Applicable	Not Applicable as per the staging report.
REMM	Biodiversity - Construction	FF9	A Dewatering Plan would be prepared and implemented for the dewatering of rural dams which are impacted as a result of the construction of the project. This would include measures to manage the transfer of native aquatic fauna, if required, prior to dewatering and removing of dams. The plan would be consistent with the Western Sydney Airport Biodiversity Construction Environmental Management Plan (2019) (on-airport).	Not Applicable	Not Applicable as per the staging report

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
REMM	Biodiversity - Construction	FF10	The impact of Key Threatening Processes as a result of the project would be managed and minimised where possible through: • implementation of weed management measures to prevent the introduction and spread of weeds including exotic vines and scramblers, Olea europaea (African Olive), Chrysanthemoides monilifera, Lantana camara, and exotic perennial grasses • implementation of pathogen management measures to prevent the introduction and spread of pathogens including amphibian chytrid, Phytophthora implementa, and Exotic Rust Fungi of the order Pucciniales • implementation of management measures to protect the riparian zone to ensure fish passage and protect fish habitat in accordance with the Policy and Guidelines for Fish Habitat Conservation and Management (DPI (Fisheries NSW,) 2013), and minimisation of vegetation removal within the riparian zone where possible	Not Applicable	Not Applicable as per the staging report.
REMM	Biodiversity - Construction	FF11	A native vegetation seed collection and salvage program would be developed prior to the commencement of construction and implemented during construction. The seed collection and salvage program would aim to target native species prioritising the Cumberland Plain Woodland species to be utilised in landscaping for the project where possible. Opportunities for use of collected and salvaged seed outside of the project would also be investigated.	Not Applicable	Not Applicable as per the staging report.

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
REMM	Biodiversity - Operation	OFF1	Wildlife connectivity would be maintained (where possible) through the installation of viaduct/bridge structures designed in accordance with the following: • Height and width of the area under a bridge to be maximised for all species, noting a minimum height of approximately 3 metres of dry passage will provide connectivity for most terrestrial species • Bridges wide enough to encompass water flow, stream bank and riparian vegetation, preferably on both sides of the water course • For small and medium sized mammals, provide fauna furniture as shelter (e.g. vegetation, logs, rocks, leaf-litter, refuge pipes, escape poles, roofing tiles, and roofing iron) • Height and carriageway separation designed to allow sufficient light and moisture to enhance growth of vegetation under the structure • If used for multiple purposes (e.g. pathways or access roads) aim to provide the 3 metre of natural passage for fauna • Relocation or adjustment of the stream bed avoided where possible • The structure to tie in with the natural hydrology of the surrounding habitat such that the width, depth and gradient of the watercourse are maintained in the structure • Consistent with the Policy and Guidelines for Fish Friendly Waterway Crossings (DPI (Fisheries NSW), 2013)	Not Applicable	Not Applicable as per the staging report.

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
REMM	Biodiversity - Operation	OFF2	The design of viaduct structures over the wildlife/riparian corridors at Blaxland Creek, the unnamed tributory south of Patons Lande and Cosgroves creek would seek to: • maximise the span over the wildlife/riparian corridor • minimise native vegetation removal within the wildlife/riparian corridors • maintain opportunities for fauna movement along the wildlife/riparian corridors and • provide opportunities to enhance fauna movement where possible	Not Applicable	Not Applicable as per the staging report.
REMM	Non-Aboriginal heritage - construction	NAH1	Potential moveable heritage items would be identified and assessed, and a **significant fabric salvage schedule** would be prepared by an appropriately qualified and experienced heritage specialist for St Marys Railway Station, Bringelly RAAF Base, McGarvie-Smith Farm~~,~~ and McMasters Farm. Significant fabric would only be salvaged if it can be salvaged in such a way that it can be reused and is likely to be able to be reused	Sydney Metro	Attachment R of the CEMP: Heritage Management Procedure
REMM	Non-Aboriginal heritage - construction	NAH2	Heritage advice would be sought to develop solutions to manage potential ground movement impacts to the St Marys Goods Shed	LORAC	Attachment R of the CEMP: Heritage Management Procedure
REMM	Non-Aboriginal heritage - construction	NAH3	Archival recording of heritage items which would be impacted or that would have their setting altered, would be carried out in accordance with the NSW Heritage Office's *Photographic Recording of Heritage Items Using Film or Digital Capture* (2006). The following items would be archivally recorded: · St Marys Railway Station · Luddenham Road Alignment	Sydney Metro	Completed. St Marys Railway Station, St Marys: Archival Recording Report, January 2022

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
			· McMaster Farm · McGarvie-Smith Farm · Kelvin Park Group (the State Heritage listed curtilage) · Bringelly RAAF Base		
REMM	Non-Aboriginal heritage - construction	NAH5	Archaeological investigations would be undertaken in accordance with recommendations in the non-Aboriginal Archaeological Research Design	LORAC	Noted, any archaeological investigations would be undertaken in accordance with the recommendations in the non-Aboriginal Archaeological Research Design
REMM	Non-Aboriginal heritage - construction	NAH6	The following heritage items would be monitored for potential vibration impacts during construction: · St Marys Railway Station Group · Queen Street Post-War Commercial Building · St Marys Munitions Workers Housing · McGarvie Smith Farm · McMaster Farm	LORAC	Attachment R of the CEMP: Heritage Management Procedure
REMM	Non-Aboriginal heritage - construction	NAH7	If required, the **St Marys Station jib crane** would be temporarily relocated prior to construction commencing in the vicinity of this item, safely stored and appropriately maintained and reinstated. If relocation is required, a detailed methodology for the removal and reinstatement of the jib crane would be prepared in consultation with an appropriately qualified heritage advisor	LORAC	The work will not impact St Marys Station Jib crane and temporary relocation of Jib crane is not required.
REMM	Non-Aboriginal heritage - construction	NAH8	A dilapidation survey of the Warragamba to Prospect Water Supply Pipelines would be undertaken prior to construction commencing in the vicinity of this item.	Not Applicable	Not Applicable as per the staging report.

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
REMM	Non-Aboriginal heritage - construction	NAH9	If suspected human remains or unexpected items of potential heritage significance are discovered within the on-airport area, all activity would cease and the unexpected/chance finds requirements specified in the Western Sydney Airport European and Other Heritage Construction Environmental Management Plan would be followed	LORAC	Attachment R of the CEMP: Heritage Management Procedure
REMM	Non-Aboriginal heritage- operation	ONAH1	Design development for the project would endeavour to minimise adverse impacts to heritage buildings, elements, fabric, and heritage significant settings and view lines that contribute to the overall heritage significance of heritage items	LORAC	Attachment R of the CEMP: Heritage Management Procedure
REMM	Non-Aboriginal heritage- operation	ONAH2	The architectural design for the project would take account local heritage context and be sympathetic to local heritage character. This would include using sympathetic building materials, colours and finishes Design should aim to minimise visual impacts by ensuring that significant elements are not obstructed or overshadowed Design should adhere to the Principal – Western Sydney Airport Design Guidelines The Design Review Panel and Heritage Working Group would be consulted in regard to the design, form and material of new built structures that may impact heritage items	LORAC	Attachment R of the CEMP: Heritage Management Procedure
REMM	Non-Aboriginal heritage- operation	ONAH3	Consultation with the Heritage Council and with relevant stakeholders would occur for the design of works that have the potential to impact State significant items including St Marys Railway Station	LORAC	Attachment R of the CEMP: Heritage Management Procedure
REMM	Non-Aboriginal heritage- operation	ONAH4	A Heritage interpretation strategy would be prepared for the project identifying key stories and interpretive opportunities related to non-Aboriginal heritage. The strategy would address historic and contemporary heritage and community values and would identify innovative and engaging opportunities for interpretation.	Not Applicable	Not Applicable as per the staging report.

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
REMM	Non-Aboriginal heritage-operation	ONAH5	A conservation management plan would be prepared for St Marys Railway Station, in accordance with NSW Heritage Council guidelines the Plan would address any changes to the station, including updated assessment of significance of elements and recommendations on curtilage changes. It would also provide site specific exemptions and management policies	Sydney Metro	Sydney Metro responsibility
REMM	Non-Aboriginal heritage-operation	ONAH6	**Heritage inventory registers** for heritage items modified by the project would be updated to document their change in condition following the completion of construction works for the project	LORAC	Attachment R of the CEMP: Heritage Management Procedure Will be updated at the completion of works
REMM	Non-Aboriginal heritage-operation	ONAH7	An appropriately qualified and suitably experienced heritage architect would be engaged to provide input into design development at St Marys Station	LORAC	Attachment R of the CEMP: Heritage Management Procedure
REMM	Aboriginal heritage - Construction	AH1	Aboriginal stakeholder consultation would continue to be carried out in accordance with the Aboriginal Cultural Heritage Consultation requirements for Proponents 2010 (NSW Office of Environment and Heritage, 2010). Registered Aboriginal parties would be provided with opportunities to participate in survey and testing in unverified areas of Aboriginal archaeological sensitivity, archaeological salvage works and unexpected find assessments (if required	Sydney Metro	Noted, Aboriginal stakeholder consultation would be undertaken if unexpected Aboriginal finds are encountered.

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
REMM	Aboriginal heritage - Construction	AH2	Areas of unverified Aboriginal archaeological sensitivity would be subject to archaeological survey and test excavation pre-construction in accordance with the Aboriginal Cultural Management Plan	Not Applicable	The FSM works are not located in an area classified as being of Aboriginal archaeological sensitivity as defined in Chapter 16, Aboriginal Heritage of the EIS. Therefore, this requirement is not considered to be applicable to the FSM works.
REMM	Aboriginal heritage - Construction	AH5	All Aboriginal objects recovered from the construction footprint as a result of test excavation and salvage works would be appropriately secured and under the care of the archaeological consultant while options for their long-term management, as determined through consultation with Registered Aboriginal Parties, are being investigated.	Sydney Metro	Sydney Metro – Western Sydney Airport Aboriginal Cultural Heritage Management Plan August 2021
REMM	Aboriginal heritage - Construction	AH6	Aboriginal Heritage Information Management System site cards would be produced for all newly identified sites other than those identified on Commonwealth land. These should be submitted to the Aboriginal Heritage Information Management System Registrar as soon as practicable within one month of being identified. Newly identified sites within the boundaries of Defence Establishment Orchard Hills (Commonwealth land) would be reported to the Department of Defence to be managed in accordance with the relevant provisions of the Defence Establishment Orchard Hills Heritage Management Plan	Sydney Metro	Sydney Metro – Western Sydney Airport Aboriginal Cultural Heritage Management Plan August 2021
REMM	Aboriginal heritage - Construction	AH7	Aboriginal Site Impact Recording forms for sites subject to archaeological salvage would be submitted to the Aboriginal Heritage Information Management System register within one month of the completion of salvage works within their bounds.	Not Applicable	Not Applicable.

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
REMM	Aboriginal heritage - construction	AH8	If any suspected human remains or unexpected Aboriginal cultural heritage objects are discovered within the on-airport area, all activity would cease and the unexpected finds protocol and discovery of human remains protocol specified in the Western Sydney Airport Aboriginal Cultural Heritage Construction Environmental Management Plan would be followed	Not Applicable	Attachment R of the CEMP: Heritage Management Procedure
REMM	Aboriginal heritage - construction	AH9	Works within the bounds of existing Aboriginal Heritage Impact Permit areas should be undertaken in accordance with the conditions of those permits and with permission from the relevant Aboriginal Heritage Impact Permit holder. Works undertaken in accordance with the Defence Establishment Orchard Hills Heritage Management Plan	Not Applicable	Not Applicable as per the staging report 7.
REMM	Aboriginal heritage - Construction	AH10	Impacted Aboriginal Sites would be managed in accordance with the Aboriginal Cultural Heritage Management Plan	Not Applicable	Not Applicable as per the allocations to LORAC
REMM	Aboriginal heritage - Construction	AH11	Aboriginal sites located outside of the construction footprint, but within 100m of it, would be clearly demarcated or sign posted to avoid potential impact	Not Applicable	Not Applicable. Not considered appropriate mitigation for FSM scope.

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
REMM	Aboriginal heritage - Construction	AH12	Reporting for all archaeological salvage works completed for the project would include: • a minimum of one interim Aboriginal archaeological salvage report providing a summary of salvage works completed up to the reporting date, including the results of any post-excavation analyses completed. Interim results may be used to inform consistency assessments and Aboriginal heritage interpretation initiatives • an Archaeological Salvage Report detailing the results of the archaeological salvage program (including the results of any post-excavation analyses) would be completed within one year of the completion of the fieldwork component of the program. The Archaeological Salvage Report would be consistent with the best practice guidelines suggested by the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DECCW 2010b) and the Aboriginal Cultural Heritage Standards & Guidelines Kit (NSW NPWS 1997)	Sydney Metro	Sydney Metro responsibility with input to be provided by LORAC if required.
REMM	Aboriginal heritage - Construction	OAH1	A heritage interpretation strategy would be prepared for the project in consultation with Aboriginal knowledge holders. Aboriginal heritage interpretation would be developed with reference to the finding of the Aboriginal Cultural Heritage Assessment Report and Archaeological Assessment Report, to promote understanding and awareness of cultural heritage values	Not Applicable	Not Applicable as per the allocations to LORAC. Not considered reasonable or feasible for the limited FSM scope.
REMM	Flooding, hydrology and water quality-construction	HYD1	Construction planning would consider flood related mitigation, including: · staging construction works to reduce the duration of works within the floodplain	LORAC	Attachment F: Soil and Water Management ERAP

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
			· daily and continuous monitoring of weather forecasts and storm events, rainfall levels and water levels in key watercourses to identify potential flooding events and related flood emergency response · consultation with NSW State Emergency Services and relevant local councils to ensure consistent approaches to the management of flood events (off-airport only) · provide flood-proofing to excavations at risk of flooding during construction, where reasonable and feasible, such as raised entry into shafts and/or pump-out facilities to minimise ingress of floodwaters into shafts and the dive structure · review of site layout and staging of construction works to avoid or minimise obstruction of overland flow paths and limit the extent of flow diversion required		
REMM	Flooding, hydrology and water quality-construction	HYD2	Minimise works in the main creek channels (at Blaxland Creek, unnamed watercourse south of Patons Lane and Cosgroves Creek) where possible and avoid works in the channel during rainfall events.	Not Applicable	Not Applicable as per the staging report.
REMM	Flooding, hydrology and water quality-construction	HYD3	Surface water flows during construction would be managed to ensure that there is no increase in flows into or through the Warragamba to Prospect Water Supply Pipelines Corridor.	Not Applicable	Not Applicable as per the staging report.

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
REMM	Flooding, hydrology and water quality-construction	WQ1	A surface water quality monitoring program would be implemented to monitor water quality during construction. The program would be developed in consultation with (as relevant) Western Sydney Airport, NSW Environment Protection Authority, relevant sections of Department of Planning, Industry and Environment and relevant local councils. The program would consider monitoring being undertaken as part of other infrastructure projects such as the M12 Motorway and Western Sydney International. On air-port, the water quality monitoring would ensure that works meet the requirements under Schedule 2 of the Airports (Environment Protection) Regulations 1997. The program would monitor all construction discharge locations.	Not Applicable	Not Applicable as per the staging report.
REMM	Flooding, hydrology and water quality-construction	WQ2	Water treatment plants would be designed to ensure that wastewater is treated to a level that is compliant with the ANZECC/ARMCANZ (2000), ANZG (2018) and draft ANZG (2020) default guidelines for 95 er cent species protection and 99 per cent species protection level for toxicants that bioaccumulate unless other discharge criteria are agreed with relevant authorities.	Not Applicable	Not Applicable as per the staging report.
REMM	Flooding, hydrology and water quality-construction	WQ3	The design and construction of the project would take into account the forer NSW office of Water's Guidelines for controlled activities on waterfront land.	Not Applicable	Not Applicable as per the staging report.

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
REMM	Flooding, hydrology and Water Quality - Operation	OHYD1	The flood model for the project would be updated with regard to flood modelling undertaken for the South Creek Sector Review (anticipated to be released in 2021). the updated flood modelling would be used to inform design development including but not limited to addressing potential residual flood impacts identified at the following locations: • the viaduct and earthworks in the vicinity of Blaxland Creek so as to minimise the extent of the project within the floodplain • the earthworks arrangement at the stabling and maintenance facility in the area affected by the Probable Maximum Flood The flood model for the project would be prepared in consultation with relevant stakeholders	Not Applicable	Not Applicable as per the staging report.
REMM	Flooding, hydrology and Water Quality - Operation	OHYD2	Develop localised stormwater management plans at St Marys Station and Aerotropolis Core Station to ensure these stations are protected from localised flooding.	Not Applicable	Not Applicable as per the staging report.
REMM	Flooding, hydrology and Water Quality - Operation	OHYD3	Flood compatible design would need to be demonstrated for the permanent spoil placement areas to ensure compliance with applicable land use criteria	Not Applicable	Not Applicable as per the staging report.
REMM	Flooding, hydrology and Water Quality - Operation	OHYD4	The design of the viaduct crossing over the Warragamba to Prospect Water Supply Pipelines would not result in an increase of overland flows into or through the pipelines corridor for each storm event up to and including the 1% AEP event.	Not Applicable	Not Applicable as per the staging report.
REMM	Flooding, hydrology and Water Quality - Operation	OWQ1	Design better slope gradients and surface treatments to minimise erosion risk	Not Applicable	Not Applicable as per the staging report.

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
REMM	Flooding, hydrology and Water Quality - Operation	OWQ2	Drainage and water treatment design to be undertaken in accordance with Water Sensitive Urban Design requirements specified in local council, Transport for NSW and on-airport standards	LORAC	Attachment F of the CEMP: Operational Control Procedures - ERAPs - Soil and Water Quality and design process.
REMM	Flooding, hydrology and Water Quality - Operation	OWQ3	Suitably designed scour and erosion controls should be included at drainage and sedimentation basin outlet discharge points	Not Applicable	Not Applicable as per the staging report.
REMM	Flooding, hydrology and Water Quality - Operation	OWQ4	Detailed design of viaducts across waterways would aim to minimise infrastructure within the bed and banks of existing waterways and minimise changes to flood behaviour across the floodplain	Not Applicable	Not Applicable as per the staging report.
REMM	Flooding, hydrology and Water Quality - Operation	OWQ5	Where feasible, on-site detention of stormwater would be introduced where stormwater runoff rates are increased. Where there is insufficient space for the provision of on-site detention, the upgrade of downstream infrastructure would be implemented where feasible and reasonable	LORAC	Attachment F of the CEMP: Operational Control Procedures - ERAPs - Soil and Water Quality
REMM	Flooding, hydrology and water quality-operation	OWQ6	At all locations where stormwater is discharged, water quality measures such as gross pollutant traps, bio-retention swales and Water Sensitive Urban Design features would be investigated and implemented where feasible and reasonable	LORAC	Attachment F of the CEMP: Operational Control Procedures - ERAPs - Soil and Water Quality
REMM	Flooding, hydrology and water quality-operation	OWQ7	Water treatment plants would be designed to ensure that wastewater is treated to a level that is compliant with the ANZECC/ ARMCANZ (2000), ANZG (2018) and draft ANZG (2020) default guidelines for 95 per cent species protection and 99 per cent species protection level for toxicants that bioaccumulate unless other discharge criteria are agreed with relevant authorities.	Not Applicable	Not Applicable as per the staging report.

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
REMM	Groundwater and geology-construction	GW1	Further assessment would be undertaken during design development, and prior to construction commencing, to ensure that damage to buildings and structures at risk of ground movement impacts around St Marys, Claremont Meadows, Orchard Hills and Bringelly are avoided or managed. Where building damage risk is rated as slight, moderate or high (as per Rankin 1988), a structural assessment of the affected buildings/structures would be carried out and specific measures implemented to address the risk of damage	LORAC	Attachment R of the CEMP: Heritage Management Procedure
REMM	Groundwater and geology-construction	GW2	Further assessment of road and rail infrastructure and utility assets (including the Warragamba to Prospect Water Supply Pipelines) considered to be at risk from ground movement would be undertaken during design development. Consultation would be undertaken with the infrastructure and asset owners in each case to determine appropriate ground movement criteria for the assessment and, if required, to agree management measures to manage potential impacts	LORAC	Not Applicable – if applicable, then not relevant Environmental Primary Standards, CEMP, Heritage Management Procedure, SERs. Safety in Design workshops interfacing groups (Sydney Trains, TfNSW, Sydney Metro)
REMM	Groundwater and geology-construction	GW3	Further assessment of potential ground movement impacts on the Goods Shed building at St Marys Station, including a building condition survey, would be carried out during design development and prior to the commencement of construction. The assessment would be carried out in consultation with a suitably qualified heritage architect and would identify acceptable ground movement criteria and, if required, feasible measures to reduce or mitigate the effects of ground movement on this structure	LORAC	Attachment R of the CEMP: Heritage Management Procedure

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
			Ground movement in the vicinity of the Goods Shed and the condition of the Goods Shed building would be monitored during construction A dilapidation survey of the Goods Shed would be carried out prior to work commencing in the vicinity of the building. At the completion of construction, should there be any damage to the building which is determined to be as a result of the project construction works, the building would be repaired in consultation with a suitably qualified heritage architect		
REMM	Groundwater and geology-construction	GW4	Consultation with Western Sydney Airport will be on-going in respect to the construction programs for both projects to understand the potential for ground movement impacts to proposed buildings and structures	Not Applicable	Not Applicable as per the staging report.

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
REMM	Groundwater and geology-construction	GW5	Detailed hydrogeological and geotechnical models for the project would be developed and progressively updated during design and construction These models would: • be informed by the results of groundwater monitoring undertaken before and during construction • identify predicted changes to groundwater levels, including at nearby water supply works and at groundwater dependent ecosystems or other sensitive groundwater receptors Where changes to groundwater levels are predicted at nearby water supply works, groundwater dependent ecosystems or other sensitive groundwater receivers, an appropriate groundwater monitoring program would be developed and implemented Where changes to groundwater level are close to the ground surface, dryland salinity monitoring would be implemented to allow for management of any identified impacts The groundwater monitoring program would aim to confirm no adverse impacts on the receiver during construction or to effectively manage any impacts with the implementation of appropriate mitigation measures. Monitoring at any specific location would be subject to the status of the water supply work and agreement with the landowner	Not Applicable	Not Applicable as per the staging report.

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
REMM	Groundwater and geology-construction	GW6	A Groundwater Management Plan would be prepared and implemented. The plan must include the following trigger-action response measures in relation to groundwater levels in areas identified as subject to potential drawdown (at groundwater dependent ecosystems or other sensitive receivers) but outside the construction footprint and Western Sydney International Stage 1 Construction Impact Zone: a) target criteria, set with reference to relevant standards and site specific parameters; b) trigger values and corresponding corrective actions to prevent recurring or long-term exceedance of the target criteria described in (a); and c) corrective actions to compensate for any recurring or long-term exceedance of the target criteria described in (a) Response measures may include: • targeted ground improvement and grouting to limit groundwater inflows into station excavations, tunnels and cross-passage to reduce groundwater drawdown • design of undrained temporary retention systems to minimise groundwater inflow into station excavations and reduce groundwater drawdown • supplementing groundwater supply at affected groundwater dependent ecosystems or watercourses • make good provisions for groundwater supply wells impacted by changes in groundwater level or quality	Not Applicable	Not Applicable as per the Staging Report

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
REMM	Groundwater and geology-operation	SC1	The Soil and Water Management Plan would incorporate the following measures: • for low risk areas of environmental concern, worker health and safety measures, waste management and tracking for contamination would be outlined. • for medium and high risk areas of environmental concern, detailed site investigations and review of further available information would be undertaken prior to the start of construction	LORAC	Not Applicable. Staging report states that specific environmental aspects to be included in the CEMP or CEMP procedure - not separate plan.
REMM	Groundwater and geology-operation	SC2	Based on outcomes of SC1: · if a medium or high risk area of environmental concern is reassessed as low risk, the site would be managed in accordance with the Soil and Water Management Plan. This would typically occur where there is minor, isolated contamination that can be readily remediated through standard construction practices such as excavation and off-site disposal · for areas of environmental concern that remain or change to medium risk, visual inspections and monitoring would be performed during earthworks. If suspected contamination is encountered, the materials would be subject to sampling and analysis to assess management requirements in accordance with statutory guidelines made or endorsed by the NSW Environment Protection Authority statutory guidelines · for areas of environmental concern that remain or change to high risk, a Sampling, Analysis and Quality Plan would be prepared for Detailed Site Investigations or data gap investigations.	LORAC	Not considered applicable to FSM due to the absence of works within areas designated as medium or high risk areas of environmental concern. Section 12.8.3 of the CEMP: Contamination and Hazardous materials (within soil)

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
			The results from the site investigations would be assessed against criteria contained within the National Environment Protection (Assessment of Site Contamination) Measure (2013) and other applicable NSW statutory guidelines to assess whether remediation is required. Remediation works would be performed in accordance with the hierarchy of preferred strategies in the Guidelines for the NSW Site Auditor Scheme (NSW Environment Protection Authority, 2017) and other guidelines made or endorsed by the NSW Environment Protection Authority. Where practical, remediation works would be integrated with excavation and development works performed during construction		
REMM	Groundwater and geology-operation	SC3	Where information gathered from investigations for medium and high risk areas of environmental concern (as per mitigation measure SC1) is insufficient to determine the risk of contamination, a detailed site investigation would be carried out in accordance with the National Environment Protection Measure (2013) and other guidelines made or endorsed by the NSW Environment Protection Authority	LORAC	Not considered applicable to FSM due to the absence of works within areas designated as medium or high risk areas of environmental concern. Section 12.8.3 of the CEMP: Contamination and Hazardous materials (within soil)
			Where data from the additional data review (mitigation measure SC1) or the detailed site investigation (mitigation measure SC2) confirms that contamination would require remediation, a Remediation Action Plan would be developed for the area of the construction footprint.		

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
			If a Remediation Action Plan is required, it would be developed in accordance with NSW Environment Protection Authority statutory guidelines and a Site Auditor would be engaged. Remediation methodologies would be undertaken in accordance with Australian Standards and other relevant government guidelines and codes of practice Remediation would be performed as an integrated component of construction and to a standard commensurate with the proposed end use of the land		
REMM	Groundwater and geology-operation	SC4	If a duty to report to the NSW Environment Protection Authority under Section 60 of the *Contaminated Lands Management Act 1997* is triggered, or where a medium to high risk of contamination is identified, an accredited Site Auditor would review and approve the Remediation Action Plan (including issue of interim audit advice) and would develop a Site Audit Statement and Site Audit Report upon completion of remediation	LORAC	Section 12.8.3 of the CEMP: Contamination and Hazardous materials (within soil)
REMM	Groundwater and geology-operation	SC5	An **unexpected finds procedure** would be developed and implemented as part of the project Soil and Water Management Plan, outlining a set of potential contamination issues which could be encountered, and detailing the management actions to be implemented. The unexpected finds procedure would include a process for chemical and asbestos contamination and would generally include: · cessation of works within the affected area until inspection of the suspected contamination by a qualified contaminated lands consultant (verification by a certified contaminated land practitioner)	LORAC	Section 12.8.10 of the CEMP: Unexpected Finds Procedure

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
			· collection of soil samples for chemical or asbestos analysis, where required, based on observations		
			· assessment of results against applicable land use or waste classification criteria in accordance with statutory guidelines made or endorsed by the NSW Environment Protection Authority statutory guidelines		
			· management of the contamination in accordance with statutory guidelines made or endorsed by the NSW Environment Protection Authority statutory guidelines		
			· the unexpected finds procedure for on-airport construction would be consistent with the Western Sydney Airport unexpected finds procedure detailed in the Soil and Water Construction Environmental Management Plan (Western Sydney Airport, 2019)		
REMM	Groundwater and geology-operation	SC6	Post construction, an inspection of construction, stockpiling and laydown sites and soil validation of redundant sedimentation/water quality basins would be undertaken to assess if further investigation and remediation is required.	LORAC	Section 12.8.10.3 of the CEMP: Unexpected Finds Procedure- Contamination
			Investigation and remediation (if required) would be undertaken in accordance with the Soil and Water Management Plan (off-airport) and a project specific Remediation Action Plan that would be prepared in a manner consistent with the Western Sydney Airport Remediation Action Plan (2019) (on-airport).		
			All inspections, investigations and remediation would be undertaken by a qualified contaminated lands consultant with reports prepared or reviewed by a Certified Contaminated Land Consultant		

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
REMM	Groundwater and geology-operation	SC7	Prior to ground disturbance in areas of potential acid sulfate soil occurrence, testing would be carried out to determine the actual presence of acid sulfate soils. If acid sulfate soils are encountered, they would be managed in accordance with the Acid Sulfate Soil Manual (Acid Sulfate Soil Management Advisory Committee, 1998)	LORAC	Attachment F of the CEMP: Operational Control Procedures - ERAPs - Hazardous and contaminated Materials
REMM	Groundwater and geology-operation	SC8	Prior to ground disturbance in high probability salinity areas testing would be carried out to determine the presence of saline soils. If salinity is encountered, excavated soils would not be reused or would be managed in accordance with Book 4 Dryland Salinity: Productive Use of Saline Land and Water (NSW DECC 2008). Erosion controls would be implemented in accordance with the Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom, 2004)	LORAC	Attachment F of the CEMP: Operational Control Procedures - ERAPs - Hazardous and contaminated Materials
REMM	Groundwater and geology-operation	SC9	Targeted groundwater investigations would be undertaken prior to construction to identify high salinity areas at risk from rising groundwater. Where high saline areas (>1000 µS/cm) are identified, measures such as planting, regenerating and maintaining native vegetation and good ground cover in recharge, transmission and discharge zones would be implemented where possible	LORAC	Attachment F of the CEMP: Operational Control Procedures - ERAPs - Hazardous and contaminated Materials
REMM	Groundwater and geology-operation	SC10	Where the construction footprint is not used as part of the operational footprint (residual land), an assessment of the suitability of the site for the proposed land use would be undertaken in accordance with statutory guidelines made or endorsed by the NSW Environment Protection Authority	LORAC	The construction footprint has been assessed as part of the Sydney Metro WSA EIS. Although allocated to the Contractor, this is beyond LORAC control, considered to be Sydney Metro responsibility

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
REMM	Groundwater and geology- operation	SC11	For works within Western Sydney International: • A review of further available information from Western Sydney Airport would be undertaken prior to the commencement of construction, which may include review of investigations, the Western Sydney Airport Remediation Action Plan and validation reports • Any remediation works (for contamination encountered by The Principal that has not been remediated by Western Sydney Airport) would be undertaken in accordance with the Principal Remediation Action Plan, developed in a manner consistent with the Western Sydney Airport Remediation Action Plan (Department of Infrastructure and Regional Development, 2019)	Not Applicable	Not Applicable as per the staging report.
REMM	Sustainability, climate change and greenhouse gas- construction	SUS1	A Sustainability Plan would be developed and implemented during construction of the project. The Sustainability Plan would identify the sustainability, climate change and greenhouse gas objectives, initiatives and targets which would be implemented during further design development and construction of the project. The Sustainability Plan would be developed to be consistent with the Western Sydney Airport Sustainability Plan for on-airport works. The Sustainability Plan would also inform the preparation of Sustainability Management Plans for each off-airport construction work package.	LORAC	LORAC SMEW - Sustainability Management Plan. The Project is targeting a TfNSW SDG Gold Rating as per section 6.1.2 of the CEMP.
REMM	Sustainability, climate change and greenhouse gas- construction	SUS2	Protect sensitive construction equipment from the effects of extreme weather, such as direct exposure to the sun on extreme heat days and flooding	LORAC	Attachment K of the CEMP: Emergency preparedness and response
REMM	Sustainability, climate change and greenhouse gas- construction	SUS3	Address climate change impacts in emergency management procedures for the construction of the project, such as consideration of impacts of flash flooding on evacuation procedures	LORAC	Attachment K of the CEMP: Emergency preparedness and response

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
REMM	Sustainability, climate change and greenhouse gas- construction	GHG1	Carry out an iterative process of greenhouse gas assessments and design refinement prior to construction to identify opportunities to minimise greenhouse gas emissions Performance would be measured in terms of a percentage reduction in greenhouse gas emissions, and assessed against a business as usual project benchmark verified by Infrastructure Sustainability Council of Australia or equivalent independent industry body	LORAC	Not applicable as per the allocations. Does not seem commensurate with scope of work and associated risk.
REMM	Sustainability, climate change and greenhouse gas- operation	OSUS1	A Sustainability Plan would be developed and implemented during operation of the project. The Sustainability Plan would identify the sustainability, climate change and greenhouse gas objectives, initiatives and targets which would be implemented during further design development and operation of the project. The Sustainability Plan would be developed to be consistent with the Western Sydney Airport Sustainability Plan for on-airport works.	Not Applicable	Not Applicable as per the allocations. This is for operations, outside of FSM scope
REMM	Sustainability, climate change and greenhouse gas- operation	OSUS2	Climate change risk treatments would be confirmed and incorporated during further design development	Not Applicable	Not Applicable. This is for operations, outside of FSM scope.
REMM	Sustainability, climate change and greenhouse gas- operation	OGHG1	Carryout an iterative process for greenhouse gas assessments and design refinement during detailed design to identify opportunities to minimise greenhouse gas emissions. Performance would be measured in terms of a percentage reduction in greenhouse gas emissions, and assessed against a business as usual project brenchmark verified by Infrastructure Sustainability Council of Australia or equivalent independent industry body.	Not Applicable	Not Applicable. This is for operations, outside of FSM scope
REMM	Resource management- construction	WR1	Construction waste would be minimised by accurately calculating materials brought to the site and limiting materials packaging	LORAC	Attachment F of the CEMP: Operational Control Procedures - ERAPs -Waste

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
REMM	Resource management-construction	WR2	Waste streams would be segregated to avoid cross-contamination of materials and maximise reuse and recycling opportunities	LORAC	Attachment F of the CEMP: Operational Control Procedures - ERAPs -Waste
REMM	Resource management-construction	WR3	A materials tracking system would be implemented for material transferred between construction sites	LORAC	Attachment F of the CEMP: Operational Control Procedures - ERAPs -Waste
REMM	Resource Management - Operation	OWR1	Generation of waste would be minimised and reused where possible in line with the waste hierarchy and the sustainability objectives outlined in a Sustainability Plan. In addition: • bins would be provided for general waste and recyclables and collection would be undertaken by an authorised contractor for off-site recycling or disposal at a licenced waste facility • waste from maintenance activities would be stored in designated areas for collection by an authorised contractor for off-site disposal • containers holding grease and lubricants for maintenance would be washed prior to disposal or stored separately for disposal as hazardous waste • waste oil and oil filters would be stored in recycling bins and collected by an authorised contractor, and recycled off-site, where feasible wastewater, sewage and grey water would be disposed to stormwater, sewer, recycled wastewater system or transported to an appropriately licenced liquid waste treatment facility (if water quality does not meet requirements for discharge to the stormwater/sewer system)	Not Applicable	Not Applicable as per the staging report.

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
REMM	Land use and property- Construction	LU1	Areas of land leased for the purposes of construction would be reinstated at the end of the lease to at least equivalent standard in consultation with the landowner	LORAC	Community Liaison Management Plan Sydney Metro OCCS
REMM	Land use and property- Construction	LU2	Where required property adjustments have the potential to impact farm infrastructure (such as fencing or dams) or local access to properties. Consultation with affected property owners would be carried out prior to these works occurring, in order to determine reasonable, feasible and acceptable solutions.	Not Applicable	Not Applicable as per the staging report.
REMM	Land use and property- Construction	LU3	Where a property would be potentially fragmented by the construction corridor, access to properties would be maintained, in consultation with the landowner(s)	Not Applicable	Not Applicable as per the staging report.
REMM	Land use and property- Operation	OLU1	Where a property would be potentially fragmented by the rail corridor, access to properties would be provided. The location of access to be provided would be agreed in consultation with the landowner(s).	Not Applicable	Not Applicable as per the staging report.
REMM	Land use and property- Operation	OLU2	Sydney metro would continue to consult with key stakeholders and affected landowners during design development of the station interchanges and precincts.	Sydney Metro	Sydney Metro responsibility.
REMM	Landscape and Visual - Construction	LV1	Opportunities for the retention and protection of existing street trees and trees within the construction sites would be identified during detailed construction planning	Not Applicable	Not Applicable as per the staging report.
REMM	Landscape and Visual - Construction	LV2	Existing trees to be retained would be protected prior to the commencement of construction in the vicinity of these trees in accordance with AS4970-2009 Protection of Trees on Development Sites	Not Applicable	Not Applicable as per the staging report.

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
REMM	Landscape and Visual - Construction	LV3	All structures (including potential acoustic sheds, site offices, workshop sheds and site hoarding) would be finished in a colour which aims to minimise their visual impact where appropriate. This finish is to be applied to all visible fixtures and fittings (such as exposed downpipes	LORAC	Site sheds will be the standard white colour, containers are also standard colours and hoarding will be as per Sydney Metro requirements
REMM	Landscape and Visual - Operation	OLV1	The landscape design for the project would include consideration of appropriate species lists to minimise opportunities to attract wildlife at levels likely to present a hazard to aviation operations. The landscape design would have regard to relevant requirements and species lists under Western Sydney Airport's Wildlife Management Plan and other relevant guidelines, including the National Airports Safeguarding Framework (Guideline C) and Recommended Practices No. 1 – Standards for Aerodrome Bird/Wildlife Control (International Birdstrike Committee 2006)	Not Applicable	Not Applicable as per the staging report.
REMM	Landscape and Visual - Operation	OLV2	Lighting at stations would be designed and operated in accordance with AS4282- 2019 Control of the obtrusive effects of outdoor lighting and the National Airports Safeguarding Framework Guideline E: Managing the Risk of Distractions to Pilots from Lighting in the Vicinity of Airports (where relevant)	LORAC	Detail Design review process.
REMM	Landscape and Visual - Operation	OLV3	Opportunities to provide vegetation screening of the stabling and maintenance facility (from sensitive receivers such as Luddenham Road and the surrounding rural areas within the view shed) would be investigated during design development. This would include investigating options for establishing screening vegetation as early in the construction phase as possible	Not Applicable	Not Applicable as per the staging report.

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
REMM	Landscape and Visual - Operation	OLV4	Landscape screening would be provided along the corridor including restoring vegetation along the creeks to contain local views, in accordance with the Principal – Western Sydney Airport Design Guidelines, to minimise adverse visual impacts where feasible	Not Applicable	Not Applicable as per the staging report.
REMM	Landscape and Visual - Operation	OLV5	Corridor services, including the combined services route would be designed to reduce visual clutter and minimise visual impact ensuring these structures have a low profile and do not obstruct views across the corridor	LORAC	Design review process
REMM	Landscape and Visual - Operation	OLV6	Proposed engineering batters and water management measures would be designed to integrate with the existing landforms and natural features	Not Applicable	Not Applicable as per the staging report.
REMM	Landscape and Visual - Operation	OLV7	The landscape design for the project would: • incorporate salvaged native trees (including tree hollows and root balls), to enhance fauna habitat in suitable locations, including riparian corridors, where practicable • use native species from the relevant native vegetation communities within the local area for tree planting programs	Not Applicable	Not Applicable as per the staging report.
REMM	Social and economic-construction	SE1	Consultation with the local community and project stakeholders would be undertaken to: · identify and deliver opportunities for facilitating local creative and cultural activities in appropriate project locations · identify and deliver initiatives and opportunities to provide a positive contribution to the potentially affected community and affected locations such as temporary public art and targeted community events and programs	LORAC	Community Liaison Management Plan Section 18 of the CEMP: Community and Stakeholder Involvement Sydney Metro OCCS
REMM	Social and economic-construction	SE2	Not used	Not Applicable	Not Applicable

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
REMM	Social and economic-construction	SE3	Where partial property acquisition has been identified, undertake property liaison and consultation activities to minimise disruption to property owners and activities on impacted sites	Not Applicable	Not Applicable as per the staging report
REMM	Air quality - construction	AQ1	The Air Quality Management Plan for the project would incorporate the following best-practice odour management measures would be implemented during relevant construction works: · the extent of opened and disturbed contaminated soil at any given time would be minimised · temporary coverings or odour supressing agents would be applied to excavated areas where appropriate · regular odour monitoring would be conducted during excavation to verify that no offensive odours are being generated	LORAC	Attachment F of the CEMP: Operational Control Procedures - ERAPs -Air Quality
REMM	Air quality - construction	AQ2	Where acoustic sheds are proposed these would be designed and managed to prevent/minimise the escape of dust emissions	Not Applicable	Not Applicable as per the staging report
REMM	Air quality - construction	AQ3	Air Quality monitoring, consistent with the Western Sydney Airport, Air Quality Construction Environmental Management Plan would be carried out during construction to ensure that works meet the requirements under Schedule 1 of the Airports (Environment Protection) Regulations 1997	Not Applicable	Not Applicable as per the staging report

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
REMM	Hazard and risk-construction	HR1	All hazardous substances that may be required for construction would be stored and managed in accordance with the Storage and Handling of Dangerous Goods Code of Practice (WorkCover NSW, 2005), the Hazardous and Offensive Development Application Guidelines: Applying SEPP 33 (Department of Planning, Industry and Environment, 2011), the Work Health and Safety Act 2011 (Commonwealth and NSW) and the requirements of the Environmentally Hazardous Chemicals Act 1985 (NSW)	LORAC	Attachment F of the CEMP: Operational Control Procedures - ERAPs - Hazardous and contaminated Materials
REMM	Hazard and risk-construction	HR2	A Bushfire Management Plan would be prepared and implemented to manage current bushfire risk and identify response actions during construction of the project. The Plan would be prepared in consultation with the NSW Rural Fire Service and Western Sydney Airport. For project areas within Western Sydney International the Plan would be prepared having regard to the existing Western Sydney Airport Site at Badgerys Creek Bushfire Risk Management Plan (Western Sydney Airport Corporation, 2019)	Not Applicable	Not Applicable. Not a risk for FSM scope. Also stated as not required in Staging report Table 4
REMM	Hazard and risk-construction	HR3	A hazardous materials analysis would be carried out prior to stripping and demolition of structures and buildings which are suspected of containing hazardous materials (particularly asbestos). Hazardous materials and special waste (such as asbestos) would be removed and disposed of in accordance with the relevant legislation, codes of practice and Australian Standards (including the Work Health and Safety and Regulation 2011 (NSW))	LORAC	Attachment F of the CEMP: Operational Control Procedures - ERAPs - Hazardous and contaminated Materials

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
REMM	Hazard and risk- construction	HR4	Where the project crosses or is adjacent to the Warragamba to Prospect Water Supply Pipelines, construction planning, and approaches to minimising risks of damage or rupture of the Pipelines, would be developed in consultation with WaterNSW, and in accordance with the *Guidelines for Development Adjacent to the Upper Canal and Warragamba Pipelines*	Not Applicable	Not Applicable. Not a risk for FSM Scope.
REMM	Hazard and risk - Operation	OHR1	All hazardous substances that may be required for operation would be stored and managed in accordance with the Storage and Handling of Dangerous Goods Code of Practice (WorkCover NSW, 2005), the Hazardous and Offensive Development Application Guidelines: Applying SEPP 33 (Department of Planning, Industry and Environment, 2011), the Work Health and Safety Act 2011 (Commonwealth and NSW) and the requirements of the Environmentally Hazardous Chemicals Act 1985 (NSW)	Not Applicable	Not Applicable
REMM	Hazard and Risk - Operation	OHR2	A Bushfire Management Plan would be prepared and implemented to manage current bushfire risk and identify response actions during operation of the project. The Plan would be prepared in consultation with the NSW Rural Fire Service and Western Sydney Airport. For project areas within Western Sydney International the Plan would be prepared having regard to the existing Western Sydney Airport Site at Badgerys Creek Bushfire Risk Management Plan (Western Sydney Airport Corporation, 2019)	Not Applicable	Not Applicable

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
REMM	Hazard and Risk - Operation	OHR3	Where the project crosses or is adjacent to the Warragamba to Prospect Water Supply Pipelines, the design of the project would aim to minimise risks of damage or rupture of the Pipelines in consultation with WaterNSW, and in accordance with the *Guidelines for Development Adjacent to the Upper Canal and Warragamba Pipelines*	Not Applicable	Not Applicable
REMM	Hazard and Risk - Operation	OHR4	The project would be designed to avoid pilot distraction and minimise the risk of headlight glare from metro trains where on surface rail alignment. This would include providing glare screens in those locations where the project creates an unacceptable risk of pilot distraction	Not Applicable	Not Applicable
REMM	Cumulative Impacts - Construction	CL1	A Cumulative Construction Impacts Management Plan would be developed and would detail co-ordination and consultation requirements with the following stakeholders (as relevant) to manage the interface of projects under construction at the same time: • Western Sydney Airport • Transport for NSW • Western Parkland City Authority • Sydney Water • Emergency service providers • Utility providers Co-ordination and consultation requirements with these stakeholders would be detailed in the plan to include: • Provision of regular updates to the detailed construction program, construction sites and haul routes • Identification of key interfaces with other construction projects	LORAC	Does not seem commensurate with scope of work and associated risk. Only other early works packages such as the lift shaft and stair relocation works and bus interchange works are anticipated to be occurring simultaneously.

Revised Environmental Mitigation Measures: CSSI - 10051Type	Condition Classification	Condition Reference	Description	Responsibility	Where addressed
			• Development of mitigation strategies to manage cumulative impacts associated with these interfaces		

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Sydney Metro Environment and Sustainability Statement of Commitment	1.3	The Sydney Metro Environment and Sustainability Statement of Commitment (Appendix A) which applies to all Sydney Metro projects. Principal Contractors are required to undertake their works in accordance with this document. The Statement of Commitment reflects a commitment in the delivery of the project to: • Optimise sustainability outcomes, transport service quality, and cost effectiveness. • Develop effective and appropriate responses to the challenges of climate change, carbon management, resource and waste management, land use integration, customer and community expectation, and heritage and biodiversity conservation. • Be environmentally responsible, by avoiding pollution, enhancing the natural environment and reducing the project ecological footprint, while complying with all applicable environmental laws, regulations and statutory obligations. • Be socially responsible by delivering a workforce legacy which benefits individuals, communities, the project and industry, and is achieved through collaboration and partnerships.	Not Applicable	Not allocated by Sydney Metro
CEMF	Legislative and Other Requirements	2	The Project is characterised into components that are located outside Western Sydney International (off-airport) and components that are located within Western Sydney International (on-airport), to align with their different planning approval pathways required under State and Commonwealth legislation. In certain circumstances NSW legislative requirements may be applicable within the on-airport site. This will be reflected within the relevant Construction Environmental Manager Plan (CEMP) and sub-plans. Table 1.1 identifies key NSW environmental legislative requirements and their application to SMWSA construction works off-airport, current as at the date of this document. Sydney Metro and its Contractors must regularly review their legislative and other requirements. (See CEMF for Table 1.1)	LORAC	Noted

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Planning Approvals	2.2	There are three principal statutory schemes that govern the planning and assessment process for the Project which relate to works that are located outside the boundaries of Western Sydney International Airport (off-airport); and works that are located within the boundaries of Western Sydney International (on-airport). The off-airport components of the Project are subject to assessment and approval under the provisions of both State and potentially the Commonwealth environmental planning requirements, being the Environmental Planning and Assessment Act (EP&A Act) (NSW), and the Environment Protection and Biodiversity Conservation Act (EPBC Act) (Cth) respectively. The Project is State significant infrastructure (SSI) under section 5.12 of the EP&A Act and has sought a declaration to be critical State significant infrastructure under section 5.13 of the EP&A Act. Therefore, the Project is subject to assessment and approval by the NSW Minister for Planning and Public Spaces under Division 5.2 of the EP&A Act. Approval under the EP&A Act and EPBC Act for impacts on Matters of National Environmental Significance (MNES) and Commonwealth land is not required for the on-airport elements of the Project. The on-airport elements of the Project, however, trigger requirements to vary the current Airport Plan for Western Sydney International under the Airports Act 1996 (Airports Act) (Cth). The proposed variation must be referred to the Commonwealth Minister for the Environment for advice and agreement as relevant in respect of the variation before the Commonwealth Infrastructure Minister may vary the Airport Plan. The requirements of the relevant approvals are required to be complied with by Sydney Metro. Responsibility for implementing performance outcomes, mitigation measures and conditions of approval will be allocated between Sydney Metro and Principal Contractors as appropriate.	LORAC, except the Sydney Metro seek approval for the project and LORAC is to meet the requirements of these approvals.	Section 1.3 of the CEMP: Environmental Approvals

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Planning Approvals	2.2	Typically for projects approved under the EP&A Act, Sydney Metro are required to produce a Staging Report which sets out the applicability and allocation of NSW approval requirements within the project's program of works. For the purposes of SMWSA, Sydney Metro is expecting this requirement for the off-airport works, as well as a requirement to prepare a Construction (Rail) Plan for the on-airport works. Sydney Metro will prepare a combined Staging Report / Construction (Rail) Plan to identify the stages of construction of the project as well as the applicability and allocation of all NSW and Commonwealth requirements for each stage, including the: • Performance outcomes identified in the planning documentation • Mitigation measures identified in the planning documentation • Any Conditions of Approval of the SSI approval • Any conditions of the Airport Plan, as varied • The requirements of this CEMF.	Not Applicable	Not allocated by Sydney Metro
CEMF	Environment Protection Licence Requirements (off-airport works)	2.3	Contractors for SMWSA need to review the applicability of Schedule Activities and assess the need to obtain an Environment Protection Licence (EPL) for off-airport works associated with SMWSA. In other circumstances, work may be undertaken under an existing EPL held by Sydney Trains.	Not Applicable	Not allocated by Sydney Metro
CEMF	Environment Protection Licence Requirements (off-airport works)	2.3	Where required, Sydney Metro Principal Contractors undertaking off-airport works will: Apply for and be granted an EPL from the EPA. Hold an EPL which covers their scope of works as necessary under the POEO Act. Undertake their scope of works in accordance with the conditions of the applicable EPLs as issued by the EPA. Work under the existing Sydney Trains EPL	Not Applicable	Not allocated by Sydney Metro. No EPL required.
CEMF	Building Approvals (on-airport works)	2.4	Following variation of the Airport Plan and prior to construction for on-airport works, the Airports Act provides a regime requiring building approvals to be obtained from the Airport Building Controller (ABC) in respect of building activities on the airport site. WSA is required to provide its consent to any applications for building approvals. Applications for building approvals must satisfy the requirements of the Airports (Building Control) Regulations 1996. Once construction is complete, a certificate of compliance must be issued by the ABC before a building can be occupied or works used.	Not Applicable	Not Applicable
CEMF	Other Licences and Permits	2.5	EPBC Act Part 13 permits may be required in specific areas across the project, noting that such a permit is already in place for the impacts of the Stage 1 development of the Airport Site.	Not Applicable	Not allocated by Sydney Metro. No such permit considered required.

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Environmental and Sustainability Management System	3.1 a	Principal Contractors are required to have a corporate Environmental Management System certified under AS/NZS ISO 14001:2016.	LORAC	Section 6 of the CEMP: Environmental Management System
CEMF	Environmental and Sustainability Management System	3.1 b	Principal Contractors are required to develop a project based Environment and Sustainability Management System (E&SMS). The E&SMS will: i. Be consistent with the Principal Contractors corporate Environmental Management System and AS/NZS ISO 14001:2016; ii. Be supported by a process for identifying and responding to changing legislative or other requirements; iii. Include processes for assessing design or construction methodology changes for consistency against the planning approvals; iv. Include processes for tracking and reporting performance against sustainability and compliance targets; v. Include a procedure for the identification and management of project specific environmental risks and appropriate control measures; and vi. Be consistent with the Sydney Metro – Western Sydney Airport Sustainability Plan and the Sydney Metro Environment and Sustainability Statement of Commitment.	LORAC	LORAC CEMP and separate Sustainability Management Plan developed.
CEMF	Environmental and Sustainability Management System	3.1 c	All sub-contractors engaged by the Principal Contractor will be required to work under the Principal Contractor's Environment and Sustainability Management System.	LORAC	Noted
CEMF	Environmental and Sustainability Management System	3.1 d	The relationship between the Sydney Metro Environment and Sustainability Management System and the Principal Contractor's Environment and Sustainability Management System is shown in Figure 1.	LORAC	Noted
CEMF	Sustainability Management Plan	3.2 a	Principal Contractors are required to prepare and implement a Sustainability Management Plan (SMP) relevant to the scale and nature of the Project Works.	LORAC	LORAC CEMP and separate Sustainability Management Plan developed.
CEMF	Sustainability Management Plan	3.2 b	The SMP must, as a minimum, address and detail:	LORAC	Noted

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Construction Workforce Development and Industry Participation Plan	3.3 a	The Workforce Development and Industry Participation Plan will address and detail: i. The proposed response to State and Commonwealth requirements including but not limited to: - NSW Aboriginal Participation in Construction Policy - NSW Infrastructure Skills Legacy Program - Australian Jobs Act – Australian Industry Participation Plan - Western Sydney City Deal ii. Indigenous Participation Plan – National Partnerships Agreement Proposed appropriately skilled key personnel to support delivery of the workforce development and industry participation requirements; iii. Implementation approach, processes and systems to ensure delivery and reporting of workforce development and industry participation priority areas: - Jobs and Industry Participation; - Skills Development; - Diversity and Inclusion including Aboriginal Participation; and - Inspiring Future Talent.	LORAC	LORAC WDIP Plan
CEMF	Construction Environmental Management Plan(s)	3.4 a	Sydney Metro will develop the Construction Environmental Management Plans (CEMPs) for the on-airport construction of the rail. These on-airport CEMPs will be developed in consultation with WSA and be consistent with existing WSA CEMPs. Figure 2 displays the relationship between the planning documentation and the environmental documentation required for SMWSA.	Not Applicable	Not Applicable - no on airport works
CEMF	Construction Environmental Management Plan(s)	3.4 b	Sydney Metro will submit the on-airport CEMPs to the Commonwealth for approval. The approved SMWSA on-airport CEMPs will be implemented for all on-airport rail construction works and inform the Principal Contractor's environmental documentation where working on the airport site.	Not Applicable	Not Applicable - no on airport works
CEMF	Construction Environmental Management Plan(s)	3.4 c	Principal Contractors are required to prepare and implement a Construction Environmental Management Plan (CEMP) relevant to the scale and nature of their off-airport scope of works. The CEMP shall comprise of a main CEMP document, issue specific sub plans, activity specific procedures and site based control maps. The CEMP shall illustrate the relationship between other plans required by the contract, in particular those that relate to design management. The CEMP will address the specific requirements of scope of works and address the off-airport environmental requirements.	LORAC	LORAC -Sydney Metro WSA Enabling Works-FSM CEMP

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Construction Environmental Management Plan(s)	3.4 d	Depending on the scope and scale of the works, Sydney Metro may decide to streamline the CEMP and sub-plan requirements for off-airport works. For example, depending on the risk associated with particular environmental issues it may be appropriate to remove the need for a sub plan, or replace with a procedure as part of the CEMP. The CEMP and sub-plan requirements from this CEMF for each construction stage / contract will be detailed in the Staging Report / Construction (Rail) Plan for the project.	Sydney Metro	No CEMP subplans to be developed. All relevant information within the CEMP document.
CEMF	Construction Environmental Management Plan(s)	3.4 e	Environmental documentation prepared for works within the on-airport site will be in accordance with the approved SMWSA on-airport CEMPs	LORAC	Not Applicable - no on airport works
CEMF	Construction Environmental Management Plan(s)	3.4 f	The Principal Contractor CEMP will cover the requirements of the relevant planning approval documentation, the conditions of all other permits and licences, the Principal Contractor's corporate EMS, the environmental provisions of the contract documentation and this Construction Environmental Management Framework.	LORAC	LORAC --Sydney Metro WSA Enabling Works-FSM CEMP
CEMF	Construction Environmental Management Plan(s)	3.4 g	As a minimum the Principal Contractor CEMP will:	LORAC	Noted.
			i. Include a contract specific environmental policy;		Section 5 of the CEMP: Environmental and Energy Policy
			ii. Include a description of activities to be undertaken during construction;		Section 1.2 of the CEMP: Project Description
			iii. For each plan under the CEMP include a matrix of the relevant SSI Conditions of Approval referencing where each requirement is addressed;		CEMP: Compliance Tracking Matrix
			iv. For each plan under the CEMP, set objectives and targets, and identify measurable key performance indicators in relation to these;		Section 7 of the CEMP: Environmental Objectives and Targets
			v. For each role that has environmental accountabilities or responsibilities, including key personnel, provide a tabulated description of the authority and roles of key personnel, lines of responsibility and communication, minimum skill level requirements and their interface with the overall project organisation structure;		Section 3 of the CEMP: Roles and Responsibilities

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
			vi. Assign the responsibility for the implementation of the CEMP to the Environment Manager, who will have appropriate experience. The Principal Contractor's Project Director will be accountable for the implementation of the CEMP;		Section 3 of the CEMP: Roles and Responsibilities - Environmental Manager
			vii. Identify communication requirements, including liaison with stakeholders and the community;		Section 5 of the CEMP: Environmental and Energy Policy
			viii. Include induction and training requirements and a summary of the Training Needs Analysis required in Section 3.11(b);		Section 11 of the CEMP: Training, Awareness and Competence
			ix. Management strategies for environmental compliance and review of the performance of environmental controls;		Section 16 of the CEMP: Review and Approvals
			x. Procedures for environmental inspections and monitoring, auditing and review, and reporting on environmental performance including environmental compliance tracking;		Section 17 of the CEMP: Monitoring, Measurement and Reporting and Section 15 of the CEMP: Audit
			xi. Include an annual schedule for auditing the CEMP and Sub-Plans that is updated at least monthly;		Section 15 of the CEMP: Audit
			xii. Include procedures for emergency and incident management, non-compliance management, and corrective and preventative action; and		Section 13 of the CEMP: Emergency Preparedness and Response. Section 17.4 of the CEMP: Incidents Management Attachment B of the CEMP: Incident Management Flowchart Section 17.3.1 of the CEMP: Non-compliances and corrective actions

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
			xiii. Include procedures for the control of environmental records.		Section 14 of the CEMP: Records
CEMF	Construction Environmental Management Plan(s)	3.4 h	The Principal Contractor CEMP and associated sub-plans will be reviewed by Sydney Metro prior to any construction works commencing. For off-airport works approved under the CSSI, the independent environmental representative (see Section 3.13) will also review the CEMP.	LORAC	Noted
CEMF	Construction Environmental Management Plan(s)	3.4 i	Where a corresponding systems document exists within the Sydney Metro Integrated Management System, the Principal Contractor's procedures will be required to be consistent with any requirements in those documents.	LORAC	Noted
CEMF	Off-Airport Construction Environmental Management sub-plans	3.5 a	Subject to Section 3.4(b) the Principal Contractors will prepare issue-specific environmental sub plans to the CEMP which address each of the relevant environmental impacts at a particular site or stage of the project. Issue specific sub plans will include as a minimum: i. Spoil management; ii. Groundwater management; iii. Traffic and transport management; iv. Noise and vibration management; v. Heritage management; vi. Flora and fauna management; vii. Visual amenity management; viii. Soil and water management; ix. Air quality management; and Waste management. Some of these sub plans may also be informed by other environmental management documents included in the planning approval, for example the Construction Traffic Management Framework or Construction Noise and Vibration Standard.	LORAC	Attachment F of the CEMP: ERAPs
CEMF	Off-Airport Construction Environmental Management sub-plans	3.5 b	Additional detail on the minimum requirements for these sub plans is provided in Sections 6 to14 of this CEMF.	LORAC	Noted
CEMF	Environmental Procedures and Control Maps	3.6 a	The Principal Contractor will prepare and implement activity specific environmental procedures. These procedures should supplement environmental management sub plans, but may substitute for sub plans in agreement with Sydney Metro if a reasonable risk based justification can be made and the sub plan is not a requirement of any approval.	LORAC	Attachment F of the CEMP: ERAPs

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Environmental Procedures and Control Maps	3.6 b	The procedures will include: i. A breakdown of the work tasks relevant to the specific activity and indicate responsibility for each task; ii. Potential impacts associated with each task; iii. A risk rating for each of the identified potential impacts; iv. Mitigation measures relevant to each of the work tasks; and v. Responsibility to ensure the implementation of the mitigation measures.	LORAC	Attachment F of the CEMP: ERAPs
CEMF	Environmental Procedures and Control Maps	3.6 c	The Principal Contractor will prepare and implement site based, progressive Environmental Control Maps (ECMs) which as a minimum: i. Depicting the current representation of the site; ii. Indicate which environmental procedures, environmental approvals, or licences are applicable; iii. Illustrate the site, showing significant structures, work areas and boundaries; iv. Illustrate the environmental control measures and environmentally sensitive receivers; v. Is endorsed by the Principal Contractors Environmental Manager or delegate; vi. Include all the training and competency requirements for relevant workers; and. vii. Be communicated to relevant workers, including sign off the appropriate procedures prior to commencing works on the specific site and / or activity.	LORAC	Section 12.2 of the CEMP: Environmental Control Maps
CEMF	Additional Environmental Assessments	3.7 a	Where the requirement for an additional environmental assessment is identified, this will be undertaken prior to undertaking any construction activities. The environmental assessment will include: i. A description of the existing surrounding environment; ii. Details of the ancillary works and construction activities required to be carried out including the hours of works; iii. An assessment of the environmental impacts of the works, including, but not necessarily limited to, traffic, noise and vibration, air quality, soil and water, ecology and heritage; iv. Details of mitigation measures and monitoring specific to the works that would be implemented to minimise environmental impacts; and v. Identification of the timing for completion of the construction works, and how the sites would be reinstated (including any necessary rehabilitation).	LORAC	Section 9.1 of the CEMP: Project Approvals

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Cumulative Impacts	3.8 a	A cumulative construction impacts management plan would be developed. The plan would detail co-ordination and consultation requirements with the following stakeholders (as relevant) would occur where required to manage the interface of projects under construction at the same time: Western Sydney Airport i. Transport for NSW ii. Department of Planning, Industry and Environment iii. Western Parkland City Authority (and their contractors) iv. Emergency service providers v. Utility providers	LORAC to implement, Sydney Metro to develop the CCIMP.	Sydney Metro to complete as required
CEMF	Cumulative Impacts	3.8 b	Co-ordination and consultation requirements with these stakeholders would be detailed in the plan to include: i. provision of regular updates to the detailed construction program, construction sites and haul routes ii. identification of key interfaces with other construction projects iii. Development of mitigation strategies to manage cumulative impacts associated with these interfaces	LORAC to implement, Sydney Metro to develop the CCIMP.	Sydney Metro to complete as required
CEMF	Condition Surveys	3.9 e	Prior to the commencement of construction the Principal Contractors are to offer Pre-construction Building Condition Surveys, in writing, to the owners of buildings where there is a potential for construction activities to cause any damage (regardless of severity). If accepted, the Principal Contractor will produce a comprehensive written and photographic condition report produced by an appropriate professional prior to relevant works commencing.	LORAC	Attachment F of the CEMP: ERAPs - Archaeology and Heritage
CEMF	Condition Surveys	3.9	Prior to the commencement of construction the Principal Contractor will prepare a Road Dilapidation Report for all local public roads proposed to be used by heavy vehicles. Dilapidation reports are to include other road infrastructure such as signs, curbs, applicable driveways and pedestrian paths.	LORAC	Attachment F of the CEMP: ERAPs - Traffic Management
CEMF	Register of Hold Points	3.10 a	Principal Contractors will identify hold points, beyond which approval is required to proceed with a certain activity. Example activities include vegetation removal and water discharge. Hold points will be documented in relevant CEMPs	LORAC	Section 12.1 of the CEMP.

<table>
<tr><th>Type</th><th>Condition Classification</th><th>Condition Reference</th><th>Description</th><th>Responsibility</th><th>Where it is Addressed</th></tr>
<tr><td>CEMF</td><td>Register of Hold Points</td><td>3.10 f</td><td>Table 1.4 provides the structure for the register of hold points as well as a preliminary list of hold points which will be implemented.

Table 1.4 Preliminary Register of Hold Points
<table><tr><th>Hold Point</th><th>Release of Hold Point</th><th>By Who</th></tr><tr><td>Prior to Vegetation Clearing / Ground Disturbance</td><td>Pre-clearing inspection
Erosion and sediment control plan</td><td>Qualified Ecologist
Contractor's Environmental Manager or delegate</td></tr><tr><td>Discharge of water</td><td>Water tested to verify compliance and approval to discharge</td><td>Contractor's Environment Manager or delegate</td></tr><tr><td>Out of hours works</td><td>Noise Assessment</td><td>Contractor's Environment Manager</td></tr><tr><td>Use of local roads by heavy vehicles</td><td>Road Dilapidation Report</td><td>Appropriate Professional nominated by Principal Contractor</td></tr><tr><td>Construction identified as affecting buildings</td><td>Building Condition Survey</td><td>Appropriate Professional nominated by Principal Contractor</td></tr></table></td><td></td><td></td></tr>
<tr><td>CEMF</td><td>Training, Awareness and Competence</td><td>3.11 a</td><td>a. Principal Contractors are responsible for determining the training needs of their personnel. As a minimum this will include site induction, regular toolbox talks and topic specific environmental training as follows:
i. The site induction will be provided to all site personnel and will include, as a minimum:
Training purpose, objectives and key issues;
Contractor’s environmental and sustainability policy(s) and key performance indicators;
Due diligence, duty of care and responsibilities;
Relevant conditions of any environmental licence and/or the relevant conditions of approval;
Site specific issues and controls including those described in the environmental procedures;
Reporting procedure(s) for environmental hazards and incidents; and
Communication protocols for interactions with community and stakeholders.
ii. Toolbox talks will be held on a regular basis in order to provide a project or site wide update, including any key or recurring environmental issues; and
iii. Topic specific environmental training should be based upon, but is not limited to, issue specific sub-plans required under Section 3.5 (a).</td><td>LORAC</td><td>Section 11 of the CEMP: Training, Awareness and Competence</td></tr>
</table>

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Training, Awareness and Competence	3.11 b	Principal Contractors will conduct a Training Needs Analysis which: i. Identifies that all staff are to receive an environmental training; ii. Identifies the competency requirements of staff that hold environmental roles and responsibilities documented within the Construction Environmental Management Plan and sub-plans; iii. Identifies appropriate training courses/events and the frequency of training to achieve and/or maintain these competency requirements; and iv. Implements and documents as part of the CEMP a training schedule that plans attendance at environmental training events, provides mechanisms to notify staff of their training requirements, and identifies staff who do not attend scheduled training events or who have overdue training requirements.	LORAC	Section 11 of the CEMP: Training, Awareness and Competence
CEMF	Emergency and Incident Response	3.12 a	Principal Contractors undertaking off-airport work in accordance with an EPL must develop and implement a Pollution Incident Response Management Plan, in accordance with the requirements of the POEO Act. Contractor's emergency and incident response procedures will also be consistent with any relevant Sydney Metro procedures and, for on-airport works, consistent with the environmental incident and emergency management requirements identified in the Western Sydney Airport Site Environmental Management Framework, and will include: i. Categories for environmental emergencies and incidents; ii. Notification protocols for each category of environmental emergency or incident, including notification to Sydney Metro, WSA (where required for on-airport works) and notification to owners / occupiers in the vicinity of the incident. This is to include relevant contact details; iii. Identification of personnel who have the authority to take immediate action to shut down any activity, or to affect any environmental control measure (including as directed by an authorised officer of any regulator or government department); iv. A process for undertaking appropriate levels of investigation for all incidents and the identification, implementation and assessment of corrective and preventative actions; and v. Notification protocols of incidents to relevant regulators and stakeholders including (but not limited to) the EPA, DPHI, the AEO, WSA and DITRDC for incidents that are made by the Contractor or Sydney Metro.	Not Applicable	Not Applicable - no EPL required
CEMF	Emergency and Incident Response	3.12 b	The Contractor will make all personnel aware of the plan and their responsibilities.	LORAC	Section 13 of the CEMP: Emergency Preparedness and Response

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Independent Environmental Representatives	3.13 a	Sydney Metro will engage Independent Environmental Representatives (ERs) as required under the SSI approval for off-airport works to undertake the following, along with any additional roles as required: i. Review, provide comment on and endorse (where required) any relevant environmental documentation to verify it is prepared in accordance with relevant environmental legislation, planning approval conditions, Environment Protection Licences, relevant standards and this CEMF; ii. Monitor and report on the implementation and performance of the above mentioned documentation and other relevant documentation; iii. Provide independent guidance and advice to Sydney Metro and the Contractors in relation to environmental compliance issues and the interpretation of planning approval conditions; iv. Be the principal point of advice for the DPHI in relation to all questions and complaints concerning the environmental performance of the project; v. Ensure that environmental auditing is undertaken in accordance with all relevant project requirements; and vi. Recommend reasonable steps, including 'stop works', to be taken to avoid or minimise adverse environmental impacts.	Sydney Metro	Sydney Metro to engage ER
CEMF	Airport Environment Officer	3.14	An Airport Environment Officer (AEO) is responsible for the day to day regulatory oversight of compliance with the Airports (Environment Protection) Regulations 1997 (AEPRs) at Western Sydney International and will have a role in relation to the on-airport works for SWMG. The responsibilities of the AEO in relation to on-airport works of SMWSA include: i. Monitoring compliance with the AEPRs ii. Facilitate an understanding of the obligations of the AEPRs iii. Ensure the best possible outcomes are achieved iv. Complete site inspections to review monitoring requirements and completion of works v. Review and comment on incidents and remedial activities vi. Issue an environment protection order in accordance with Part 7 of the AEPR vii. Issue an infringement notice in response to an offence against the AEPR.	Not Applicable	Not Applicable - no on airport works

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Roles and Responsibilities	3.15 a	In relation to Roles and Responsibilities the Principal Contractor CEMP will: i. Describe the relationship between the Principal Contractor, Sydney Metro, key regulatory stakeholders, the independent environmental representative and the independent certifier; ii. For each role that has environmental accountabilities or responsibilities, including key personnel, provide a tabulated description of the authority and roles of key personnel, lines of responsibility and communication, minimum skill level requirements and their interface with the overall project organisation structure; iii. Provide details of each specialist environment, sustainability or planning consultant who is employed by the Principal Contractor including the scope of their work; and iv. Provide an overview of the role and responsibilities of the Independent Environmental Representative, the Independent Certifier and other regulatory stakeholders.	LORAC	Section 3 of the CEMP: Roles and Responsibilities
CEMF	Roles and Responsibilities	3.15 b	All sub-contractors engaged by the Principal Contractor will be required to operate within the EMS documentation of that Principal Contractor.	LORAC	Section 3 of the CEMP: Roles and Responsibilities
CEMF	Environmental Monitoring, Inspections and Auditing	3.16	Issue specific environmental monitoring will be undertaken as required or as additionally required by any approval, permit or licence conditions.	LORAC	Section 17.2 of the CEMP: Environmental Inspection and Monitoring
CEMF	Environmental Monitoring, Inspections and Auditing	3.16	The results of any monitoring undertaken as a requirement of a license or permit that is required to be published will be published on the Principal Contractor's, or a project specific, website within 14 days of obtaining the results.	LORAC	Section 17.2 of the CEMP: Environmental Inspection and Monitoring. LORAC will provide the information to the principal for publishing on the project website.

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Environmental Monitoring, Inspections and Auditing	3.16	Environmental inspections will include: i.Surveillance of environmental mitigation measures by the Site Foreman; and ii.Periodic inspections by the Principal Contractor's Environmental Manager (or delegate) to verify the adequacy of all environmental mitigation measures. This will be documented in a formal inspection record.	LORAC	Section 17.2 of the CEMP: Environmental Inspection and Monitoring
CEMF	Environmental Monitoring, Inspections and Auditing	3.16	Regular site inspections by Sydney Metro, the ER for off-airport works and the AEO for on-airport works will be undertaken at a frequency to be agreed with the Principal Contractor, based on the risk of activity but as a minimum monthly.	Sydney Metro	Section 17.2 of the CEMP: Environmental Inspection and Monitoring. . Sydney Metro will organise inspections in consultation with the LORAC
CEMF	Environmental Monitoring, Inspections and Auditing	3.16	Principal Contractors must undertake internal environmental audits. The scope will include: i. Compliance with any approval, permit or licence conditions; ii. Compliance with the E&SMS, CEMP, SMP, sub-plans and procedures; iii. Community consultation and complaint response; iv. Environmental training records; and v. Environmental monitoring and inspection results.	LORAC	Section 15 of the CEMP: Audit
CEMF	Environmental Monitoring, Inspections and Auditing	3.16	Sydney Metro will also undertake periodic audits of the Principal Contractor's E&SMS and compliance with the environmental aspects of contract documentation, including this CEMF. These audits would cover both on- and off-airport works.	Sydney Metro will organise with co-operation of LORAC	Section 15 of the CEMP: Audit
CEMF	Environmental Monitoring, Inspections and Auditing	3.16	Off-airport works approved under the SSI approval will be subjected to audits undertaken by the independent environmental auditor. Independent environmental audits will focus on compliance with the planning approval and the conditions of approval. The independent auditor is approved by DPHI and an audit schedule will be developed in consultation with the Principal Contractor and Sydney Metro.	Sydney Metro will organise with co-operation of LORAC	Section 15 of the CEMP: Audit

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Environmental Monitoring, Inspections and Auditing	3.16	On-airport works approved under the Airport Plan, as varied, will be subject to environmental audits and compliance audits, noting unscheduled audits may also be undertaken. The environmental audits would audit the environmental systems and on-site performance of the on-airport works of SMWSA and be undertaken on a 6 monthly basis.	Not Applicable	Not Applicable - no on airport works
CEMF	Environmental Non compliances	3.17 a	Principal Contractors will document and detail any non-compliances arising out of the above monitoring, inspections and audits. Sydney Metro will be made aware of all non-compliances in a timely manner	LORAC shall provide the Sydney Metro with the Incident Report required in a SAI360 Compatible Format	Section 17.3.1 of the CEMP: Non-Compliances and Corrective actions.
CEMF	Environmental Non compliances	3.17 b	Principal Contractors will develop and implement corrective actions to rectify the non-compliances and preventative actions in order to prevent a re-occurrence of the non-compliance. Contractors will also maintain a register of non-compliances, corrective actions and preventative actions.	LORAC	Section 17.3.1 of the CEMP: Non-Compliances and Corrective actions.
CEMF	Environmental Non compliances	3.17 c	Sydney Metro may raise non-compliances against environmental requirements. The Environmental Representative and Airport Environmental Officer also have the authority to raise a non-compliance for their respective areas of work.	Sydney Metro	Section 17.3 of the CEMP: Environmental Action Tracking
CEMF	Environmental Records and Compliance Reporting	3.18	Principal Contractors will maintain appropriate records of the following: i. Site inspections, audits, monitoring, reviews or remedial actions; ii. Documentation as required by performance conditions, approvals, licences and legislation; iii. Modifications to site environmental documentation (e.g. CEMP, sub-plans and procedures); and iv. Other records as required by this Construction Environmental Management Framework.	LORAC	Section 14 of the CEMP: Records
CEMF	Environmental Records and Compliance Reporting	3.18	Records must be accessible onsite for the duration of works.	LORAC	Section 14 of the CEMP: Records
CEMF	Environmental Records and Compliance Reporting	3.18	Records will be retained by the Principal Contractor for a period of no less than 7 years. Records will be made available in a timely manner to Sydney Metro (or their representative) upon request.	LORAC	Section 14 of the CEMP: Records

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Environmental Records and Compliance Reporting	3.18	Compliance reports detailing the outcome of any environmental surveillance activity including internal and external audits (refer to Section 3.14) will be produced by the Principal Contractors Environmental Manager or delegate. These reports will be submitted to Sydney Metro at an agreed frequency.	LORAC	Section 14 of the CEMP: Records
CEMF	Review and Improvement of the Environment & Sustainability Management Systems	3.19	Principal Contractors will ensure the continual review and improvement of the management systems. This will generally occur in response to: i. Issues raised during environmental surveillance and monitoring; ii. ii. Expanded scope of works; iii. Environmental incidents; and iv. Environmental Non-compliances.	LORAC	Section 16 of the CEMP: Review and Approvals
CEMF	Review and Improvement of the Environment & Sustainability Management Systems	3.19	A formal review of the management systems by the Principal Contractor's Senior Management Team will also occur on an annual basis, as a minimum. This review shall generate actions for the continual improvement of the systems and supporting management plans.	LORAC	Section 16 of the CEMP: Review and Approvals
CEMF	Stakeholder and Community Involvement Overview	4.1	i. Throughout construction, Sydney Metro and the Principal Contractors will work closely with stakeholders and the community to ensure they are well informed regarding the construction works.	LORAC	Community Liaison Management Plan Section 18 of the CEMP: Community and Stakeholder Involvement Sydney Metro OCCS
CEMF	Stakeholder and Community Involvement Overview	4.1	Stakeholders and the community will be informed of significant events or changes that affect or may affect individual properties, residences and businesses. These will include: i. Significant milestones; ii. Design changes; iii. Changes to traffic conditions and access arrangements for road users and the affected public; and iv. Construction operations which will have a direct impact on stakeholders and the community including noisy works, interruptions to utility services or construction work outside of normal work hours.	LORAC	Community Liaison Management Plan Section 18 of the CEMP: Community and Stakeholder Involvement Sydney Metro OCCS

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Community Communication Strategy	4.2 a	An Overarching Community Communication Strategy (OCCS) has been developed for SMWSA. The OCCS incorporates both on and off-airport works, with the on-airport components being developed in consultation with WSA.	LORAC	Community Liaison Management Plan Sydney Metro OCCS
CEMF	Community Communication Strategy	4.2	Each Principal Contractor would be responsible for implementing their own Community Communication Strategy prepared in accordance with this overarching strategy.	LORAC	Community Liaison Management Plan Sydney Metro OCCS

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Community Communication Strategy	4.2	Key elements of the Community Communication Strategy, which will be implemented at appropriate times in the construction process, include: i. Notification (including targeted letterbox drops and email) of any works that may disturb local residents and businesses (such as noisy activities and night works) at least seven days prior to those works commencing; ii. Notification (including targeted letterbox drops and email) of works that may affect transport (such as road closures, changes to pedestrian routes and changes to bus stops); iii. Traffic alerts (via email) to all key traffic and transport stakeholders advising of any changes to access and local traffic arrangements (at least seven days prior to significant events); iv. Print and radio advertisements regarding major traffic changes; v. 24-hour toll-free community project information phone line; vi. Complaints management process; vii. Community information sessions, as required; viii. Regular updates to the Sydney Metro website (sydneymetro.info), including uploading of all relevant documents, and contact details for the stakeholder and community relations team; ix. Provision of information to the Sydney Metro Community Information Centre including community newsletters, information brochures and fact sheets and interactive web-based activities; x. Clear signage at the construction sites; xi. Regular newspaper advertisements in local and metropolitan papers; xii. Regular inter-agency group meetings; xiii. Community, business and stakeholder satisfaction surveys and feedback forms; xiv. Translator and interpreter services; and xv. The Principal Contractor's Community Relations Team will liaise with the Sydney Metro Project Communications team as the point of contact for the community.	LORAC	Community Liaison Management Plan Section 18 of the CEMP: Community and Stakeholder Involvement Sydney Metro OCCS

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Complaint Handling	4.3	a. Community liaison and complaints handling will be undertaken in accordance with the Construction Complaints Management System and will include: i. Principal Contractors will deal with complaints in a responsive manner so that stakeholders' concerns are managed effectively and promptly; and ii. A verbal response will be provided to the complainant as soon as possible and within a maximum of two hours from the time of the complaint (unless the complainant requests otherwise). A detailed written response will then be provided, if required, to the complainant within one week. iii. Community liaison and complaints handling for construction of on-airport works will be undertaken in accordance with the Integrated Complaint Handling Procedure. This Procedure will include a single integrated complaint handling telephone line and email address for all works on the airport site which will be managed so that any contact made by a stakeholder will be directed to the relevant party responsible for those works so that stakeholder's concerns are managed effectively and promptly.	LORAC	Community Liaison Management Plan Sydney Metro OCCS LORAC will participate in the implementation of the complaints management system and provide Sydney metro with all information it requires to comply.
CEMF	Urban Design of Temporary Works	4.4 a	a. Principal Contractors will ensure as a minimum: i. Temporary construction works consider urban design and visual impacts, including: -Artwork, graphics and images to enhance the visual appearance of temporary works in high visibility locations; -Project information to raise awareness on benefits, explain the proposed works at each site and provide updates on construction progress; -Community information, including contact numbers for enquiries / complaints; -Signage and information to mitigate impacts on local businesses which may be obscured by the construction site; -Sydney Metro advertising / public awareness campaigns; and -Logos / branding, including Sydney Metro, NSW and Commonwealth Government, and Contractor branding. ii. The design of all temporary works will require Sydney Metro approval in relation to urban design and visual impacts and Sydney Metro will stipulate the design of hording artwork, including: -Sydney Metro advertising / public awareness campaigns; and -Logos / branding, including Sydney Metro, NSW and Commonwealth Government, and Contractor branding.	LORAC	Noted

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Urban Design of Temporary Works	4.4 b	Construction hoardings, scaffolding and acoustic sheds will be regularly inspected and kept clean and free of dust build up. Graffiti on construction hoardings, scaffolding or acoustic sheds will be removed or painted over promptly.	LORAC	Noted
CEMF	Urban Design of Temporary Works	4.4 c	The principles of Crime Prevention through Environmental Design (CPTED) will be applied to all works, including temporary works that have a public interface.	LORAC	Noted
CEMF	Business and Property Impacts	4.5	a. Principal Contractors will proactively work with potentially affected stakeholders to identify the likely impacts and put in place measures to minimise impacts.	LORAC	Attachment F of the CEMP: ERAPs-Socio-Economic, Land Use and Property
CEMF	Business and Property Impacts	4.5	Construction works will be undertaken to meet the following objectives: I. Minimise the potential impact of the project to businesses affected by construction works; II. Ensure businesses are kept informed of the project and consulted in advance of major works or factors that are likely to have a direct impact; III. Consult with all business directly affected by changes to access arrangements regarding specific requirements at least two weeks prior to those changes coming into effect; and IV. Ensure that business stakeholder enquiries and complaints regarding the project are managed and resolved effectively.	LORAC	Attachment F of the CEMP: ERAPs-Socio-Economic, Land Use and Property

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Business and Property Impacts	4.5	The Community Communication Strategy (Section 4.2) will document key issues relating to business impacts by locality with a particular focus on proactive consultation with affected businesses. Including I. Identification of specific businesses which are sensitive to construction activity disturbances; II. Summary of the commercial character of the locality, its general trading profile (daily and annually) and information gained from the business profiling such as: -Operating hours -Main delivery times -Reliance on foot traffic -Any signage or advertising that may be impacted -Customer origin; and -Other information specific to the business that will need to be considered in construction planning. i. Define the roles and responsibilities in relation to the control and monitoring of business disturbance ii. Identification of locality specific standard business mitigation measures which would be implemented; iii. Maps and diagrams to illustrate the information for easy identification of measures which would be implemented; iv. Description of the monitoring, auditing and reporting procedures; v. Procedure for reviewing performance and implementing corrective actions; vi. Description of the complaints handling process; and vii. Procedure for community consultation and liaison.	LORAC	Community Liaison Management Plan Sydney Metro OCCS LORAC will meet any obligation required of them by the OCCS.
CEMF	Working Hours	5.1 a	Standard working hours are between 7am – 6pm on weekdays and 8am – 1pm on Saturdays.	LORAC	Attachment F of the CEMP: ERAPs - Noise and Vibration

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Working Hours	5.1 b	Works which can be undertaken outside of standard construction hours without any further approval include: Those which have been described and assessed in the environmental assessments. For example, tunnelling and underground excavations and supporting activities or works within Western Sydney International i. Works which are determined to comply with the relevant Noise Management Level at sensitive receivers; ii. The delivery of materials outside of approved hours as required by the Police or other authorities (including Transport for NSW) for safety reasons; iii. Where it is required to avoid the loss of lives, property and / or to prevent environmental harm in an emergency; and iv. Where written agreement is reached with all affected receivers.	LORAC	Attachment F of the CEMP: ERAPs - Noise and Vibration
CEMF	Working Hours	5.1 c	Where off-airport works are being undertaken under an Environmental Protection Licence, Principal Contractors may apply for EPA approval to undertake works outside of normal working hours.	LORAC	Section 8.3 of the CEMP: Environmental Protection License
CEMF	Construction Traffic Management	5.2 a	The management of traffic impacts due to construction is addressed in the Construction Traffic Management Framework (CTMF) which sets out system requirements for management plans and other associated documentation. This document applies to Principal Contractors and forms part of the contract documentation.	LORAC	Attachment F of the CEMP: ERAPs - Traffic Management
CEMF	Construction Traffic Management	5.2 b	The Construction Traffic Management Framework (CTMF) sets out the approach to managing traffic impacts during the construction of the Sydney Metro projects. The CTMF also outlines contractor requirements, with reference to third party agreements. Principal Contractors are required to produce these documents in accordance with the CTMF.	LORAC	Attachment F of the CEMP: ERAPs - Traffic Management
CEMF	Construction Traffic Management	5.2 c	For on-airport works, the Sydney Metro Western Sydney Airport Traffic and Access CEMP will detail all the management objectives and will be consistent with the WSA Traffic and Access CEMP, including all appendices to the CEMP	Not Applicable	Not Applicable

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Site Layout	5.3 a	Principal Contractors will consider the following in the layout of construction sites: i. The location of noise intensive works and 24 hour activities in relation to noise sensitive receivers; ii. The location of site access and egress points in relation to noise and light sensitive receivers, especially for sites proposed to be utilised 24 hours per day; iii. The use of site buildings to shield noisy activities from receivers; iv. The use of noise barriers and / or acoustic sheds where feasible and reasonable for sites proposed to be regularly used outside of daytime hours; and v. Aim to minimise the requirement for reversing, especially of heavy vehicles	LORAC	Attachment F of the CEMP: ERAPs - Noise and Vibration
CEMF	Reinstatement	5.4 a	Where measures for reinstatement are not stipulated in the contracts, mitigation measures for reinstatement of construction and ancillary lands will be produced in consultation with Sydney Metro, the landowner and stakeholders.	LORAC	Attachment F of the CEMP: ERAPs - Visual Amenity
CEMF	Reinstatement	5.4 b	Mitigation measures required for reinstatement will be incorporated into the CEMP and will include as a minimum: i. Principal Contractors will clear and clean all working areas and accesses at project completion; ii. At the completion of construction all plant, temporary buildings or vehicles not required for the subsequent stage of construction will be removed from the site; iii. All land, including roadways, footpaths, loading facilities or other land having been occupied temporarily will be returned to their pre-existing condition or better; and iv. Reinstatement of community spaces, infrastructure and services will occur as soon as possible after completion of construction.	LORAC	Attachment F of the CEMP: ERAPs - Visual Amenity

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Spoil Management Objectives	6.1 a	The following spoil management objectives will apply to the construction of the project: i. Minimise spoil generation where possible; ii. The project will mandate 100% reuse or recycling (on or off-site) of usable spoil; iii. Spoil will be managed with consideration to minimising adverse traffic and transport related issues; iv. Spoil will be managed to avoid contamination of land or water; v. Spoil will be managed with consideration of the impacts on residents and other sensitive receivers; and vi. Site contamination will be effectively managed to limit the potential risk to human health and the environment.	LORAC	Attachment F of the CEMP: Spoil Management

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Spoil Management Implementation	6.2 a	Principal Contractors will develop and implement a Spoil Management Plan for their scope of works. The Spoil Management Plan will include as a minimum: i. The spoil mitigation measures as detailed in the planning approval documentation; ii. The responsibilities of key project personnel with respect to the implementation of the plan; iii. Procedures and methodologies for the haulage and disposal locations, storage and stockpiling arrangements, including those for virgin excavated natural material, contaminated and unsuitable material; iv. Procedures for the testing, excavation, classification, handling and reuse of spoil; v. Measures that will be implemented to both reduce spoil quantities and maximise the beneficial reuse of spoil which will be generated during the performance of the Contractor's Activities, including how spoil generation is minimised through the design development process; vi. Details, links or references to where traffic movements in relation to spoil are described, and measures that will be implemented to minimise traffic and noise impacts associated with haulage and disposal of spoil; vii. quantities for reuse of spoil within the Construction Site or Western Sydney International, for beneficial reuse of spoil off site and for spoil disposal; viii. Processes and procedures for the management of the environmental and social impacts of spoil transfer and reuse; ix. A register of spoil receipt sites that includes the site or project name, location, capacity, site owner and which tier the site is classified as under the spoil reuse hierarchy; x. Spoil management monitoring requirements; and xi. Compliance record generation and management.	LORAC	Attachment F of the CEMP: Spoil Management
CEMF	Spoil Management Implementation	6.2 b	Spoil management measures will be included in regular inspections undertaken by the Contractor, and compliance records will be retained. These will include: i. Records detailing the beneficial re-use of spoil either within the project or at off-site locations; and ii. Waste dockets for any spoil disposed of to landfill sites	LORAC	Attachment F of the CEMP: ERAPs - Spoil Management

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Spoil Mitigation	6.3 a	Examples of spoil mitigation measures include: i. Implementing the spoil re-use hierarchy; ii. Handling spoil to minimise potential for air or water pollution; and iii. Minimise traffic impacts associated with spoil removal.	LORAC	Attachment F of the CEMP: ERAPs - Spoil Management
CEMF	Groundwater Management Objectives	7.1	a. The following groundwater management objectives will apply to construction: i. Reduce the potential for drawdown of surrounding groundwater resources; ii. Prevent the pollution of groundwater through appropriate controls; and iii. Reduce the potential impacts of groundwater dependent ecosystems. iv. For on-airport works, the Sydney Metro Western Sydney Airport Soil and Water CEMP will detail all the groundwater management objectives and will be consistent with the WSA Soil and Water CEMP, including all appendices to the CEMP.	LORAC	Attachment F of the CEMP: ERAPs - Soil and Water Quality Management
CEMF	Groundwater Management Implementation	7.2 a	For off-airport works, the following content may be provided within other sub plans such as the Soil and Water Management Plan and Flora and Fauna Management Plan. Groundwater management of on-airport works will be implemented through the groundwater management plan approved as part of the SMWSA Soil and Water CEMP. In particular the groundwater quality criteria will be in accordance to the WSA Soil and Groundwater CEMP Appendix G.	LORAC	Attachment F of the CEMP: ERAPs - Soil and Water Quality Management
CEMF	Groundwater Management Implementation	7.2 b	Principal Contractors will develop and implement a Groundwater Management Plan for off-airport works. The Groundwater Management Plan will include as a minimum: i. The groundwater mitigation measures as detailed in the planning approval documentation; ii. The requirements of any applicable licence conditions; iii. Details of proposed extraction, use and disposal of groundwater, and measures to mitigate potential impacts to groundwater sources, incorporating monitoring, impact trigger definition and response actions for all groundwater sources potentially impacted by SMWSA; iv. Evidence of consultation with the relevant government agencies, such as DPHI for off-airport works or land; v. The responsibilities of key project personnel with respect to the implementation of the plan; vi. Procedures for the treatment, testing and discharge of groundwater from the site; vii. Compliance record generation and management; and viii. Details of groundwater monitoring if required.	LORAC	No impacts to groundwater are anticipated due to the limited interaction with groundwater expected to occur, not considered applicable to FSM. Groundwater will be managed in accordance with Attachment F of the CEMP: ERAPs - Soil and Water Quality Management.

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Groundwater Mitigation	7.3 a	The on-airport Soil and Water CEMP (with the groundwater management plan) and the off-airport Groundwater Management Plan will include the following groundwater mitigation measures as well as relevant Conditions: i. Implementing all feasible and reasonable measures to limit groundwater inflows to stations and crossovers; and ii. Undertaking groundwater monitoring during construction (levels and quality) in areas identified as 'likely' and 'potential' groundwater dependent ecosystems.	LORAC	No impacts to groundwater are anticipated due to the limited interaction with groundwater expected to occur, not considered applicable to FSM. Groundwater will be managed in accordance with Attachment F of the CEMP: ERAPs - Soil and Water Quality Management.
CEMF	Construction Noise and Vibration Management Objectives	8.1 a	The following noise and vibration management objectives will apply to construction: i. Minimise unreasonable noise and vibration impacts on residents and businesses; ii. Avoid structural damage to buildings or heritage items as a result of construction vibration; iii. Undertake active community consultation; iv. Maintain positive, cooperative relationships with schools, childcare centres, local residents and building owners; and v. For on-airport works, the Sydney Metro Western Sydney Airport Noise and Vibration CEMP will detail all the noise and vibration management objectives and will be consistent with the WSA Noise and Vibration CEMP, including all appendices to the CEMP.	LORAC	Attachment F of the CEMP: ERAPs - Noise and Vibration

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Construction Noise and Vibration Management Implementation	8.2 a	On-airport management of noise and vibration will be achieved through the implementation of the SMWSA Noise and Vibration CEMP and Principal Contractors will develop and implement a Construction Noise and Vibration Management Plan for all off-airport works consistent with the Interim Construction Noise Guidelines (Department of Environment and Climate Change, 2009). Both plans will include as a minimum: i. Identification of work areas, site compounds and access points; ii. Identification of sensitive receivers and relevant construction noise and vibration goals; iii. Be consistent with and include the requirements of the noise and vibration mitigation measures as detailed in the planning approval documentation and the Sydney Metro Construction Noise and Vibration Standard (CNVS), including the provision of respite; iv. Details of construction activities and an indicative schedule for construction works, including the identification of key noise and/or vibration generating construction activities (based on representative construction scenarios) that have the potential to generate noise or vibration impacts on surrounding sensitive receivers, in particular residential areas; v. Identification of feasible and reasonable procedures and mitigation measures to ensure relevant vibrations and blasting criteria are achieved, including a suitable blast program; vi. The requirements of any applicable licence or approval (for example EPL); vii. Additional requirements in relation to activities undertaken 24 hours of the day, 7 days per week; viii. Pre-construction compliance requirements and hold points; ix. The responsibilities of key project personnel with respect to the implementation of the plan; x. Noise monitoring requirements; xi. Compliance record generation and management; and xii. An Out of Hours Works Protocol applicable to all construction methods and sites.	LORAC	Attachment F of the CEMP: ERAPs - Noise and Vibration
CEMF	Construction Noise and Vibration Management Implementation	8.2 b	Detailed Construction Noise and Vibration Impact Statements will be prepared for noise-intensive construction sites and or activities to ensure the adequacy of the noise and vibration mitigation measures. Specifically, Construction Noise and Vibration Impact Statements will be prepared for works proposed to be undertaken outside of standard construction hours and to support applications to undertake out of hours works (this includes variations of EPLs and applications to relevant agencies).	LORAC	Noted LORAC DNVIS for FSM works (Attachment S)

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Construction Noise and Vibration Management Implementation	8.2 c	Noise and vibration monitoring would be undertaken for construction as specified in the CNVS.	LORAC	Attachment F of the CEMP: ERAPs - Noise and Vibration
CEMF	Construction Noise and Vibration Management Implementation	8.2 d	The following compliance records would be kept by Principal Contractors: i. Records of noise and vibration monitoring results against appropriate NMLs and vibration criteria; and ii. Records of community enquiries and complaints, and the Contractor's response	LORAC	Attachment F of the CEMP: ERAPs - Noise and Vibration
CEMF	Construction Noise and Vibration Mitigation	8.3 a	All feasible and reasonable mitigation measures would be implemented in accordance with the CNVS. The on-airport Noise and Vibration CEMP and the off-airport Noise and Vibration Management Plan will include the following noise and vibration mitigation measures as well as relevant Conditions: i. Construction hours will be in accordance with the working hours specified in Section 5.1; ii. Hoarding and enclosures will be implemented where required to minimise airborne noise impacts; and iii. The layout of construction sites will aim to minimise airborne noise impacts to surrounding receivers iv. Provision of respite periods.	LORAC	Attachment F: ERAPs - Noise and Vibration Attachment S: DNVIS
CEMF	Heritage Management Objectives	9.1 a	The following heritage management objectives will apply to construction: i. Embed significant heritage values through any architectural design, education or physical interpretation; ii. Minimise impacts on items or places of heritage value; iii. Avoid accidental impacts on heritage items; iv. Maximise worker's awareness of indigenous and non-indigenous heritage; and v. For on-airport works, the Sydney Metro Western Sydney Airport Aboriginal Cultural Heritage CEMP and the European and Other Heritage CEMP will detail all the heritage management objectives and will be consistent with the WSA Aboriginal Cultural Heritage CEMP and European and Other Heritage CEMP, including all appendices to these CEMP documents.	LORAC	Attachment R of the CEMP: Heritage Management Procedure

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Heritage Management Implementation	9.2 a	On-airport management of Aboriginal cultural heritage and European heritage will be achieved through the implementation of the SMWSA Aboriginal Cultural Heritage and the European and Other Heritage CEMPs .Principal Contractors will develop and implement a Heritage Management Plan for all off-airport works. Plans will include as a minimum: i. Evidence of consultation with Registered Aboriginal Parties and the NSW Heritage Council; ii. Identify initiatives that will be implemented for the enhancement of heritage values and minimisation of heritage impacts, including procedures and processes that will be used to implement and document heritage management initiatives; iii. The heritage mitigation measures as detailed in the planning approval documentation; iv. The responsibilities of key project personnel with respect to the implementation of the plan; v. Procedures for interpretation of heritage values uncovered through salvage or excavation during detailed design; vi. Procedures for undertaking salvage or excavation of heritage relics or sites (where relevant), consistent with and any recordings of heritage relics prior to works commencing that would affect them; vii. Details for the short and / or long term management of artefacts or movable heritage; viii. Details of management measures to be implemented to prevent and minimise impacts on heritage items (including further heritage investigations, archival recordings and/or measures to protect unaffected sites during construction works in the vicinity); ix. Procedures for unexpected heritage finds, including procedures for dealing with human remains; x. Heritage monitoring requirements; and xi. Compliance record generation and management.	LORAC	Attachment R of the CEMP: Heritage Management Procedure St Marys Railway Station, St Marys: Archival Recording Report, January 2022
CEMF	Heritage Management Implementation	9.2 b	The Contractor's regular inspections will include checking of Aboriginal and non-Aboriginal heritage mitigation measures.	LORAC	Attachment R of the CEMP: Heritage Management Procedure

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Heritage Management Implementation	9.2 c	Compliance records will be retained by the Contractor. These will include: i. Inspections undertaken in relation to heritage management measures; ii. Archival recordings undertaken of any heritage item; iii. Unexpected finds and stop work orders; and iv. Records of any impacts avoided or minimised through design or construction methods.	LORAC	Attachment R of the CEMP: Heritage Management Procedure St Marys Railway Station, St Marys: Archival Recording Report, January 2022
CEMF	Heritage Mitigation	9.3 a	The on-airport Aboriginal Cultural Heritage and European and Other Heritage CEMPs and the off-airport Heritage Management Plan will include the following mitigation measures as well as relevant Conditions: i. Induction courses for site workers will include training in the identification of Aboriginal artefacts and management of Aboriginal heritage values. ii. Any heritage item not affected by the works will be retained and protected throughout construction; iii. During construction undertake professional archaeological investigation, excavation, and reporting of any historical Indigenous heritage sites of state significance which will be affected. Reporting may be completed as construction progresses; iv. Undertake archival recordings of all non-Indigenous heritage items affected by the works prior to commencement of works; and v. Implement unexpected heritage find procedures for Indigenous and non-Indigenous heritage items.	Not Applicable	Not Applicable - no on-airport works
CEMF	Flora and Fauna Management Objectives	10.1 a	a. The following flora and fauna management objectives will apply to construction: i. Minimise impacts on flora and fauna; ii. Design waterway modifications and crossings to incorporate best practice principles; iii. Retain and enhance existing flora and fauna habitat wherever possible; iv. Appropriately manage the spread of weeds and plant pathogens; and v. For on-airport works, the Sydney Metro Western Sydney Airport Biodiversity CEMP will detail all fauna and flora management objectives and will be consistent with the WSA Biodiversity CEMP, including all appendices to the Biodiversity CEMP.	Not Applicable	Not Applicable

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Flora and Fauna Management Implementation	10.2 b	On-airport management of flora and fauna will be achieved through the implementation of the SMWSA Biodiversity CEMP and Principal Contractors will develop and implement a Flora and Fauna Management Plan for all off-airport works. Both plans will include as a minimum: i. The biodiversity mitigation measures as detailed in the planning approval documentation; ii. The responsibilities of key project personnel with respect to the implementation of the plan; iii. Procedures for the clearing of vegetation and the relocation of flora and fauna; iv. Details on the locations, monitoring program and use of nest boxes by fauna; v. Procedures for the demarcation and protection of retained vegetation, including all vegetation outside and adjacent to the construction footprint, and the protection of retained vegetation within the environmental conservation zone on the airport site; vi. Plans for impacted and adjoining areas showing vegetation communities; important flora and fauna habitat areas; locations where threatened species, populations or ecological communities have been recorded; vii. Vegetation management plan(s) for sites where native vegetation is proposed to be retained; viii. Identification of measures to reduce disturbance to sensitive fauna; ix. Rehabilitation details, including identification of flora species and sources, and measures for the management and maintenance of rehabilitated areas (including duration of the implementation of such measures); x. Weed and disease management measures focusing on early identification of invasive weeds and diseases. Protocols to address the effective management of these risks; xi. A procedure for dealing with unexpected threatened species identified during construction, including cessation of work and notification to the relevant government department for both on- and off-airport works. The procedure shall define how appropriate mitigation measures (including relevant relocation measures) and updating of ecological monitoring or off-set requirements; xii. Details on the methodology for vegetation mapping and survey; xiii. Ecological monitoring requirements; and xiv. Compliance record generation and management.	Not Applicable	Not Applicable

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Flora and Fauna Management Implementation	10.2 b	Principal Contractors would undertake the following ecological monitoring as a minimum: i. A pre-clearing inspection will be undertaken prior to any native vegetation clearing by a suitable qualified ecologist and the Contractor's Environmental Manager (or delegate). The pre-clearing inspection will include, as a minimum: Identification of hollow bearing trees or other habitat features; Identification of any threatened flora and fauna; A check on the physical demarcation of the limit of clearing; An approved erosion and sediment control plan for the worksite; and The completion of any other pre-clearing requirements required by any project approvals, permits or licences. ii. The completion of the pre-clearing inspection will form a HOLD POINT requiring sign-off from the Contractor's Environmental Manager (or delegate) and a qualified ecologist; and iii. A post clearance report, including any relevant Geographical Information System files, will be produced that validates the type and area of vegetation cleared including confirmation of the number of hollows impacted and the corresponding nest box requirements to offset these impacts.	Not Applicable	Not Applicable
CEMF	Flora and Fauna Management Implementation	10.2 c	The Principal Contractor's regular inspections will include a check on the ecological mitigation measures and project boundary fencing.	Not Applicable	Not Applicable
CEMF	Flora and Fauna Management Implementation	10.2 d	The following compliance records would be kept by the Principal Contractor: i. Records of pre-clearing inspections undertaken; ii. Records of the release of the pre-clearing hold point; and iii. Records of ecological inspections undertaken.	Not Applicable	Not Applicable

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Flora and Fauna Mitigation	10.3 a	The on-airport Biodiversity CEMP and the off-airport Flora and Fauna Management Plan will include the following flora and fauna mitigation measures as well as any relevant Conditions: i. Areas to be retained and adjacent habitat areas will be fenced off prior to works to prevent damage or accidental over clearing; ii. Clearing will follow a two-stage process as follows: Non-habitat trees will be cleared first after sign-off of the pre-clearing inspection; and Habitat trees will be cleared no sooner than 48 hours after non-habitat trees have been cleared. A suitably qualified ecologist will be present on site during the clearing of habitat trees. Felled habitat trees will be left on the ground for 24 hours or inspected by the ecologist prior to further processing. iii. Weed management is to be undertaken in areas affected by construction prior to any clearing works. Off-airport weed management will be undertaken in accordance with the NSW Noxious Weeds Act 1993. On-airport weed management will also be undertaken in accordance with the NSW Noxious Weeds Act 1993 and the NSW Biosecurity Act 2015, which is consistent with the approach adopted in the Western Sydney Airport Weed and Disease Management Plan (Appendix C of the Western Sydney Airport Biodiversity CEMP).	Not Applicable	Not Applicable
CEMF	Visual amenity Management Objectives	11.1 b	The following visual and landscape management objectives will apply to the construction of the project: i. Minimise impacts on existing landscape features as far as feasible and reasonable; ii. Ensure the successful implementation of the Landscape Design; iii. Reduce visual impact of construction to surrounding community; and iv. For on-airport works, the Sydney Metro Western Sydney Airport Visual and Landscape CEMP will detail all the visual amenity and landscaping management objectives and will be consistent with the WSA	LORAC	Attachment F of the CEMP: ERAPs - Visual Amenity

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Visual amenity Management Implementation	11.2 a	On-airport management of visual and landscaping will be achieved through the implementation of the SMWSA Visual and Landscape CEMP and Principal Contractors will develop and implement a Visual Amenity Management Plan for all the off-airport temporary works which will include as a minimum: i. The visual mitigation measures as detailed in the planning approval documentation for construction; ii. Input from an experienced Landscape or Urban Designer; iii. The maintenance of outward facing elements of site hoarding or noise barriers, including the removal of graffiti and weeds; iv. Apply the principles of Australian Standard 4282-1997 Control of the obtrusive effects of outdoor lighting and relevant safety design requirements and detail mitigation measures to minimise lighting impacts on sensitive receivers for all permanent, temporary and mobile light sources; v. Identify the processes and procedures that will be used for the incorporation of the principles of Crime Prevention Through Environmental Design (CPTED) in the design and construction of any temporary site facilities; and vi. Compliance record generation and management.	Not Applicable	Not Applicable - no on-airport works
CEMF	Visual amenity Management Implementation	11.2 b	Visual and landscape measures will be incorporated into the Principal Contractor's regular inspections including checking the health of retained vegetation around site boundaries, checking the condition of any site hoarding and acoustic sheds, and checking the position and direction of any sight lighting	LORAC	Attachment F of the CEMP: ERAPs - Visual Amenity
CEMF	Visual amenity Management Implementation	11.2 c	The Contractor will retain compliance records of any inspections undertaken in relation to visual and landscape measures	LORAC	Attachment F of the CEMP: ERAPs - Visual Amenity
CEMF	Visual Amenity Mitigation	11.3 a	The on-airport Visual and Landscape CEMP and the off-airport Visual Management Plan will include the following visual amenity mitigation measures as well as relevant Conditions: i. Wherever feasible and reasonable, vegetation around the perimeter of the construction sites will be maintained; ii. Existing vegetation not affected by the construction works will be retained; iii. Temporary construction works will be designed with consideration of urban design and visual amenity as per Section 4.4; and iv. Temporary site lighting, for security purposes or night works will be installed and operated in accordance with AS4282:1997 Control of the Obtrusive Effect of Outdoor Lighting.	LORAC	Attachment F of the CEMP: ERAPs - Visual Amenity

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Soil and Water Management Objectives	12.1 a	. The following soil and water management objectives will apply to construction: i. Minimise pollution of surface water through appropriate erosion and sediment control; ii. Minimise leaks and spills from construction activities; iii. Maintain existing water quality of surrounding surface watercourses; iv. Source construction water from non-potable sources, where feasible and reasonable; and v. For on-airport works, the Sydney Metro Western Sydney Airport Soil and Water CEMP will detail all the soil and water management objectives and will be consistent with the WSA Soil and Water CEMP, including all appendices to the CEMP.	LORAC	Attachment F of the CEMP: ERAP- Soil and Water Quality

CEMF	Soil and Water Implementation	12.2 a	a. On-airport management of soil and water will be achieved through the implementation of the SMWSA Soil and Water CEMP and Principal Contractors will develop and implement a Soil and Water Management Plan for all off-airport works. Both plans will include as a minimum: i. The soil and water mitigation measures as detailed in the planning approval documentation and sustainability requirements; ii. Details of construction activities and their locations, which have the potential to impact on water courses, storage facilities, stormwater flows, and groundwater; iii. Surface water and ground water impact assessment criteria consistent with the principles of the Australian and New Zealand Environment Conservation Council (ANZECC) guidelines for off-airport works and the Airports (Environment Protection) Regulations 1997 for on-airport works (with due consideration of the ANZECC guidelines); iv. Management measures to be used to minimise surface and groundwater impacts, including identification of water treatment measures and discharge points, details of how spoil and fill material required by the project will be sourced, handled, stockpiled, reused and managed; erosion and sediment control measures; salinity control measures and the consideration of flood events; v. A contingency plan, consistent with the NSW Acid Sulphate Soils Manual (EPA 1998), to deal with the unexpected discovery of actual or potential acid sulphate soils both on and off-airport lands. The plan must including procedures for the investigation, handling, treatment and management of such soils and water seepage; vi. Management measures for contaminated material (soils, water and building materials) and a contingency plan to be implemented in the case of unanticipated discovery of contaminated material, including asbestos, during construction; vii. A description of how the effectiveness of these actions and measures would be monitored during the proposed works, clearly indicating how often this monitoring would be undertaken, the locations where monitoring would take place, how the results of the monitoring would be recorded and reported, and, if any exceedance of the criteria is detected how any non-compliance can be rectified; viii. The requirements of any applicable licence conditions; ix. The responsibilities of key project personnel with respect to the implementation of the plan; x. Procedures for the development and implementation of Progressive Erosion and Sediment Control Plans; xi. Identification of locations where site specific Stormwater and Flooding Management Plans are required; and xii. Compliance record generation and management.	LORAC	Attachment F of the CEMP: ERAP- Soil and Water Quality

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Soil and Water Implementation	12.2 b	Principal Contractors will develop and implement Progressive Erosion and Sediment Control Plans (ESCPs) for all active worksites in accordance with Managing Urban Stormwater: Soils & Construction Volume 1 (Landcom, 2004) (known as the “Blue Book”). The ESCPs will be approved by the Contractor’s Environmental Manager (or delegate) prior to any works commencing (including vegetation clearing) on a particular site. Copies of the approved ESCP will be held by the relevant Contractor personnel including the Engineer and the Site Foreman.	LORAC	Attachment F of the CEMP: ERAP- Soil and Water Quality
CEMF	Soil and Water Implementation	12.2 c	ESCPs will detail all required erosion and sediment control measures for the particular site at the particular point in time and be progressively updated to reflect the current site conditions. Any amendments to the ESCP will be approved by the Contractor’s Environmental Manager (or delegate).	LORAC	Attachment F of the CEMP: ERAP- Soil and Water Quality
CEMF	Soil and Water Implementation	12.2 d	Principal Contractors will develop and implement Stormwater and Flooding Management Plans for the relevant construction sites. These plans will identify the appropriate design standard for flood mitigation based on the duration of construction, proposed activities and flood risks. The plan will develop procedures to ensure that threats to human safety and damage to infrastructure are not exacerbated during the construction period	LORAC	Attachment F of the CEMP: ERAP- Soil and Water Quality
CEMF	Soil and Water Implementation	12.2 e	Principal Contractors will undertake the following soil and water monitoring as a minimum: i. Weekly inspections of the erosion and sediment control measures. Issues identified would be rectified as soon as practicable; ii. Additional inspections will be undertaken following significant rainfall events (greater than 20 mm in 24 hours); and iii. All water will be tested (and treated if required) prior to discharge from the site in order to determine compliance with the appropriate approvals and licencing. No water will be discharged from the site without written approval of the Contractor’s Environmental Manager (or delegate). This is to form a HOLD POINT.	LORAC	Attachment F of the CEMP: ERAP- Soil and Water Quality
CEMF	Soil and Water Implementation	12.2	The following compliance records will be kept by the Principal Contractors: i. Copies of current ESCPs for all active construction sites; ii. Records of soil and water inspections undertaken; iii. Records of testing of any water prior to discharge; and iv. Records of the release of the hold point to discharge water from the construction site to the receiving environment.	LORAC	Attachment F of the CEMP: ERAP- Soil and Water Quality

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Soil and Water Implementation	12.2	The following water resources management objectives will apply to the construction of the project: i. Minimise demand for, and use of potable water; ii. Maximise opportunities for water re-use from captured stormwater, wastewater and groundwater; iii. Examples of measures to minimise potable water consumption include: Water efficient controls, fixtures and fittings in temporary facilities; Collecting, treating and reusing water generated in tunnelling operations, concrete batching and casting facility processes; Using recycled water or treated water from onsite sources in the formulation of concrete; Harvesting and reusing rainwater from roofs of temporary facilities; Using water from recycled water networks; Collecting, treating and reusing groundwater and stormwater; Using water efficient construction methods and equipment; and Providing designated sealed areas for equipment wash down.	LORAC	Attachment F of the CEMP: ERAP- Soil and Water Quality

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Soil and Water Mitigation	12.3 a	a. The on-airport Soil and Water CEMP and the off-airport Soil and Water Management Plan will include the following surface water and flooding mitigation measures as well as any relevant Conditions: i. Clean water will be diverted around disturbed site areas, stockpiles and contaminated areas; ii. Control measures will be installed downstream of works, stockpiles and other disturbed areas; iii. Exposed surfaces will be minimised, and stabilised / revegetated as soon feasible and reasonable upon completion of construction; iv. Dangerous good and hazardous materials storage will be within bunded areas with a capacity of 110 per cent of the maximum single stored volume; v. Chemicals will be stored and handled in accordance with relevant Australian standards such as: o AS 1940-2004 The storage and handling of flammable and combustible liquids o AS/NZS 4452:1997 The storage and handling of toxic substances o AS/NZS 5026:2012 The storage and handling of Class 4 dangerous goods o AS/NZS 1547:2012 On-site domestic wastewater management vi. Spill kits will be provided at the batch plants, storage areas and main work sites; vii. A protocol will be developed and implemented to respond to and remedy leaks or spills. viii. A remedial action plan and unexpected finds protocol would be established to facilitate the quarantining, isolation and remediation of contamination identified throughout the construction programme. Any asbestos identified on site would be managed in accordance with applicable regulatory requirements.	LORAC	Attachment F of the CEMP: ERAPs - Dangerous Goods
CEMF	Air Quality Management Objectives	13.1 a	The following air quality management objectives will apply to construction: i. Minimise gaseous and particulate pollutant emissions from construction activities as far as feasible and reasonable; ii. Identify and control potential dust and air pollutant sources; and iii. For on-airport works, the Sydney Metro Western Sydney Airport Air Quality CEMP will detail all the air quality management objectives and will be consistent with the WSA Air Quality CEMP including all appendices to the CEMP.	LORAC	Attachment F of the CEMP: ERAPs - Air Quality

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Air Quality Management Implementation	13.2 a	On-airport management of soil and water will be achieved through the implementation of the SMWSA Soil and Water CEMP and Principal Contractors will develop and implement an Air Quality Management Plan for all off-airport works. Both plans will include, as a minimum: i. The air quality mitigation measures as detailed in the planning approval documentation; ii. The requirements of any approval and applicable licence conditions; iii. Site plans or maps indicating locations of sensitive receivers and key air quality / dust controls; iv. The responsibilities of key project personnel with respect to the implementation of the plan; v. Air quality and dust monitoring requirements; and vi. Compliance record generation and management	LORAC	Attachment F of the CEMP: ERAPs - Air Quality
CEMF	Air Quality Management Implementation	13.2 b	Air quality and dust monitoring will involve the following as a minimum: i. Meteorological conditions will be monitored and appropriate responses will be organised and undertaken periodically by the Principal Contractor; ii. Regular visual monitoring of dust generation from work zones; and iii. Monitoring emissions from plant and construction vehicles to ensure they have appropriate emission controls and are being maintained correctly.	LORAC	Attachment F of the CEMP: ERAPs - Air Quality
CEMF	Air Quality Management Implementation	13.2 c	The following compliance records will be kept by the Principal Contractor: i. Records of any meteorological condition monitoring; ii. Records of any management measures implemented as a result of adverse, windy weather conditions; and iii. Records of air quality and dust inspections undertaken.	LORAC	Attachment F of the CEMP: ERAPs - Air Quality

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Air Quality Mitigation	13.3 a	The on-airport Air Quality CEMP and the off-airport Air Quality Management Plan will include the following air quality mitigation measures as well as any relevant Conditions: i. Plant and equipment will be serviced and maintained in good working order to reduce unnecessary emissions from exhaust fumes; ii. Plant and equipment to be switched off engines when not in use; iii. The avoidance the use of diesel or petrol powered generators and instead using mains electricity or battery powered equipment, where practicable; iv. Appropriate vehicle speeds on sealed and unsealed roads; v. Development and implementation of a construction logistics plan to manage the sustainable delivery of goods and materials; vi. Implementing measures to support and encourage sustainable travel for construction workers to and from the construction sites; vii. Water suppression will be used for active earthwork areas, stockpiles, unsurfaced haul roads and loads of soil being transported to reduce wind-blown dust emissions; viii. Wheel-wash facilities or rumble grids will be provided and used near the site exit points, as appropriate; and ix. Dust extraction and filtration systems will be installed for tunnel excavation works and deep excavation with limited surface exposure.	LORAC	Attachment F of the CEMP: ERAPs - Air Quality
CEMF	Waste Objectives	14.1 a	The following waste objectives will apply to construction: i. Minimise waste throughout the project life-cycle; ii. Waste management strategies for off-airport works will be implemented in accordance with the Waste Avoidance and Resource Recovery Act 2001 management hierarchy as follows: Avoidance of unnecessary resource consumption; Resource recovery (including reuse, reprocessing, recycling and energy recovery); and Disposal. iii. Consistent with the Western Sydney Airport Waste and Resource Construction Environmental Management Plan, waste management strategies for on-airport works will also be aligned with the NSW Waste Avoidance and Resource Recovery Strategy under the NSW Waste Avoidance and Resource Recovery Act 2001; and iv. For on-airport works, the Sydney Metro Western Sydney Airport Waste and Resources CEMP will detail all the waste management objectives and will be consistent with the WSA Waste and Resources CEMP including all appendices to the CEMP.	LORAC	Attachment F of the CEMP: ERAPs - Waste

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Waste Objectives	14.1 b	Targets for the recovery, recycling or reuse of construction waste, and beneficial reuse of spoil will be provided by the Principal Contractor.	LORAC	Attachment F of the CEMP: ERAPs - Air Quality
CEMF	Waste Implementation	14.2 a	On-airport management of waste and resources will be achieved through the implementation of the SMWSA Waste and Resources CEMP and Principal Contractors will develop and implement a Waste Management Plan for all off-airport works. Both plans will include as a minimum: i. The waste management mitigation measures as detailed in the planning approval documentation; ii. The responsibilities of key project personnel with respect to the implementation of the plan; iii. Waste management monitoring requirements; iv. A procedure for the assessment, classification, management and disposal of waste in accordance with Waste Classification Guidelines; and v. Compliance record generation and management	LORAC	Attachment F of the CEMP: ERAPs - Waste
CEMF	Waste Implementation	14.2 b	Principal Contractors will undertake the following waste monitoring as a minimum: i. Weekly inspections will include checking on the waste storage facilities on site; and ii. All waste removed from the site will be appropriately tracked from 'cradle to grave' using waste tracking dockets.	LORAC	Attachment F of the CEMP: ERAPs - Waste
CEMF	Waste Implementation	14.2 c	Principal Contractors will report all necessary waste and purchasing information to Sydney Metro as required for Sydney Metro to fulfil their WRAPP reporting requirements.	LORAC	Attachment F of the CEMP: ERAPs - Waste
CEMF	Waste Implementation	14.2 d	Compliance records will be retained by the Principal Contractors in relation to waste management including records of inspections and waste dockets for all waste removed from the site.	LORAC	Attachment F of the CEMP: ERAPs - Waste

Type	Condition Classification	Condition Reference	Description	Responsibility	Where it is Addressed
CEMF	Waste Mitigation	14.3	The on-airport Waste and Resources CEMP and the off-airport Waste Management Plan will include the following waste management mitigation measures as well as relevant Conditions: i. A central waste area (or areas) would be established, at which waste (including recyclables) would be stored or stockpiled. Stockpiles and bins would be appropriately labelled, managed and monitored till being removed from site; ii. All waste materials removed from the sites will be directed to an appropriately licensed waste management facility; iii. The use of raw materials (noise hoarding, site fencing, etc...) will be reused or shared, between sites and between construction contractors where feasible and reasonable; and iv. Recyclable wastes, including paper at site offices, will be stored separately from other wastes.	LORAC	Attachment F of the CEMP: ERAPs - Waste

Attachment Q: Water Reuse Strategy

Attachment Q: Water Reuse Strategy

1.0 Water Reuse During Construction

Water is recognised as a precious resource. Whenever feasible, our project aims to optimise the on-site reuse of water stored on-site instead of relying on potable (municipal) water sources. The Sydney Metro's Water Discharge and Reuse Procedure SM-17-00000098 governs both on-site reuse and off-site point source discharge. Currently, no discharge to stormwater is proposed. Should discharge to stormwater be deemed necessary during the ongoing planning, a Water Pollution Impact Assessment will be undertaken in accordance with MCoA 130.

Prior to any water reuse on the premises, the Project Environment Manager (or delegate) must approve that the water is suitable for either reuse or onsite discharge using the Sydney Metro Water Discharge or Reuse Approval Form SM-17-00000109 or a site-specific equivalent.

The site will have access to potable water through metered connections to the Sydney Water network. Throughout the construction phase, potable water will supply the site offices and amenities. The utilisation of non-potable water in place of potable water has been assessed in accordance with the FSM Sustainability Management Plan 150511-STM-PM-PLN-00003. The re-use of water will be determined based on workplace health and safety considerations, economic feasibility, relevant manufacturer or design specifications, and the availability and quality of water.

1.1 Project Requirements

A water reuse strategy is required by the Minister's Condition of Approval (CoA) E102. A description of compliance with the requirements of this CoA and where they are addressed in this strategy are described below in Table 24.

Table 24: CoA relevant to this strategy

Approval Requirement	Requirement	Reference
CoA E102	A Water Reuse Strategy must be prepared, which sets out options for the reuse of collected stormwater and groundwater during construction and operation. The Water Reuse Strategy must include, but not be limited to:	This document addresses the construction phase of the project.
a)	evaluation of reuse options;	Section 2.0
b)	details of the preferred reuse option(s), including volumes of water to be reused, proposed reuse locations and/or activities, proposed treatment (if required), and any additional licences or approvals that may be required;	Section 3.0 and Section 4.0
c)	measures to avoid misuse of recycled water as potable water;	Section 5.0
d)	consideration of the public health risks from water recycling	Section 6.0
e)	time frame for the implementation of the preferred reuse option	Section 3.0
	The Water Reuse Strategy must be prepared based on best practice and advice sought from relevant agencies, as required. The Strategy must be applied during construction. Justification must be provided to the Planning Secretary if it is concluded that no reuse options prevail. A copy of the Water Reuse Strategy must be made publicly available.	Section 6.0
	Contractor must achieve the following: [SM-WSA-FSM-PS-G-1050] (i) Potable and non-potable construction water to be monitored and reported on a monthly basis; [SM-WSA-FSM-PS-G-1051] (ii) Minimum 33% of all construction water to be from non-potable sources. [SM-WSA-FSM-PS-G-1052]	Section 3.0

2.0 Evaluation of reuse options.

Water reuse opportunities for the construction phase of the project have been evaluated below in table 25. Re-use opportunities have been summarised as either suitable, unsuitable and preferred.

Table 25: Evaluation of Re-use options

Source	Evaluation of re-use during construction	Justification
Surface water (stormwater)	Unsuitable	Due to the limited space on site there is no opportunity to develop a stormwater capture area therefore will not be captured for re-use.
Recycled water network	Unsuitable	No recycled water network exists within a feasible distance to the project.
Washdown water	Unsuitable	Given the small size of the site, there is limited need for washing down equipment therefore a designated washdown bay/area has not been developed.
Surface water (rainwater)	Preferred	Although the supply is highly variable the Project will capture and reuse rainwater from the compound roofing and open pits on the platformSee Table 26 for further detail. Rainwater harvest tanks have been used on other LOR projects and have been found to be successful.
Treated rainwater captured in excavation water / groundwater	Suitable (pending detailed design)	There is an opportunity to reuse water from excavations for some site-specific activities. The treatment and reuse of water from excavations will be investigated prior to reuse. See table 26 for further detail.

3.0 Preferred Reuse Options

Following an evaluation of potential reuse strategies in Table 25, the project has determined that the most practical and preferred water reuse source during construction is harvesting rainwater collected from the compound roofing. The volume of rainwater to be harvested through this method is highly dependent on weather conditions.

There is also potential to reuse rainwater captured within open excavations and groundwater ingress from piling and excavation activities. Table 26 below further details each reuse opportunity.

Table 26: Water Reuse Options and Activities.

Non potable water source	Available volume for reuse per annum	Re-use activities	Considerations / justifications	Implementation period
Rainwater	Estimated to be 0.45 ML rainwater based on mean annual historic precipitation at the nearby Penrith Lakes weather Station (I.D: 067113).	Water will be used for flushing toilets within compound.	Nine 2.5kl tanks will capture rainwater from the FSM site office during construction. The water will be reused and feed the toilets in the compound.	Rainwater collection and storage commenced following installation of the site office and will be in use until project completion which is planned for December 2026..
Rainwater collected within the open pits on site.	Variable depending on inclement weather	Water will be pumped from the platform to the site compound, where it can be used for one of the following: Option 1: Transfer the water into site	Two IBC tanks will be used as intermediary tanks for storage before the water is processed in two large 10,000ltr tanks. Option 1 & 2 are the preferred options but should these not be possible, option 3 or 4 will be implemented. Should option 3 not be suitable due to land saturation, option 4 will be	This system will be in place throughout the construction phase until the open pits are filled in.

		rainwater tanks (Non-Portable). Option 2: Dust suppression throughout site compound. Option 3: Slowly drip feed treated water into grass verge using Coir Logs & Geofabric. Process to be monitored by site team. Option 4: To be removed from site via Vac Truck should site rainwater tanks have no capacity or if grass verge is too saturated.	implemented. Please see attachment 1 for full details of rainwater water reuse and discharge options.	
Rainwater collection onsite treatment	Estimated to be0.45 ML rainwater based on mean annual historic precipitation at the nearby Penrith Lakes weather Station (I.D: 067113).	Water will be used for construction activities such as platform cleaning and dust suppression.	The rainwater collected in the nine 2.5kl tanks will be treated through an onsite UV Filtration Skid that treats the water to safe standards. After treatment, the water is classed as Class A non-potable water which is considered safe when even when aspirated.	This system has been in place since May 2024.

Footbridge St Marys Non-Potable Water Feasibility Assessment

Source	Economic	Environmental	Social	Other	Feasibility Outcome
Rainwater harvesting tanks to site sheds	$3,000 low cost (no need to re-do existing pipework)	Potable water saving	No Impact	No spatial constraints	A rainwater harvesting tank has been installed at FSM for the site sheds as it was deemed feasible due to no spatial constraints and a low cost as there was no need to re-do existing pipework. The water harvested is used for the site shed toilets.
Dust suppression	Low cost	Potable water saving	Health risk to the public if the water was sprayed into the air	Our water cart supplier is not able to supply non-potable water for dust suppression	A water storage tank was not deemed feasible at FSM due to spatial constraints and as such there would be no tank to store the non-potable water for dust suppression. P&M Galea were unable to supply non-potable water for the project as such non- potable water for dust suppression was not deemed to be feasible for FSM. It was also considered a social risk a potential health risk to the public if sprayed into the air. Water storage tanks used for the treatment of excavation related water is feasible and can be used for dust suppression.

Road sweeping	Low cost	Potable water saving	No Impact	Our water cart supplier is unable to supply non-potable water for road sweeping. There is no water tank at St Marys station either, therefore the project isn't able to store water.	Deemed unfeasible
Non-destructive excavation (NDD)	Low cost	Potable water saving	No Impact	Our water cart supplier is unable to supply non-potable water for NDD. There is no water tank at St Marys station either, therefore the project isn't able to store water.	Deemed unfeasible
Vehicle/equipment cleaning	Low cost	Potable water saving	No Impact	Water cart supplier was not able to supply non-potable water for vehicle cleaning. There is no water tank at St Marys station either, therefore the project isn't able to store water.	Deemed to be not feasible as it was out of the project's scope. P&M Galea (water cart supplier) was not able to replace potable with non-potable water.

On-site mixed concrete	No information on cost	Potable water saving	No Impact	"The mixes arrived on site pre-mixed with water. The concrete supplier was not able to source and substitute potable water with non-potable water.	On-site mixed concrete
UV Filtration Skid	Approx $20,000 for supply & install	Potable water saving	The water is safe to use for construction works even when aspirated, unlike non-potable water that is not treated.	Requires minor maintenance	Feasible

To comply with Particular Specification-01 requirement 1.6.3 (c) 'Contractor must not use potable water as a substitute for non-potable water where on-site or local sources of non-potable water are suitable for construction'. [SM-WSA-FSM-PS-G-1053]. The project team have undertaken the Non-Potable Water Feasibility Assessment above.

As noted in the Footbridge St Mary's Non-Potable Water Feasibility Assessment, in most instances, substituting for potable water for certain end uses is deemed unfeasible. Therefore, the project team will be reliant on the non-potable water savings from the rainwater harvesting tank. Laing O'Rourke anticipates the savings from the rainwater harvesting tank will be enough for the project to achieve Particular Specification-01 requirement 1.6.3 (b) (ii) 'Minimum 33% of all construction water to be from non-potable sources.' [SM-WSA-FSM-PS-G-1052].

4.0 Onsite Reuse

For onsite reuse, the following criteria specified in SM-17-00000098 Water Discharge and Reuse Procedure will be utilised:

- pH – 6.5 to 8.5;
- No visible oil and grease;
- No potential for water to leave the site boundary;
- No surface runoff will be generated from the reuse (reuse includes dust suppression, etc.);
- No potential for water to reach any watercourse;
- No visible fines (concrete washout water only); and
- Site specific turbidity criteria to be determined between Total Suspended Solids (TSS) and turbidity..

If water fails to meet the above criteria, it will be treated (e.g. acid/base solution) and re-tested where possible; failing that it will be disposed of off-site as liquid waste to a facility that is licensed to accept the waste.

5.0 Water Efficiency and Measures to Prevent Misuse

Laing O'Rourke are committed to minimising both total and potable water consumption during the construction phase. This will be facilitated by conducting a water balance study (refer to the Sustainability Management Plan) and identifying opportunities for water efficiency and reduction. Such opportunities include:

- Metering and monitoring potable and recycled water sources to identify and report water use trends and identify potential leaks.
- Selecting construction equipment with consideration for water efficiency and associated construction methods.
- Incorporating water-saving devices in areas such as toilets, hand basins, sinks, etc.
- If water does not meet the on-site reuse criteria, it will be temporarily stored within intermediate bulk containers (IBCs).
- Conducting toolbox training sessions and pre-start briefs to inform work crews about the water reuse system.

To comply with Particular Specification-01 requirement 1.6.3 (h) 'Contractor must ensure that water efficient construction methods are described in all construction method statements.' [SM-WSA-FSM-PS G-1061], Laing O'Rourke have prepared a Supply Chain Sustainability Action Plan as a sub-plan to the FSM Sustainability Management Plan. The Action Plan is to be completed in accordance with the Supply Chain Scope of Works to help describe how the supply chain will seek to ensure compliance with the sustainability requirements. Page 6 references PS 1.6.3. A screenshot of page 6 is provided below.

Supply Chain Sustainability Action Plan
Footbridge St Marys

3.2 Water Efficiency

Project Sustainability Documentation has objectives for reductions in water use and in the use of potable (drinking) water, for instance not using drinking water for tasks where non-potable water would be best to use – e.g. street sweeping / dust suppression.

Confirm initiatives in Table 3 below to meet the following requirements.

- The supply chain must not use potable/ drinking water as a substitute for non-potable water where on-site or local sources of non-potable water are suitable for use in the supply chain's activities and are available.
- All construction equipment requiring water is selected taking into account the water efficiency of the equipment and associated construction methodology.

The supply chain shall list the water efficient construction methods and confirm that these will be described in ALL construction method statements.

Table 3 Water Efficiency initiatives

Tasks requiring water	Actions to minimised / eliminate water use	Water source (potable / non potable)

5. 1 Monitoring & Reporting:

Potable and non-potable construction water will be monitored and reported monthly. In addition, all water brought to the project will be monitored and added to the project's water tacker. Data will be presented via the Sydney Metro Sustainability Reporting Template, which will be attached as an Appendix to the Monthly Client Report.

A screenshot of the Sydney Metro Reporting Tool demonstrates where the water data will be entered.

DATE	Project	ste to t)	Office Waste reused or recycled (t)	General Solid Waste disposed to landfill (t)	General Solid Waste reused or recycled (t)	Contaminated Waste disposed to landfill (t)	Contaminated Waste reused or recycled (t)	Steel (t)	Concrete (m3)	Percentage supplementary cementitous materials content (%)	Potable water (kL)	Non-potable water (kL)	Water Target (kL)

Water meters are installed on both the rainwater harvesting tank (non-potable) and on the main water supply (potable water). Please refer to Image 1 & 2 below demonstrating installation at FSM.

Image 1: Mains Water Supply Meter



Image 2: Rainwater Harvesting Tank Meter



6.0 Public Health

The project has taken into account the potential health risks associated with reusing treated water on-site. The reuse strategies outlined in Table 26 are designed to mitigate these risks. Additionally, measures such as clearly labelling non-potable infrastructure will prevent health risks to on-site workers and misuse of recycled water. According to NSW Health, all forms of household wastewater may pose a risk to human health and the environment:

https://www.health.nsw.gov.au/environment/water/Pages/wastewater.aspx

Because of the risk associated with these household types of wastewaters, these potable streams will not be reused on the Project. As the public will not come into contact with treated or reused water under the system, the public health risks are considered negligible, and any further advice from relevant agencies was not required.

7.0 Concrete and Asphalt

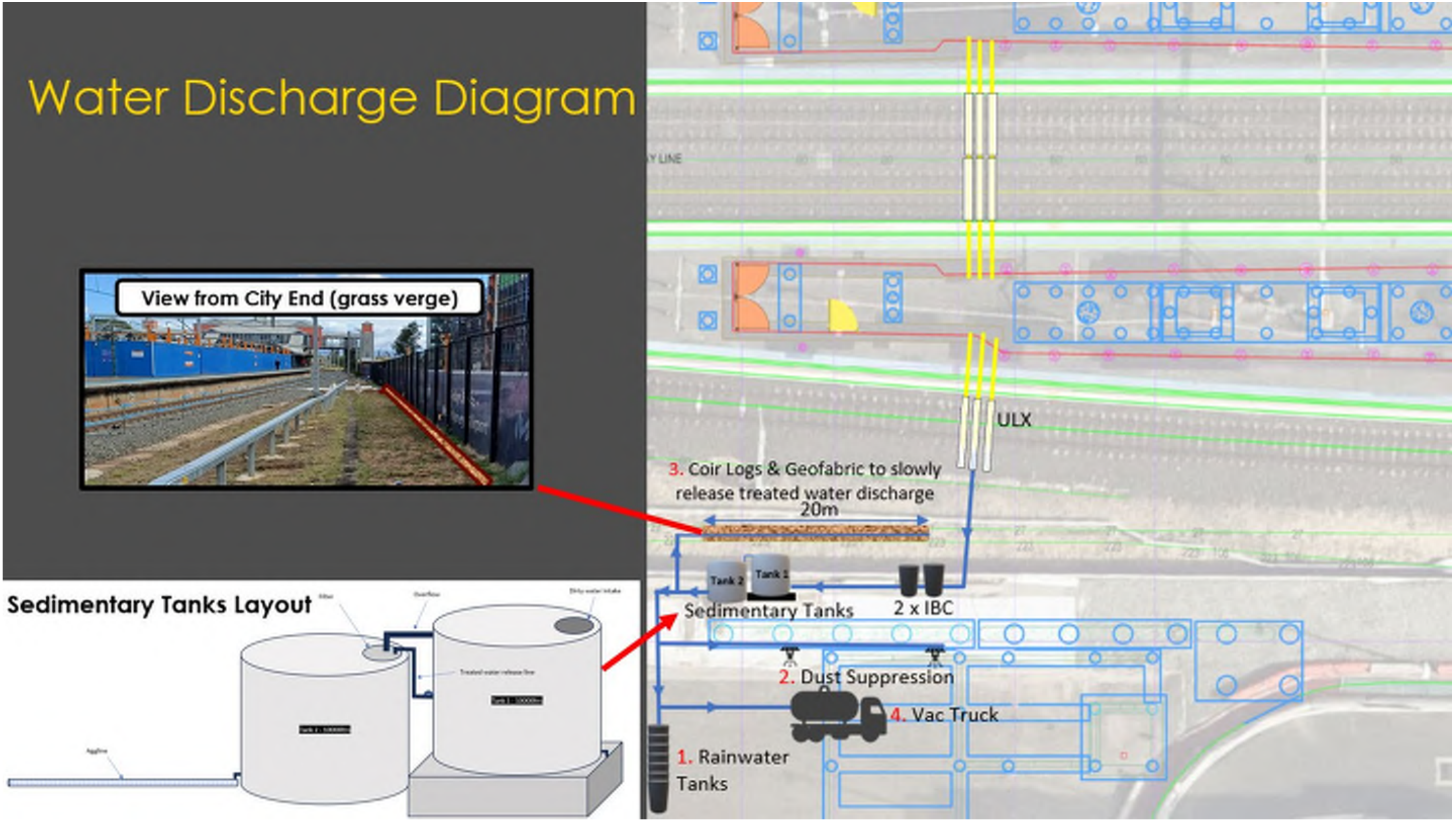
Concrete and asphalt will arrive to site pre-mixed and the use of non-potable water for batching plant production will be encouraged. Concrete and asphalt suppliers will be encouraged to use recycled water wherever possible. Given these occur at offsite facilities, this is not addressed further by this strategy.

In relation to the contract requirement “Suspended solid content of recycled concrete production water must be controlled such that the water density is less than 1.01g/mL and the suspended solids content does not exceed 15,000ppm. Contractor is expected to pass this requirement down through its supply chain. [SM-WSA-FSM-PS-G-1059]” this requirement has been passed through to the supply chain via the scope of works. In order to ensure this requirement is met, the project team have received water test data from potential manufactures – Boral & Holcim and note that the water tests are compliant with the requirement above and water tests are completed monthly by the manufacturer in line with B80 concrete requirements.

8.0 Conclusion

The FSM Project is committed to using non-potable water sources whenever they are available and fit for purpose. As detailed in Section 3, the preferred reuse strategy is to reuse rainwater stored in tanks for the flushing of site compound toilets. The adoption of rainwater reuse will reduce the use of potable water on the project. Water reuse from treated excavation works associated rainwater will increase reuse options and can be used for non-potable water and dust suppression. As the project progresses, LOR will further explore potential water reuse options for the project. Considering the limited water reuse options currently proposed for the project, the management of health risks aligns with industry best practices. It will be subject to review in response to any future changes to the proposed water reuse strategie

Attachment 1 - Details of rainwater water reuse and discharge options.



Water Discharge Process on FSM

Intake – Sedimentary Tanks

- Untreated water travels from platforms through ULX to IBC's
- Pump water from IBC tanks to Sedimentary Tanks using a submersible pump
- Empty Vac Truck water to Sedimentary Tanks

Water to be managed in the following ways:

- Options 1-3 must meet the criteria for discharge to land (section 4.6.2) and criteria for reuse on site (section 4.7.1) of the Sydney Metro Water Discharge & Reuse Procedure and will occur under a Water Discharge Approval issued by the LORAC Environmental Team prior to discharge commencing.
- All water will be treated with flocculant in sedimentary tank 1 and treated for pH in sedimentary tank 2.
- ➢ Option 1: Transfer the water into site rainwater tanks (Non-Portable).
- ➢ Option 2: Dust suppression throughout site compound.
- ➢ Option 3: Slowly drip feed treated water into grass verge using Coir Logs & Geofabric. Visual inspection for oil or grease through sediment tank inspection hatch prior to discharge. Process to be monitored by site team.
- ➢ Option 4: To be removed from site via Vac Truck should site rainwater tanks have no capacity or if grass verge is too saturated.
- **Heavy sediments to be removed from tank by Vac Truck once capacity level is reached.

Water Discharge Flowchart



LOR Discharge Permit

(AU) MNNSCW - Water Discharge or Reuse Approval Form

Form Reference	F1.480558
Owned By	Vinnithan Vaseekaran (LORA Rail South)
Date	11/07/2024 15:48:16
Status	Opened
Project Name	J41 - St Marys Footbridge Upgrade
Project Reference	J41
Location	J41 - St Marys Footbridge Upgrade

Form Location	J41 - St Marys Footbridge Upgrade

Details

Project	
Project No.	
Date:	

Location, Quantity of water and proposed action

#	Check Item	Result
1	Location of water to be removed:	
2	Reference No:	
3	Proposed Discharge/reuse: (Discharge to waters / Discharge to land / Reuse on site)	
4	Quantity (L)	
5	Details of discharge/reuse: (method, location, controls etc)	
	Approval request by:	

Test Method

#	Check Item	Result:	If NO state why:
1	Probe/meter : Equipment calibration prior to test:		
2	Grab sample: Test record/Laboratory report no:		
3	Equipment calibration prior to test:		
	Test record / Laboratory report No:		

Test results

#	Location (Specific description)	Date	Time	Is this a retest?	Oil & grease Visible (Y/N)	PH 6.5-8.5 Reading	TSS/Turbidity <50mg/L/ ____NTU1 Reading

#	Option 2 A,B,C,D,E	Notes, actions or treatment required

Test performed/sample collected by:

1. Criteria for turbidity must be determined from site specific correlation between TSS and turbidity -ref to SM ES-PW-309 Water Discharge and Reuse Procedure for details.
2. Select one: A= Remove to licensed facility B= Reuse on site C= Discharge to land D= Discharge to waters E= Treat and re-test

Option A: Remove to licensed facility

#	Check Item	Result
1	Water to be collected and removed from site by:	
2	Water to be transported to (name & location of the licensed facility):	

Option B: Re-use on site (including into holding pits/tanks,dust suppression)

#	Check Item	Result:	If it is NO, consider a different option
1	Re-use will be applied to an area that is effectively secured with appropriate downstream sediment controls and will not generate off-site run-off		

Option C: Discharge to land

#	Check Item	Result:	If it is NO, consider a different option.
1	Discharge location has complete ground cover, such that erosion will not occur, and sufficient infiltration capacity to receive quantity of water. (If YES, proceed to next question.)		
2	Will discharge generate any runoff or create the potential for runoff to reach any watercourse (on or offsite)?		

Option D: Discharge to waters

#	Check Item	Result:	If it is NO, consider a different option.
1	From visual inspection the quality of the water to be discharged is equally good or better than the quality of the receiving water?		
2	Flow from outlet can be directed onto a non-erodible surface and will not cause scouring or erosion.		
3	Could the water come into contact with any exposed soil or potential contaminants before it reaches the water course or discharge point?		

Option E: Treat the water then re-test

#	Check Item	Result
1	Location to be treated (if not in situ)	
2	Parameter (s) to be treated	
3	Detail the treatment to be used including products, quantities and methodology	

Authorised by Environmental Manager:

By signing this form the signatory confirms water to be discharged meets the relevant criteria as specified in accordance with the SM ES-PW-309 Water Discharge and Reuse Procedure

Attachment R: Heritage Management Procedure



Sydney Metro Western Sydney Airport – Advanced and Enabling Works – Footbridge St Marys

Heritage Management Procedure

Report to Laing O'Rourke Australia Construction

May 2023

artefact

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CONTENTS

1.0 Introduction 1
1.1 Project background 1
1.2 Site location 1
1.3 Compliance matrix 1
2.0 Proposed works 12
2.1 Permanent works 12
2.2 Temporary works 12
3.0 Existing environment 14
3.1 Background reports 14
3.2 Aboriginal heritage 14
3.2.1 Aboriginal archaeological potential 14
3.2.2 Aboriginal archaeological management 15
3.3 Built heritage 15
3.3.1 Heritage items 15
3.3.2 Heritage significant fabric 16
3.4 Non-Aboriginal heritage 19
3.4.1 Non-Aboriginal archaeological potential 19
3.4.2 Non-Aboriginal archaeological management 21
4.0 Heritage management procedure 24
4.1 Aboriginal archaeological management 24
4.1.1 Aboriginal Cultural Heritage Assessment Report and Aboriginal Cultural Heritage Management Plan 24
4.1.2 Unexpected finds 24
4.1.3 Human remains 24
4.1.4 Clearance 25
4.1.5 Reporting 25
4.2 Built heritage management 25
4.2.1 General 25
4.2.2 Design requirements 26
4.2.3 Heritage interpretation 26
4.2.4 Induction and Training 26
4.2.5 Exclusion zones 26
4.2.6 Vibration monitoring 27
4.2.7 Heritage architect 27
4.3 Non-Aboriginal archaeological management 33
4.3.1 Archaeological zoning 33

4.3.2 Archaeological management 33
4.3.3 Excavation directors 33
4.3.4 Unexpected finds 34
4.3.5 Human remains 34
4.3.6 Clearance 35
4.3.7 Storage of archaeological materials 35
4.3.8 Reporting 35
5.0 Appendix A 37

FIGURES

Figure 1: Overall plan of the planned FSM. Drawing no. SMWSAEDS-SMD-STM-AT-DRG-950052 (Source: Architectus) 13

Figure 2: Recommended Aboriginal archaeological management for St Marys as shown in the ACHMP (M2A 2021a: 37, Figure 4-1a) 17

Figure 3: Location of heritage curtilages relevant to the St Marys construction footprint 18

Figure 4: Significant non-Aboriginal archaeological potential at St Marys Station 22

Figure 5: Archaeological management zones at St Marys station 23

Figure 6: Preliminary site compound and laydown/stockpiling plan for the FSM works (LORAC 2022) 29

Figure 7: Preliminary platform hoarding plan for Stage 1 of the FSM works (Engineering Design Solutions 2022) 30

Figure 8: Preliminary platform hoarding plan for Stage 2 of the FSM works (Engineering Design Solutions 2022) 31

Figure 9: Preliminary site compound plan for the FSM works at St Marys Station (Engineering Design Solutions 2022) 32

TABLES

Table 1: Heritage compliance matrix 2
Table 2: Summary of heritage listings for St Marys Station 15
Table 3. Summary of significant fabric gradings at St Marys Station 16
Table 4. Summary of archaeological potential and significance at St Marys station 20

1.0 INTRODUCTION

1.1 Project background

The *Greater Sydney Region Plan*[1] sets the vision and strategy for Greater Sydney to become a global metropolis of three unique and connected cities: The Eastern Harbour City, the Central River City and the Western Parkland City. The Western Parkland City incorporates the future Western Sydney International and Aerotropolis. The Sydney Metro – Western Sydney Airport (the project) is a new metro line to be constructed and operated by Sydney Metro to connect Western Sydney International and the Aerotropolis with the broader Sydney rail network. The new line will connect the future Western Sydney Airport (Nancy-Bird Walton Airport) at Badgerys Creek with the Main Western Line at the St Marys terminus.

The project is identified in the *Greater Sydney Region Plan* as a key element to delivering an integrated transport system for the Western Parkland City. The project is located within the Penrith and Liverpool LGAs and involves the construction and operation of a new metro railway line around 23 kilometres in length between the T1 Western Line at St Marys in the north and the Aerotropolis in the south. This would include a section of the alignment which passes through and provides access to the future Western Sydney Airport (Nancy-Bird Walton Airport).

The project was declared as State Significant Infrastructure (SSI-10051) by the Minister for Planning and Environment under Section 5.25 of the *Environmental Planning & Assessment Act 1979*. The Minister's Conditions of Approval (CoA) for the project were granted on 23 July 2021.

Laing O'Rourke Australia Construction (LORAC) have been engaged by Sydney Metro to undertake advanced and enabling works (AEW) Footbridge St Marys (FSM) at St Marys Station, which is a portion of the Sydney Metro – Western Sydney Airport project.. To support the FSM works program, LORAC have engaged Artefact Heritage to prepare this Heritage Management Procedure. The Heritage Procedure identifies the relevant Project Approvals CoA and Revised Environmental Mitigation Measures (REMM), along with Construction Environmental Management Framework (CEMF) and staging report requirements, and how they are to be implemented for the works program to manage and mitigate potential impacts of the project.

1.2 Site location

This Heritage Management Procedure is relevant only to the St Marys Station Footbridge Portion of the Advanced and Enabling Works Program and does not apply to any other packages of work along the project alignment. The Footbridge St Marys works (FSM) covered by this Heritage Management Procedure are limited to the portion of the construction footprint around St Marys Station which is bounded by Station Street to the south and Forrester Road carpark to the north.

1.3 Compliance matrix

The project heritage conditions and how they are to be implanted during the FSM program are outlined in the compliance matrix below.

[1] Greater Sydney Commission 2018. *Greater Sydney Region Plan*.

Table 1: Heritage compliance matrix

Condition	Requirement	Reference	How addressed?
Conditions of Approval			
E19	The Proponent must not destroy, modify or otherwise physically affect any Heritage item not identified in documents referred to in Condition A1. Unexpected heritage finds identified by the CSSI must be managed in accordance with the Unexpected Heritage Finds and Human Remains Procedure outlined in Conditions E34 to E36. Consideration of avoidance and redesign to protect unexpected finds of state heritage significance must be addressed where this condition applies	Section 4.2.1 Section 4.1.2 Section 4.1.3 Section 4.3.4 Section 4.3.5 Appendix A	The FSM portion of the advanced and enabling works would only be undertaken within the curtilage of the State Heritage Register (SHR) listed St Marys Railway Station Group (SHR# 01249), which is included in the project documents. The Sydney Metro Unexpected Heritage Finds Procedure would be implemented for the FSM works
E20	The dismantling and reassembly of the jib crane at St Marys Station, if required, must only be undertaken under the supervision of a consultant experienced in the conservation of heritage machinery.	n/a	The jib crane is not to be removed under this scope of works. Additionally, the crane is not located close to the FSM works. Therefore, this requirement is not applicable to the FSM works.
E21	The St Marys Goods Shed must not be destroyed, modified or otherwise adversely affected, except as identified in the documents listed in Condition A1	n/a	This requirement is not applicable to the FSM works as such works will not be located in proximity to the Goods Shed.
E22	The Archaeological Research Design included in the documents listed in Condition A1 must be implemented during construction	Section 4.3.2	The Archaeological Research Design would be implemented during the FSM works program. No archaeological excavation works are anticipated to be completed during the FSM works
E23	Before commencement of archaeological excavation, the Proponent must, in consultation with Heritage NSW, nominate a suitably qualified Excavation Director, who complies with Heritage Council of NSW's Criteria for Assessment of Excavation Director (September 2019), to oversee and advise on matters associated with historical archaeology for the approval of the Planning Secretary. The Excavation Director must be present to oversee excavation, advise on archaeological issues, advise on the duration and extent of oversight required during archaeological excavations consistent with the Archaeological Research Design and Excavation Methodology(s) identified in the documents listed in Condition A1. More than one Excavation Director may be engaged for CSSI to exercise the functions required under the conditions of this approval.	Section 4.3.3	Excavations for the FSM Works will be limited to Archaeological Management Zone 2 which does not require archaeological investigation. Therefore, an Excavation Director is not required for the FSM works. A suitably qualified Excavation Director, who complies with Heritage Council of NSW's Criteria for Assessment of Excavation Director (September 2019), would be nominated in the event that a significant unexpected find is encountered

E24	Archival photographic digital recording must be undertaken for all listed heritage items which will be affected by the CSSI. The recordings must be undertaken prior to the commencement of Work which may impact the items and documented in an Archival Recording Report. The recordings must include buildings, structures and landscape features and detailed maps showing the location of features. The archival recording must be prepared in accordance with How to Prepare Archival Records of Heritage Items (NSW Heritage Office, 1998) and Photographic Recording of Heritage Items Using Film or Digital Capture (NSW Heritage Office, 2006).	Section 4.2.2	Archival photographic digital recordings of St Marys Railway Station Group have been completed for the project by Biosis (2022) Artefact Heritage (2022) in accordance with the relevant guidelines. Therefore, further archival recording is not required for the Footbridge construction work
E25	The Archival Recording Report must be submitted to the Planning Secretary, relevant councils and Heritage NSW for information within 12 months of completing all work described in the documents listed in Condition A1 in relation to heritage items. Copies of the Archival Recording Report must also be provided to relevant local historical societies.	Section 4.2.2	Not applicable.
E26	Following completion of all work described in the documents listed in Condition A1 in relation to heritage items, a non-Aboriginal Archaeological Excavation Report including the details of further historical research either undertaken or to be carried out and archaeological excavations (with artefact analysis and identification of a final repository for finds) and addressing the research design, must be prepared in accordance with any guidelines and standards required by the Heritage Council of NSW and Heritage NSW.	Section 4.3.8	Excavations associated with the FSM works are limited to Archaeological management Zone 2, which is considered of nil to low potential to contain archaeological remains of local significance, which would be managed under the Sydney Metro Unexpected Finds Procedure. If archaeological remains are encountered during the course of the FSM works a non-Aboriginal Archaeological Excavation Report would be prepared.
E27	The non-Aboriginal Archaeological Excavation Report must be submitted to the Planning Secretary, relevant councils and Heritage NSW for information within 12 months of completing all Work described in the documents listed in Condition A1 in relation to heritage items. Copies of the Report must also be provided to relevant local historical societies and local libraries.	Section 4.3.8	If a non-Aboriginal Archaeological Excavation Report is required it would be submitted to the Planning Secretary, Heritage NSW, and relevant councils, local historical societies and local libraries for information within 12 months of completing all work
E28	All reasonable steps must be taken so as not to harm, modify or otherwise impact Aboriginal objects or places of cultural significance except as authorised by this approval	Section 4.1.1 Section 4.1.2	The project documents have not identified any Aboriginal sites or areas of Aboriginal archaeological potential at St Marys Station. Therefore, no Aboriginal objects or places are expected to be impacted.
E29	The Registered Aboriginal Parties (RAPs) must be kept regularly informed about the CSSI. The RAPs must continue to be provided	Section 4.1.1 Section 4.1.2	

	with the opportunity to be consulted about the Aboriginal cultural heritage management requirements of the CSSI throughout construction.		There are no Aboriginal archaeological sites in the FSM site. Where required, RAPs would be consulted about Aboriginal cultural heritage management.
E30	The Aboriginal Cultural Heritage Management Plan included in the documents listed in Condition A1 must be updated to include: a) a methodology for the completion of pedestrian surveys for all areas within the project footprint yet to be surveyed; b) procedures for undertaking further test excavation and, if necessary, salvage excavations prior to the commencement of works in areas subject to further test excavation; c) mapping that clearly outlines all areas yet to be subject to survey, test excavations, and salvage excavations; d) a procedure to update mapping following the completion of survey, test excavations, and salvage excavations that detail the archaeological works conducted across the project footprint; e) a procedure for updating the predictive model following the identification of new Aboriginal heritage items; and f) a procedure to report and update the effectiveness of the Aboriginal Cultural Heritage Management Plan following the completion of survey, test excavation activities or significant artefact finds. The updated Plan must be submitted to the Planning Secretary for information prior to works in areas identified for further test excavations. **Note:** Salvage excavations in the areas identified for salvage in documents in Condition A1, may occur prior to additional test excavations occurring.	Section 4.1.1	The ACHMP was updated by Sydney Metro. Updates to the ACHMP are outside the FSM scope.
E31	The updated Aboriginal Cultural Heritage Management Plan must be implemented for the duration of salvage activities and construction.	Section 4.1.1	There are no Aboriginal archaeological sites in the FSM site. The updated ACHMP will be implemented during construction.
E32	At the completion of Aboriginal cultural heritage test and salvage excavations, an Aboriginal Cultural Heritage Excavation Report(s) must be prepared by a suitably qualified person. The Aboriginal Cultural Heritage Excavation Report(s) must: a) be prepared in accordance with the Guide to Investigation, assessing and reporting on Aboriginal cultural heritage in NSW,	Section 4.1.5	No Aboriginal archaeological investigations are required at St Marys Station; therefore, an Aboriginal Cultural Heritage Excavation Report is not expected to be required. An Aboriginal Cultural Heritage Excavation Report would be prepared if unexpected Aboriginal objects are encountered during the FSM works.

	OEH 2011 and the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales, DECCW 2010; and b) document the results of the archaeological test excavations and any subsequent salvage excavations (with artefact analysis and identification of a final repository for finds). The RAPs must be given a minimum of 28 days to consider the report(s) and provide comments before the report(s) is finalised. The final report(s) must be provided to the Planning Secretary, Heritage NSW, the relevant Councils, Gandangara LALC and Deerubbin LALC, the RAPs and local libraries within 24 months of the completion of the Aboriginal archaeological excavations (both test and salvage).		
E33	Where previously unidentified Aboriginal objects or places of cultural significance are discovered, all work must immediately stop in the vicinity of the affected area. Works potentially affecting the previously unidentified objects or places must not recommence until Heritage NSW has been informed. The measures to consider and manage this process must be specified in the Unexpected Heritage Finds and Human Remains Procedure required by Condition E34 and include registration in the Aboriginal Heritage Information Management System (AHIMS), where required.	Section 4.1.2	The Sydney Metro Unexpected Heritage Finds Procedure would be implemented for the FSM works in the event that unidentified Aboriginal objects are discovered.
E34	An Unexpected Heritage Finds and Human Remains Procedure must be prepared to manage unexpected heritage finds (heritage items and values) in accordance with any guidelines and standards prepared by the Heritage Council of NSW or Heritage NSW.	Section 4.1.2 Section 4.3.4 Appendix A	The Sydney Metro Unexpected Heritage Finds Procedure and Exhumation Management Procedure would be implemented for the project.
E35	The Unexpected Heritage Finds and Human Remains Procedure must be prepared by a suitably qualified and experienced heritage specialist in consultation with the Heritage Council of NSW (with respect to non-Aboriginal cultural heritage) and in relation to Aboriginal cultural heritage, in accordance with the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010) and submitted to the Planning Secretary for information no later than one (1) month before the commencement of construction.	Appendix A	The Sydney Metro Unexpected Heritage Finds Procedure would be implemented for the project.

E36	The Unexpected Heritage Finds and Human Remains Procedure, as submitted to the Planning Secretary, must be implemented for the duration of construction. Where archaeological investigations have been undertaken as a result of Unexpected Finds notifications then a Final Archaeological Report must be provided in accordance with Heritage Council guidance and standard requirements for final reporting under Excavation Permits. **Note:** Human remains that are found unexpectedly during the carrying out of work may be under the jurisdiction of the NSW State Coroner and must be reported to the NSW Police immediately. Management of human remains in NSW is subject to requirements set out in the Public Health Act 2010 (NSW) and Public Health Regulation 2012 (NSW). Nothing in these conditions prevents separate procedures for the Unexpected Heritage Finds and Human Remains Procedure.	Section 4.1.2 Section 4.1.3 Section 4.3.4 Section 4.3.5 Appendix A	The Sydney Metro Unexpected Heritage Finds Procedure would be implemented for the project. The Sydney Metro Exhumation Management Plan has been completed by Sydney Metro and is outside the management of this document. The Sydney Metro Exhumation Plan would be implemented where required. If archaeological investigations are undertaken as a result of unexpected finds notifications, then a non-Aboriginal Archaeological Excavation Report or Aboriginal Cultural Heritage Excavation Report would be prepared
Revised Environmental Mitigation Measures			
NAH1	Potential moveable heritage items would be identified and assessed and a significant fabric salvage schedule would be prepared by an appropriately qualified and experienced heritage specialist for St Marys Railway Station, Bringelly RAAF Base, McGarvie-Smith Farm, and McMasters Farm. Significant fabric would only be salvaged if it can be salvaged in such a way that it can be reused and is likely to be able to be reused	n/a	Impacts at St Marys Railway Station would largely be limited to non-significant fabric and fabric of little significance, including the asphalt surface of Platform 3/4, and the 1990s awning at the western end of the Platform 3/4 Building. These elements are not suitable for salvage. Impacts to the 1990s awning, an element of little significance, would be minimal and would not include fabric suitable for salvage. It is not anticipated that any potential moveable heritage items would be impacted by the FSM works. Therefore, this requirement is not applicable to the FSM works
NAH2	Heritage advice would be sought to develop solutions to manage potential ground movement impacts to the St Marys Goods Shed	n/a	This requirement is not applicable to the FSM works as such works will not be located in proximity to the Goods Shed.
NAH3	Archival recording of heritage items which would be impacted or that would have their setting altered, would be carried out in accordance with the NSW Heritage Office's *Photographic Recording of Heritage Items Using Film or Digital Capture* (2006). The following items would be archivally recorded: • St Marys Railway Station • Luddenham Road Alignment	Section 4.2.2	Archival photographic digital recordings of St Marys Railway Station Group have been completed for the project by Biosis (2022) Artefact Heritage (2022) in accordance with the relevant guidelines. Therefore, further archival recording is not required for the Footbridge construction work

	• McMaster Farm • McGarvie-Smith Farm • Kelvin (the State Heritage listed curtilage) • Bringelly RAAF Base		
NAH5	Archaeological investigations would be undertaken in accordance with recommendations in the non-Aboriginal Archaeological Research Design	Section 4.3.2	The FSM excavation works at St Marys Station would be conducted under the Sydney Metro Unexpected Heritage Finds Procedure in accordance with the Archaeological Research Design
NAH6	The following heritage items would be monitored for potential vibration impacts during construction: • St Marys Railway Station Group • McGarvie Smith Farm • McMaster Farm	Section 4.2.6	Vibration monitoring controls would be implemented for the FSM works at St Marys Railway Station Group as required by the project DNVIS. Representative vibration monitoring is proposed to be completed at the St Marys Station, including during; • Ground compaction works • Construction of the new footbridge.
NAH9	If suspected human remains or unexpected items of potential heritage significance are discovered within the on-airport area, all activity would cease and the unexpected/chance finds requirements specified in the *Western Sydney Airport European and Other Heritage Construction Environmental Management Plan* would be followed	Section 4.3.4 Section 4.3.5	The Sydney Metro Unexpected Heritage Finds Procedure would be implemented for the project. The Sydney Metro Exhumation Management Plan has been completed by Sydney Metro and would be implemented where required
ONAH1	Design development for the project would endeavour to minimise adverse impacts to heritage buildings, elements, fabric, and heritage significant settings and view lines that contribute to the overall heritage significance of heritage items	Section 4.2.1 Section 4.2.2	Design development requirements have been considered as part of the preparation of a Statement of Heritage Impact (SoHI) titled 'Sydney Metro Western Sydney Airport Footbridge St Marys Station - FSM Stage 1 Design Report Statement of Heritage Impact' by Tony Brassil of Mott MacDonald for the Footbridge Portion of the Advanced and Enabling Works (FSM). Design development for the project will continue through the design process for the associated early and main FSM works to maintain the form, finishes and relationship to the setting and State listed site of the existing construction. Design will minimise removal of significant material and forms, with new works to be cohesive with and enhancing the cultural significance of the existing site.

ONAH2	The architectural design for the project would take account local heritage context and be sympathetic to local heritage character. This would include using sympathetic building materials, colours and finishes Design should aim to minimise visual impacts by ensuring that significant elements are not obstructed or overshadowed Design should adhere to the Sydney Metro – Western Sydney Airport Design Guidelines The Design Review Panel and Heritage Working Group would be consulted in regard to the design, form and material of new built structures that may impact heritage items	Section 4.2.1 Section 4.2.2	Design Review Panel and Heritage Working Group consultation for the design of FSM will be initiated for this project as part of FSM works. The architectural design of the proposed new footbridge at St Marys Station is to be informed by the heritage character and significance of the station. Such architectural design requirements have been considered as part of the preparation of the SoHI by Tony Brassil of Mott MacDonald. Design development including heritage impact assessments, consultation with The Design Review Panel and Heritage Working Group for the project will continue through the design process for the FSM works.
ONAH3	Consultation with the Heritage Council and relevant stakeholders would occur for the design of works that have the potential to impact State significant items including St Marys Railway Station	Section 4.2.1 Section 4.2.2	Consultation with the Heritage Council and relevant stakeholders is to be undertaken as part of the preparation of the SoHI prepared by Tony Brassil of Mott MacDonald. SoHI (is dated 2021) and it is recommended that this document is provided to Sydney Metro. Design development, including consultation with the Heritage Council and relevant stakeholders for the project will continue through the design process as required for the associated early and main FSM works.
ONAH6	Heritage inventory registers for heritage items modified by the project would be updated to document their change in condition following the completion of construction works for the project	Section 3.3.1	At end of the project the Section 170 Heritage and Conservation Register (heritage inventory register) will be updated. The register will be informed by a Conservation Management Plan.
ONAH7	An appropriately qualified and suitably experienced heritage architect would be engaged to provide input into design development at St Marys Station	Section 4.2.7	An appropriately qualified and suitably experienced heritage architect will be nominated to provide input into the design development for the FSM works.
AH1	Aboriginal stakeholder consultation would continue to be carried out in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (NSW Office of Environment and Heritage, 2010). Registered Aboriginal Parties would be provided with opportunities to participate in survey and testing in unverified areas of Aboriginal archaeological sensitivity, archaeological salvage works and unexpected find assessments (if required).	Section 4.1.1	The project documents have not identified any Aboriginal sites, culturally significant landforms (ie waterways) or areas of archaeological potential at St Marys Station. Therefore, no consultation is expected to be required as part of the FSM works, however consultation will be carried out in accordance with the condition by Sydney Metro.

AH2	Areas of unverified Aboriginal archaeological sensitivity would be subject to archaeological survey, if required, and test excavation prior to construction in accordance with the Aboriginal Cultural Heritage Management Plan	Section 4.1.1	No areas of unverified Aboriginal archaeological sensitivity have been identified at St Marys Station. Therefore, this requirement is not applicable to the FSM works.
AH5	All Aboriginal objects recovered from the construction footprint as a result of test excavation and salvage works would be appropriately secured and under the care of the archaeological consultant while options for their long-term management, as determined through consultation with Registered Aboriginal Parties, are being investigated	Section 4.1.2	No Aboriginal archaeological test excavation or salvage work is planned at St Marys Station. The Sydney Metro Unexpected Heritage Finds Procedure would be implemented for the project.
AH6	Aboriginal Heritage Information Management System site cards would be produced for all newly identified sites other than those identified on Commonwealth land. These should be submitted to the Aboriginal Heritage Information Management System Registrar as soon as practicable within one month of being identified. Newly identified sites within the revised boundaries of Defence Establishment Orchard Hills (Commonwealth land) would be reported to the Department of Defence to be managed in accordance with the relevant provisions of the *Defence Establishment Orchard Hills Heritage Management Plan*	Section 4.1.5	The Sydney Metro Unexpected Heritage Finds Procedure would be implemented for the project. Site cards would be produced in the event that an unexpected Aboriginal site is identified.
AH7	Aboriginal Site Impact Recording forms for sites subject to archaeological salvage would be submitted to the Aboriginal Heritage Information Management System register within one month of the completion of salvage works within their bounds	Section 4.1.5	The Sydney Metro Unexpected Heritage Finds Procedure would be implemented for the project. Site cards would be submitted within one month in the event that an unexpected Aboriginal site is identified
AH8	If any suspected human remains or unexpected Aboriginal cultural heritage objects are discovered within the on-airport area, all activity would cease and the unexpected finds protocol and discovery of human remains protocol specified in the *Western Sydney Airport Aboriginal Cultural Heritage Construction Environmental Management Plan* would be followed	Section 4.1.2 Section 4.1.3	The Sydney Metro Exhumation Management Plan has been completed by Sydney Metro and would be implemented where required. The Sydney Metro Unexpected Heritage Finds Procedure would be implemented for the project in the event that unexpected Aboriginal cultural heritage objects are discovered
AH9	Works within the bounds of existing Aboriginal Heritage Impact Permit areas should be undertaken in accordance with the conditions of those permits and with permission from the relevant Aboriginal Heritage Impact Permit holder. Works undertaken within the revised boundaries on Defence Establishment Orchard Hills (Commonwealth	Section 4.1.5	No Aboriginal Heritage Impact Permit areas have been identified at St Marys Station. Therefore, this requirement is not applicable to the FSM works.

	land) should be undertaken in accordance with the *Defence Establishment Orchard Hills Heritage Management Plan*		
AH10	Impacted Aboriginal Sites would be managed in accordance with the Aboriginal Cultural Heritage Management Plan	Section 4.1.1	There are no identified Aboriginal sites within the St Marys Station FSM works footprint. The Sydney Metro Unexpected Heritage Finds Procedure would be implemented for the FSM works in accordance with the Aboriginal Cultural Heritage Management Plan.
AH11	Measures would be implemented to ensure that Aboriginal sites located outside of the construction footprint, but within 100m of it, would not be affected by construction activities	Section 4.1.1	No Aboriginal sites have been identified within 100m of St Marys Station. Therefore, this requirement is not applicable to the FSM works.
AH12	An Archaeological Salvage Report detailing the results of the archaeological salvage program (including the results of any post-excavation analyses) would be completed within two years of the completion of the fieldwork component of the program. The Archaeological Salvage Report would be consistent with the best practice guidelines suggested by the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010) and the *Aboriginal Cultural Heritage Standards & Guidelines Kit* (NSW NPWS 1997)	Section 4.1.5	The Sydney Metro Unexpected Heritage Finds Procedure would be implemented for the FSM works. In the event that an unexpected Aboriginal site is identified an Archaeological Salvage Report would be prepared.
AH13	Measures to manage and protect the identified cultural values would be developed collaboratively through a consultation process with knowledge holders to inform construction planning and design development	Section 4.1.1	The project documents have not identified any Aboriginal sites or areas of archaeological potential at St Marys Station. Therefore, no consultation is expected to be required as part of the FSM works.
Construction Environmental Management Framework			
CEMF 8.1	The following noise and vibration management objectives will apply to construction: i. Minimise unreasonable noise and vibration impacts on residents and businesses; ii. Avoid structural damage to buildings or heritage items as a result of construction vibration; iii. Undertake active community consultation; iv. Maintain positive, cooperative relationships with schools, childcare centres, local residents and building owners; and v. For on-airport works, the Sydney Metro Western Sydney Airport Noise and Vibration CEMP will detail all the noise and vibration management objectives and will be consistent with	Section 4.2.6	Vibration monitoring controls would be implemented for the FSM works at St Marys Railway Station Group as required by the project DNVIS.

	the WSA Noise and Vibration CEMP, including all appendices to the CEMP		
CEMF 9.1 a	The following heritage management objectives will apply to construction: i. Embed significant heritage values through any architectural design, education or physical interpretation; ii. Minimise impacts on items or places of heritage value; iii. Avoid accidental impacts on heritage items; iv. Maximise worker's awareness of indigenous and non-indigenous heritage; and v. For on-airport works, the Sydney Metro Western Sydney Airport Aboriginal Cultural Heritage CEMP and the European and Other Heritage CEMP will detail all the heritage management objectives and will be consistent with the WSA Aboriginal Cultural Heritage CEMP and European and Other Heritage CEMP, including all appendices to these CEMP documents.	Section 4.1.2 Section 4.2.2 Section 4.2.5 Section 4.2.6 Section 4.3.4	The design development for the FSM works will consider the heritage values of St Marys Station. Procedures and protection measures will be put in place during the enabling works to minimise the risk of accidental impacts to St Marys Station or to archaeological remains. The FSM works are limited to the off-airport portion of the Sydney Metro project.
CEMF 9.2 b	The Contractor's regular inspections will include checking of Aboriginal and non-Aboriginal heritage mitigation measures	This document	The implementation of the heritage management procedures outlined in this document will be checked throughout the duration of the FSM works.
CEMF 9.2 c	Compliance records will be retained by the Contractor. These will include: i. Inspections undertaken in relation to heritage management measures; ii. Archival recordings undertaken of any heritage item; iii. Unexpected finds and stop work orders; and iv. Records of any impacts avoided or minimised through design or construction methods	Section 4.1.2 Section 4.2.2 Section 4.3.4	Compliance records relating to the FSM works at St Marys Station will be retained by the contractor.

2.0 PROPOSED WORKS

A summary of the activities associated with the FSM portion of the advanced and enabling works (AEW) construction phase is provided below. The layout of the FSM work site and proposed activities is shown in Figure 1.

2.1 Permanent works

The FSM works include permanent modifications and the installation of new infrastructure at St Marys Station, namely the new footbridge at the east end of the station. The FSM works are consistent with the scope approved under SSI-10051. The permanent new infrastructure and modifications to existing infrastructure include:

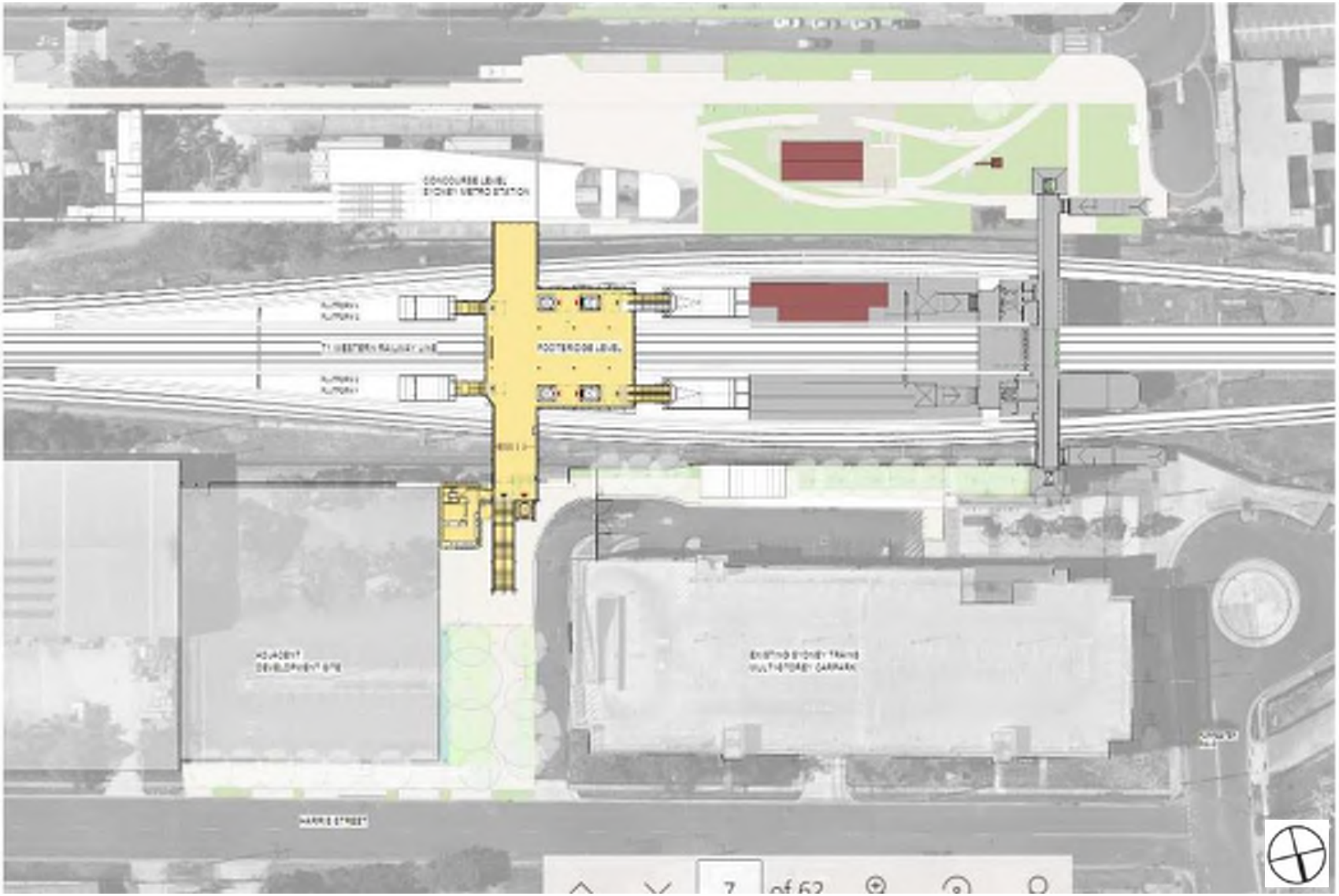
- Demolition and removal of all existing structures and services affected by the FSM Works
- Relocation of street furniture and bike racks
- Removal of a selection of trees and plantings Construction of new footbridge spanning the Sydney Trains T1 line
- Construction of vertical transportation comprising stairs, four (4) escalators and five (5) lifts
- Modifications to existing Sydney Trains assets to enable the construction of the footbridge including relocation of Guards Indicators, CCTV, PA, Overhead Wire System (OHWS), drainage and utility infrastructure, lighting, and platform furniture
- Replacement of awning at the western end of the Platform 3/4 Building and removal of the asphalt pavement of Platform 3/4 in discrete locations for footings
- Installation of associated new lighting, passenger information display system (PIDS), PA, CCTV design, ticketing, communications network equipment, ventilation, plumbing and hydraulic design (gutter and downpipes)
- Utility relocation or protection where impacted by the new works, including existing stormwater assts, communication (Optus, Telstra) assets, and Sydney Trains water supply
- Adjustments (as required to deliver the FSM works) within the rail corridor at St Marys in addition to any access improvements or other works undertaken
- Earthing, bonding protection and stray current mitigation
- Northern/Harris Street landscaping, plaza, bike storage, kerb side transport.

2.2 Temporary works

Activities associated with the FSM works that would be temporary in nature include:

- Installation of hoarding and fencing
- Removal of localised areas of paving for ground and service investigations
- Trimming of trees and plantings
- Temporary removal and reinstatement of street furniture
- Minor excavations within grassed areas
- Stockpile of materials within the site.

Figure 1: Overall plan of the planned FSM. Drawing no. SMWSAEDS-SMD-STM-AT-DRG-950052 (Source: Architectus)



3.0 EXISTING ENVIRONMENT

3.1 Background reports

The existing environment and heritage context of the project has been assessed in the following background reports prepared to support the Environmental Impact Statement (EIS) for the project:

- Artefact Heritage 2020. Sydney Metro – Western Sydney Airport. Technical Paper 4: Non-Aboriginal Heritage[2]
- M2A 2020. Sydney Metro – Western Sydney Airport. Technical Paper 5: Aboriginal Heritage[3]
- M2A 2021a. Sydney Metro – Western Sydney Airport: Revised Aboriginal Cultural Heritage Assessment Report[4]

Additional reports, which have been prepared for the project and have been used to support this document also include:

- Artefact Heritage 2021. Sydney Metro – Western Sydney Airport Archaeological Research Design (ARD)[5]
- M2A 2021b. Sydney Metro – Western Sydney Airport: Aboriginal Cultural Heritage Management Plan[6]
- Tony Brassil of Mott MacDonald 2021. Sydney Metro Western Sydney Airport: Footbridge St Marys Station – FSM Stage 1 Design Report Statement of Heritage Impact.[7]

These reports have been referenced to inform this document in regard to existing environment, heritage significance and archaeological potential.

3.2 Aboriginal heritage

3.2.1 Aboriginal archaeological potential

M2A prepared an Aboriginal Cultural Heritage Assessment Report (ACHAR)[8] and a Revised ACHAR[9] to identify Aboriginal sites and areas of Aboriginal archaeological potential along the project alignment. The ACHAR was prepared in consultation with the Registered Aboriginal Parties (RAPs). No previously recorded or newly identified Aboriginal sites were identified in the vicinity of St Marys Station. The ACHAR concluded that there were no areas of Aboriginal archaeological sensitivity within the St Marys construction footprint.

The overall findings for the St Marys construction site from the Revised ACHAR were that:

[2] Artefact Heritage, 2020. *Sydney Metro – Western Sydney Airport Technical Paper 4: Non-Aboriginal Heritage*.
[3] M2A, 2020a. *Sydney Metro – Western Sydney Airport Technical Paper 5: Aboriginal Heritage*.
[4] M2A, 2021a. *Sydney Metro – Western Sydney Airport: Revised Aboriginal Cultural Heritage Assessment Report*.
[5] Artefact Heritage, 2021. *Sydney Metro – Western Sydney Airport Archaeological Research Design*.
[6] M2A, 2021b. *Sydney Metro – Western Sydney Airport: Aboriginal Cultural Heritage Management Plan*.
[7] Mott MacDonald, 2021. *Sydney Metro Western Sydney Airport: Footbridge St Marys Station – FSM Stage 1 Design Report Statement of Heritage Impact*.
[8] M2A, 2020a.
[9] M2A, 2021a.

- *There are no registered AHIMS sites within the curtilage of the St Marys construction site. There are no AHIMS sites within 200 metres of the construction site.*
- *Based on the high levels of past disturbance in this construction site (including road corridors, rail corridor, the existing St Marys Station, buildings and services), no areas of archaeological sensitivity have been identified within its bounds.*
- *There are no known Aboriginal cultural values specifically associated with this construction site.*
- *No potential direct impacts to Aboriginal archaeological sites have been identified in this construction site. No specific cultural values have yet been identified in this construction zone.*[10]

3.2.2 Aboriginal archaeological management

The Aboriginal Cultural Heritage Management Plan (ACHMP) prepared for the project by M2A outlined that the St Marys construction site would be managed under the Sydney Metro Unexpected Heritage Finds Procedure (Figure 2).

It is not expected that the FSM works at St Marys Station would result in any impacts to Aboriginal objects or sites of cultural heritage significance.

3.3 Built heritage

3.3.1 Heritage items

The Footbridge portion of the Advanced and Enabling Works would largely be undertaken within St Marys Station. The station is a heritage item of state significance which is listed on the SHR, Transport Asset Holding Entity (TAHE – formerly RailCorp) s170 Register, and the Penrith Local Environmental Plan (LEP) 2010, each of which are statutory registers. EIS Technical Paper 4: Non-Aboriginal Heritage also identified two potential heritage items of local significance within the St Marys construction footprint which are located outside of the FSM works area. There is no Conservation Management Plan or other similar heritage planning document available for St Marys Station at this time. The Section 170 Heritage and Conservation Register (heritage inventory register) is managed by Transport Asset Holding Entity (TAHE). At end of the project the heritage inventory register will updated and informed by a Conservation Management Plan.

A summary of the relevant listings is provided in Table 2 below, and the curtilage of the heritage item is shown in Figure 3.

Table 2: Summary of heritage listings for St Marys Station

Listing register	Listing name	Listing ID	Significance
State Heritage Register[11]	St Marys Railway Station Group	SHR# 01249	State

[10] M2A, 2021a: 85 (Table 8-1).
[11] Heritage NSW, 2010. 'St Marys Railway Station Group'. *State Heritage Inventory.* Accessed online 16/03/2022 at: https://apps.environment.nsw.gov.au/dpcheritageapp/ViewHeritageItemDetails.aspx?id=501221

Listing register	Listing name	Listing ID	Significance
TAHE s170[12]	St Marys Railway Station Group	(SHI# 4801036)	State
Penrith LEP 2010[13]	St Marys Railway Station	Penrith LEP I282	Local
Potential item	Queen Street Post-War Commercial Building		Local
Potential item	St Marys Munitions Workers Housing		Local

3.3.2 Heritage significant fabric

There are several elements of significant fabric within St Marys Railway Station Group which were identified in EIS Technical Paper 4: Non-Aboriginal Heritage. The grading of significant fabric, is summarised in Table 3. Significant fabric within St Marys Station is considered both rare and representative, particularly the Goods Shed, which is one of the few structures of its type dating from the late nineteenth century in the NSW railway network.

Table 3. Summary of significant fabric gradings at St Marys Station

Element	Grading
Goods Shed (1880)	Exceptional
Platform 3/4 Building (1888)	Exceptional
Signal Box (1940s)	High
Jib Crane (1943, relocated c.1956)	High
Footbridge (1940s)	Little
Overhead Booking Office	Little
Modern platform canopies	Little
Platform 3/4 retaining wall	Moderate
Platform 1/2 retaining wall	Little

[12] Heritage NSW, 2016. 'St Marys Railway Station Group.' *State Heritage Inventory.* Accessed online 16/03/2022 at: https://apps.environment.nsw.gov.au/dpcheritageapp/ViewHeritageItemDetails.aspx?id=4801036
[13] Heritage NSW, 2006. 'St Marys Railway Station'. *State Heritage Inventory.* Accessed online 16/03/2022 at: https://www.hms.heritage.nsw.gov.au/App/Item/ViewItem?itemId=2260282.

Figure 2: Recommended Aboriginal archaeological management for St Marys as shown in the ACHMP (M2A 2021a: 37, Figure 4-1a)

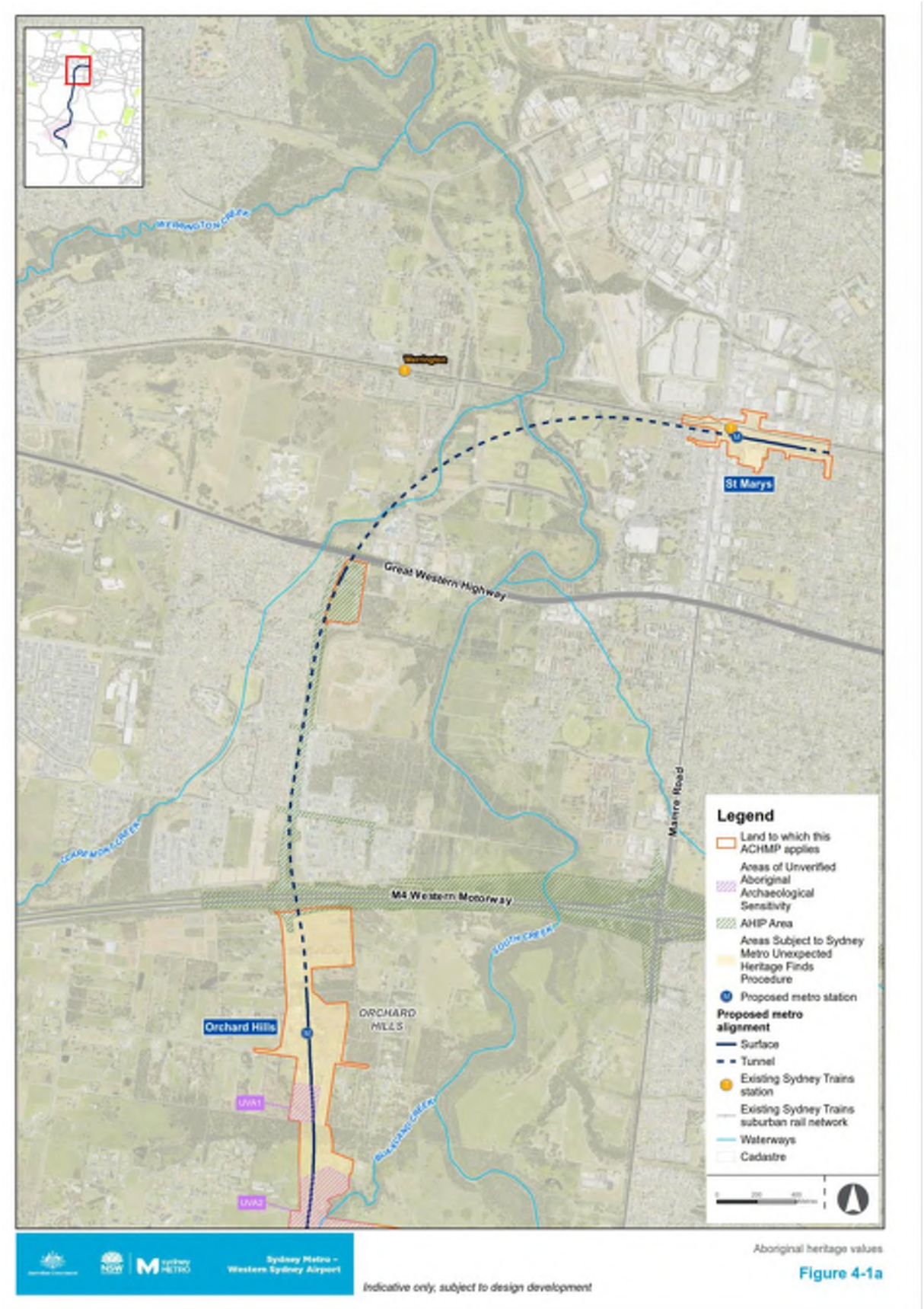
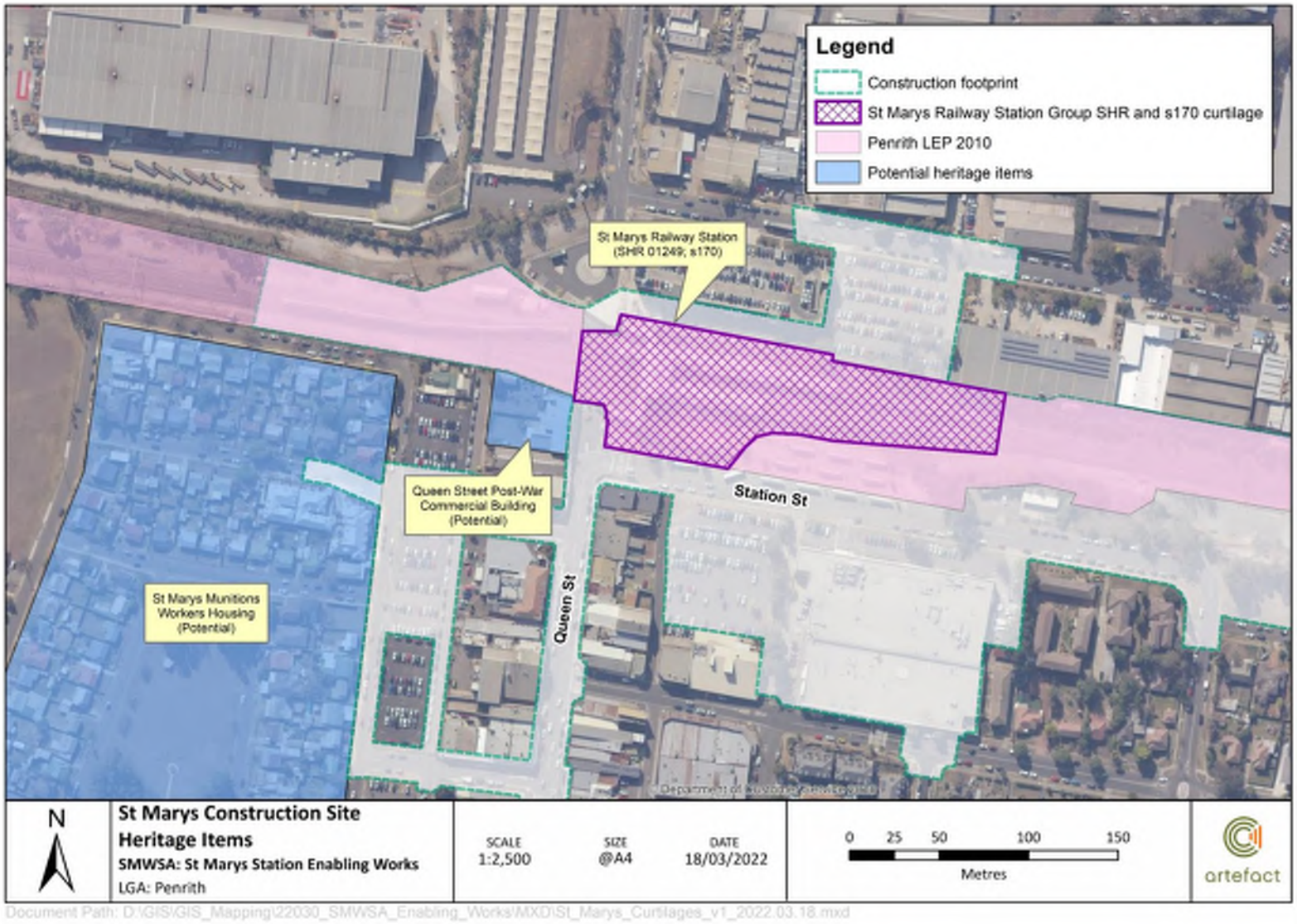


Figure 3: Location of heritage curtilages relevant to the St Marys construction footprint



3.4 Non-Aboriginal heritage

The FSM works would be undertaken at St Marys Station which the project ARD identified as containing areas of archaeological potential. Ground disturbing activities for the FSM works would impact the south area on Station Street, the north area adjacent Forrester Road, and the platforms for the construction of the new footbridge, lift and escalators. The ARD identified the south area as having a low-moderate archaeological potential associated with the Goods Shed and Goods Yard, whilst the platforms have a nil-low archaeological potential. A description of the relevant areas of non-Aboriginal archaeological potential and significance as outlined in the ARD is provided below.

3.4.1 Non-Aboriginal archaeological potential

St Marys Goods Yard

The Goods Shed and Goods Yard were constructed in 1880 at the southern side of the railway corridor. Potential archaeological remains in the area may include remnant railway tracks associated with the goods yard. Several support building structures are evident in 1943 aerial imagery of St Marys Railway Station, and appear to be sheds or storage locations, likely constructed of timber or brick. Potential remains may include stone, brick, or cement foundations. Artefact scatters may also be present. It is also highly likely that remnant railway beams and tracks are evident.

A 1956 plan of the Goods Yard and Goods Shed show several structures likely dating to the 1950s development of the station. A structure adjoined to the western end of the Goods Shed, featuring stairs abutting the south-western exterior Goods Shed wall appears to be a loading bank, associated with the Goods Yard railway tracks on the northern side of the Goods Shed and on the southern side of the main railway corridor. Historic photographs of the Goods Shed show the original ground surface at grade with the railway corridor, however it has now been raised for the construction of the plaza and bus interchange. A photograph from 1970 shows that the ground level was originally lower than current. It also shows that the loading bank was still extant at the time, accessible through the western door of the Goods Shed, and that it was constructed of timber.

Furthermore, the 1943 foundations of the jib crane are located immediately to the west of the loading bank structure. The Goods Yard track continued west, to the south of the extant footbridge, where a buffer stop – likely constructed of timber sleepers – was located. At the southern side of the current jib crane location was a weighbridge, and a loading stage, measuring 12 feet (3.65m) by 8 feet (2.4m) was located at the northern side of the crane. These structures are not evident in the 1943 aerial imagery, suggesting they were constructed in the 1950s.

Archaeological remains related to the St Marys Goods yard would consist of former concrete, brick and timber foundations and associated foundation cuts and fills, rail, ballast and sleepers, and isolated artefact deposits. Overall, there is **low to moderate** archaeological potential for remains associated with the St Marys Goods Yard to be present.

Excavations for the FSM works however would be limited to the area of archaeological potential associated with the general area of the Goods Yard, and would not extend into the area of potential associated with the Goods Shed. The archaeological potential of the general Goods Yard is considered to be **low** (Figure 4).

Former 1888 Platform Structures

St Marys Railway Station previously featured a platform building on Platform 1/2 which dated to 1942. The SHR listing for the St Marys Railway Station Group states that there is no evidence of the 1942 brick station building and that there is therefore low archaeological potential for remains of the building.

The 1943 aerial imagery shows an out-of-shed towards the eastern end of platform 3/4, which would most likely date to the 1880s when the Platform 3/4 Building was constructed. The out-of-shed may have been constructed of weatherboard timber with a corrugated metal roof, as seen at Katoomba Railway Station on the Main Western Railway Line. However, based on later photographs it appears to have been built in brick, as seen at Hazelbrook and Glenbrook Stations, also on the Main Western Line. This structure is visible in 1956 aerial imagery but absent by 1970. Platform regrading works may have resulted in the partial or complete truncation of any remains associated with the structure, likely limited to footings or foundations.

There is **low** archaeological potential for early to mid-twentieth century platform structures, likely limited to structural remains of former footings below the current platform.

Summary

A summary of archaeological potential and significance within the St Marys construction site is provided in Table 4. The archaeological activities relevant to the FSM works area are shaded grey. The location of areas of archaeological potential at St Marys Station is provided in Figure 4.

Table 4. Summary of archaeological potential and significance at St Marys station

Phase	Activity and remains	Potential	Significance
Phase 1 (1806 – 1862)	Evidence of early land grants, agricultural remains	Nil	Nil
Phase 2 (1863 - 1888)	First Railway Station – timber or brick footings, isolated artefact deposits	Nil to low	Possible local
	St Marys Goods Yard – brick, timber and concrete footings, isolated industrial or domestic artefact deposits.	Low	Local
	St Marys Goods Shed underfloor deposits – potentially stratified discarded domestic, workers and freight-related artefacts, including glass, ceramic, bone, paper or newspaper, as well as isolated industrial remnants.	Low to Moderate	Local
	Platform 1/2 building – brick footings	Low	Possible local
Phase 3 (1888 – 1942)	Commercial, industrial and residential remains – brick, timber or concrete footings, former yard surfaces, isolated artefact deposits.	Low	Nil
Phase 4 (1942 – present)	Modern concrete footings, kerbs, road surfaces, utility services	Moderate	Nil

3.4.2 Non-Aboriginal archaeological management

The ARD identifies the St Marys construction site as being comprised of Archaeological Management Zone (AMZ) 2. Ground disturbing works associated with the FSM works would be limited to AMZ 2 which is to be managed under the Sydney Metro Unexpected Heritage Finds Procedure (Figure 5).

Figure 4: Significant non-Aboriginal archaeological potential at St Marys Station

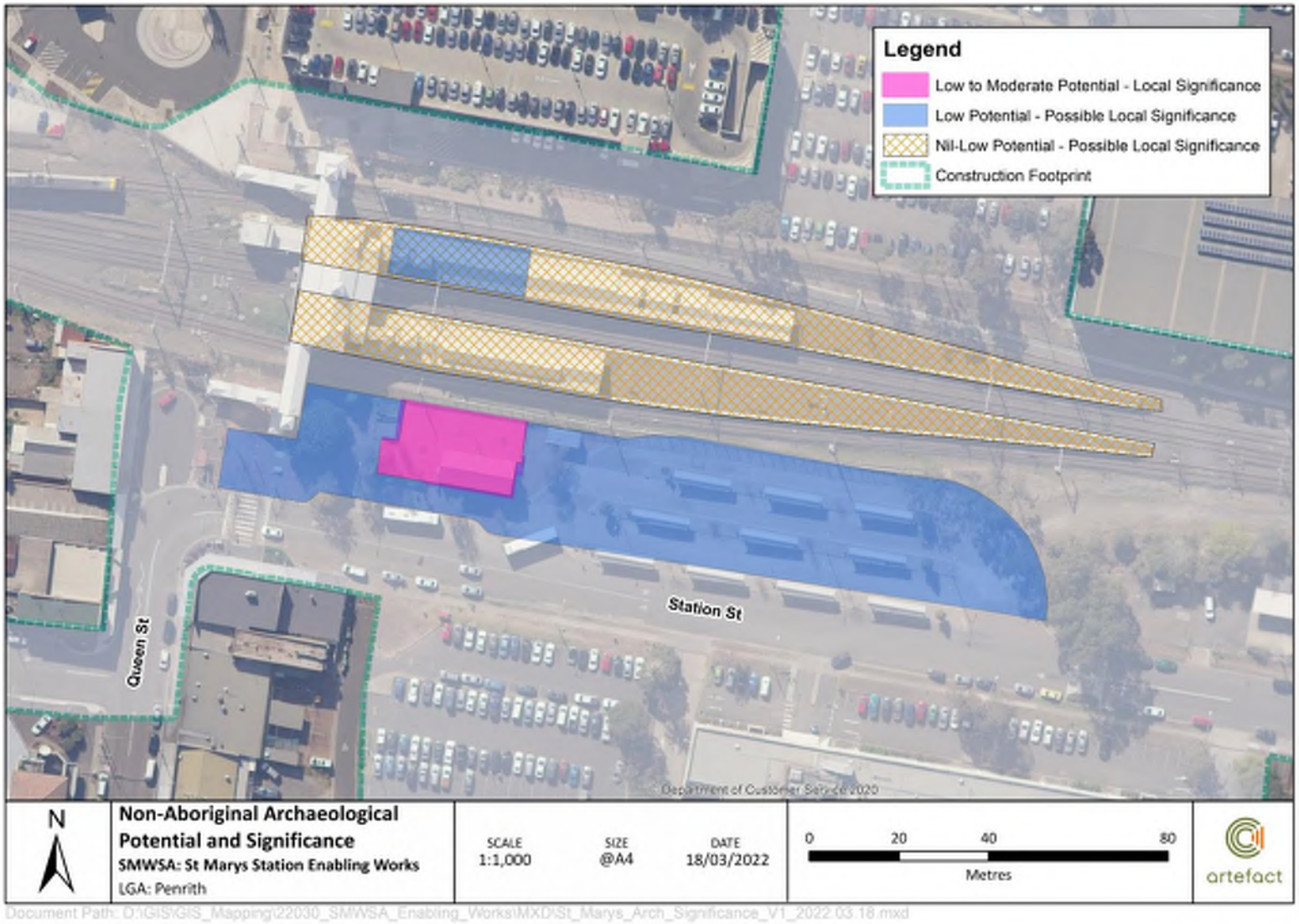
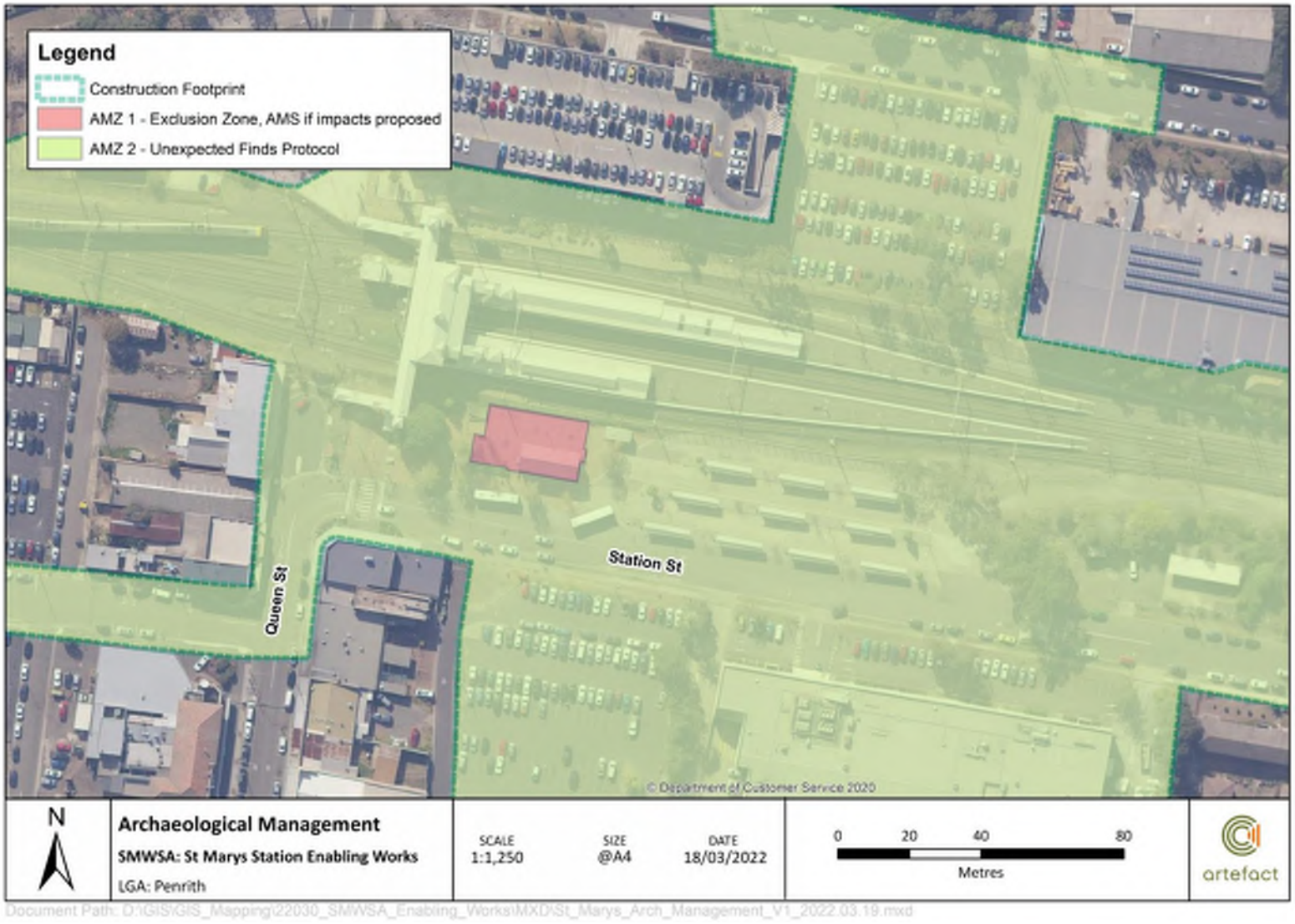


Figure 5: Archaeological management zones at St Marys station



4.0 HERITAGE MANAGEMENT PROCEDURE

This section of the Heritage Management Procedure outlines the procedures, controls and mitigation measures that would be implemented to manage and mitigate Aboriginal and non-Aboriginal cultural heritage risks of the FSM works. The management measures are based on the mitigation measures compiled from the relevant requirements of the project CoA, REMMs, CEMF and the requirements and standards of Sydney Metro, LORAC.

4.1 Aboriginal archaeological management

4.1.1 Aboriginal Cultural Heritage Assessment Report and Aboriginal Cultural Heritage Management Plan

An ACHAR[14] and ACHMP[15] were prepared by M2A as part of the EIS for the project. Comprehensive Aboriginal consultation was undertaken as part of the preparation of the ACHAR and ACHMP. The ACHAR did not identify any Aboriginal objects, sites, or areas of archaeological sensitivity in, or within 200m of, the St Marys construction site. Therefore, no consultation is expected to be required as part of the FSM works, however RAPs would be kept informed of FSM works by Sydney Metro. Sydney Metro would facilitate community access or meeting as requested by the RAPs in accordance with the ACHMP,The ACHMP required that the St Marys construction site be managed under the Sydney Metro Unexpected Heritage Finds Procedure. The ACHAR and ACHMP would be implemented in accordance with CoA E31.

4.1.2 Unexpected finds

Following the discovery of new finds of Aboriginal objects – works will cease in the immediate area and the area would be secured. Assessment of the site/object and subsequent management of the site will be carried out in accordance with the Sydney Metro Unexpected Heritage Finds Procedure (Appendix A). The use of the Sydney Metro Unexpected Heritage Finds Procedure would satisfy the requirement in E19, E33, E34, E35 and E36 to prepare and implement an Unexpected Heritage Finds Procedure for the project.

All new sites will be recorded on standard Archaeological Heritage Information Management Service (AHIMS) site cards and lodged with Heritage NSW in accordance with E33 and AH6 and AH7.

Following the discovery of unexpected Aboriginal objects, Sydney Metro would notify, Heritage NSW, Penrith City Council, Aboriginal and Torres Strait Island Reference Group and the RAPs.

4.1.3 Human remains

If suspected human remains are identified, the Sydney Metro Unexpected Heritage Finds Procedure and Sydney Metro Exhumation Management Procedure would be implemented in accordance with E36, NAH9 and AH8.

Works will immediately cease in that area. The discoverer will immediately notify machinery operators so that no further disturbance of the remains will occur, as well as notify the foreman/site supervisor, principal contractor, project archaeologist and Sydney Metro Environmental Representative. The

[14] M2A, 2020a; M2A, 2021a.
[15] M2A, 2021b.

Sydney Metro Exhumation Management Procedure will be enacted. Where required, preliminary notification to the NSW Police will be undertaken by the Sydney Metro Environmental Manager.

Once confirmation is received from the technical specialist that the remains are of human origin, there are three possible statutory pathways to follow based on the assessment. Refer to the Sydney Metro Exhumation Management Procedure.

No works to recommence until clearance is provided by Heritage NSW and/or the NSW Police as required by the Sydney Metro Exhumation Management Procedure.

4.1.4 Clearance

A written clearance confirmation would be provided by the project archaeologist to LORAC once the Aboriginal archaeological management of an unexpected find has been completed. This would be signed off by Sydney Metro before works recommenced. Construction would continue under the Unexpected Heritage Finds Procedure.

4.1.5 Reporting

Upon completion of any unexpected finds reporting and required mitigation measures, post excavation reporting in accordance with the Heritage NSW Aboriginal requirements will be undertaken within two years of the completion of archaeological works as required by E32 and AH12. The post-excavation report is to be prepared by the Aboriginal archaeologist in consultation with the RAPs. RAPs would review the draft report prior to finalisation.

4.2 Built heritage management

4.2.1 General

Impacts to heritage items as a result of the FSM works would be limited to the St Marys Railway Station Group (SHR# 01249) curtilage. No works would be undertaken within the boundaries of the potential heritage items Queen Street Post-War Commercial Building and St Marys Munitions Workers Housing. Impacts to significant built heritage fabric associated with St Marys Station would generally be minimal and will only affect heritage fabric that has been considered as part of the project approvals as required by E19.

The proposed activities are largely limited to impacts on the south area at Station Street, the north area adjacent Forrester Road, and the platforms for the construction of the new footbridge, lift and escalators. The asphalt surface of the platforms are not considered to be significant fabric. The 1990s awning at the west end of the Platform 3/4 Building would be replaced, however this is also considered to be an element of little significance within the station group. A demolition work method statement would be prepared to mitigate the impact of removing the awning and reduce the potential physical impact on the adjacent Platform 3/4 Building (exceptional significance) and Platform 3/4 retaining walls (moderate significance).

The level of impacts to St Marys Station are informed by the Sydney Metro – Western Sydney Airport Technical Paper 4: Non-Aboriginal Heritage prepared by Artefact Heritage,[16] and a SoHI prepared by Mott MacDonald.[17]

[16] Artefact Heritage, 2020.
[17] Mott MacDonald, 2021.

4.2.2 Design requirements

The design development of the St Marys Station Footbridge Portion of the Advanced and Enabling Works was considered as part of SoHI for FSM prepared by Tony Brassil of Mott MacDonald. The designs are being developed taking into consideration the heritage values of St Marys Station. Design considerations include maintaining the established aesthetic and form of St Marys Station, minimising impacts to significant fabric, and minimising the destruction, modification or impact to heritage fabric that is not approved under the project conditions in accordance with E19.

Input into the design development will be provided by an appropriately qualified and suitably experienced heritage architect in accordance with ONAH7 in the form of a Statement of Heritage Impact.

The following measures would also be put in place to minimise adverse impacts resulting from the FSM works. These measures outline mitigation strategies that would be employed during the works in order to avoid or reduce impact levels to St Marys Station where possible:

- Exclusion zones during works
- Vibration monitoring.
- Archival photographic digital recordings. It should be noted that such recordings of St Marys Railway Station Group have been completed for the project by Biosis (2022) and Artefact Heritage (2022) in accordance with the relevant guidelines. Therefore, as the relevant CoA E24 and REMM NAH3 requirements (refer to Section 1.3) have been fulfilled, further archival recording is not required for the Footbridge construction work.

4.2.3 Heritage interpretation

The preparation of a Heritage Interpretation Plan (HIP) is not required for the FSM Works although such HIP will be prepared as part of Systems Stations Trains Operation Management (SSTOM). Condition of approval E79 refers to Place Urban Design Corridor Landscape Plan and this should be reviewed by the nominated heritage consultant, if available, to confirm if this document requires heritage interpretation installations as part of the FSM scope.

4.2.4 Induction and Training

All relevant personnel working on site will undergo site induction training relating to heritage. This will consist of awareness training on the heritage value of significant elements of St Marys Railway Station Group (SHR# 01249), heritage exclusion and no go zones, Unexpected finds procedure, protection of heritage items and reporting of damage.

4.2.5 Exclusion zones

Exclusion zones, or mapped no go zones would be provided where the FSM works are to be undertaken in close proximity to significant elements of St Marys Railway Station Group (SHR# 01249) to minimise the risk of impacts. At a minimum, the location of nearby heritage items and significant elements such as the Platform 3/4 Building must be marked on environmental control plans.

Physical barriers such as hoarding, screening or protective blankets would primarily be needed where works or plant movement would be undertaken within about 5m of significant fabric of a heritage item

such as the Platform 3/4 Building. Where physical barriers are set up around the Platform 3/4 Building, they must be sufficiently set back from the structures (approximately 3m) to ensure that if the hoarding collapsed it would not strike the items. Signage would be attached to the barriers to identify the items and outline management requirements.

The requirements for exclusion zones when working in the vicinity of significant elements would be included in site inductions, toolbox meetings, and marked on site maps and signs onsite. Diagrams of the preliminary hoarding plans for the FSM works are shown in Figure 7 to Figure 8.

Perimeter fencing would also be installed around site compounds and laydown/stockpiling areas.

4.2.6 Vibration monitoring

The FSM works would involve the use of vibration intensive plant including hand held drills, small vibratory rollers, hydraulic hammers, and vibratory piles. The EIS Technical Paper 2: Noise and Vibration prepared for the project identifies the recommended vibration limits for cosmetic damage to heritage items.[18] The conservative general vibration screening levels (Peak Particle Velocity [PPV]) provide for intermittent vibration sources identified are:

- Reinforced or framed structures: 10 mm/s
- Unreinforced or light framed structures: 5 mm/s

It is not expected that the use of vibration intensive plant would exceed the identified cosmetic damage vibration limits. To ensure that the FSM works do not cause vibration impacts to significant elements such as the Platform 3/4 Building, vibration monitors would be installed and reviewed during the works. Where vibration monitors are attached to significant elements, they would not be attached with permanent fixings and should be installed in positions where they could not be accidently or deliberately damaged. Only adhesives which are removeable without causing damage to fabric would be used.

If vibration limits are exceeded or if it is identified that the levels of vibration are causing damage to heritage fabric, works would cease and the construction methodology would be reviewed by the project engineers in consultation with a Heritage Consultant in order to mitigate further impacts. A temporary protection plan to outline protection measures required for significant fabric during activities causing potential vibration impacts would be prepared prior to commencement of works.

As the potential heritage items identified within the St Marys construction footprint are located outside of the FSM works boundaries, and considering the limited scope of the works, it is not expected that vibration monitoring will be required for Queen Street Post-War Commercial Building and St Marys Munitions Workers Housing. The FSM works will be carried out in accordance with the FSM Detailed Noise and Vibration Statement prepared by SLR consulting.

4.2.7 Heritage architect

Where FSM works would modify or impact significant heritage fabric at St Marys Station, work methodologies will be undertaken by skilled tradespeople in consultation with an appropriately qualified and suitably experienced heritage architect in accordance with ONAH7. If evidence of deterioration is observed in significant fabric as a result of the FSM works, such as impacts caused by vibrations, or if there is an inadvertent impact to significant fabric, advice on management and treatment would be sought from the heritage architect.

[18] M2A, 2020b. *Sydney Metro – Western Sydney Airport Technical Paper 2: Noise and Vibration*.

Where necessary the heritage architect would also provide additional input into the FSM works design where it relates to significant heritage fabric, or where the design would affect the established aesthetic and forms of St Marys Station.

Figure 6: Preliminary site compound and laydown/stockpiling plan for the FSM works (LORAC 2022)

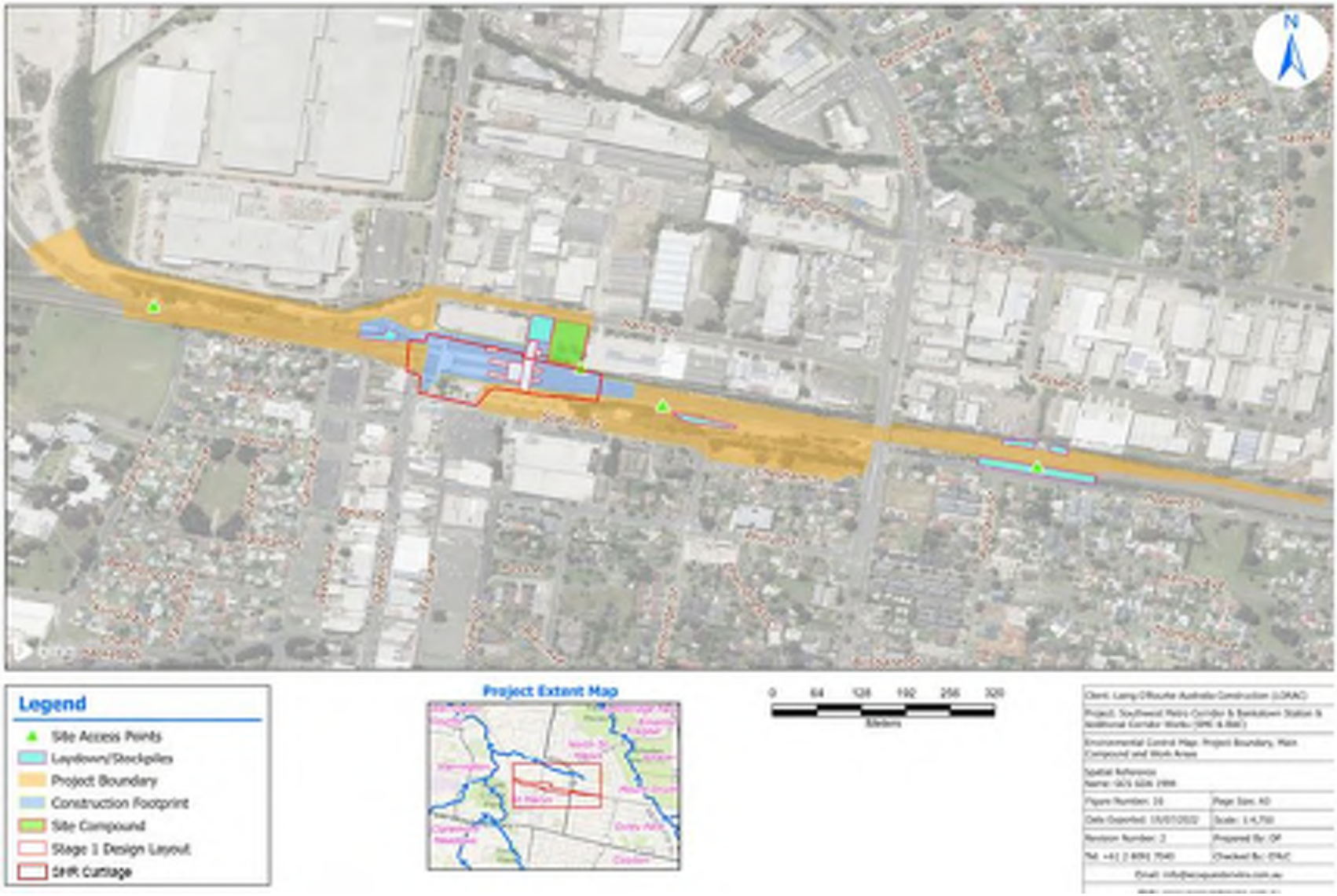


Figure 7: Preliminary platform hoarding plan for Stage 1 of the FSM works (Engineering Design Solutions 2022)

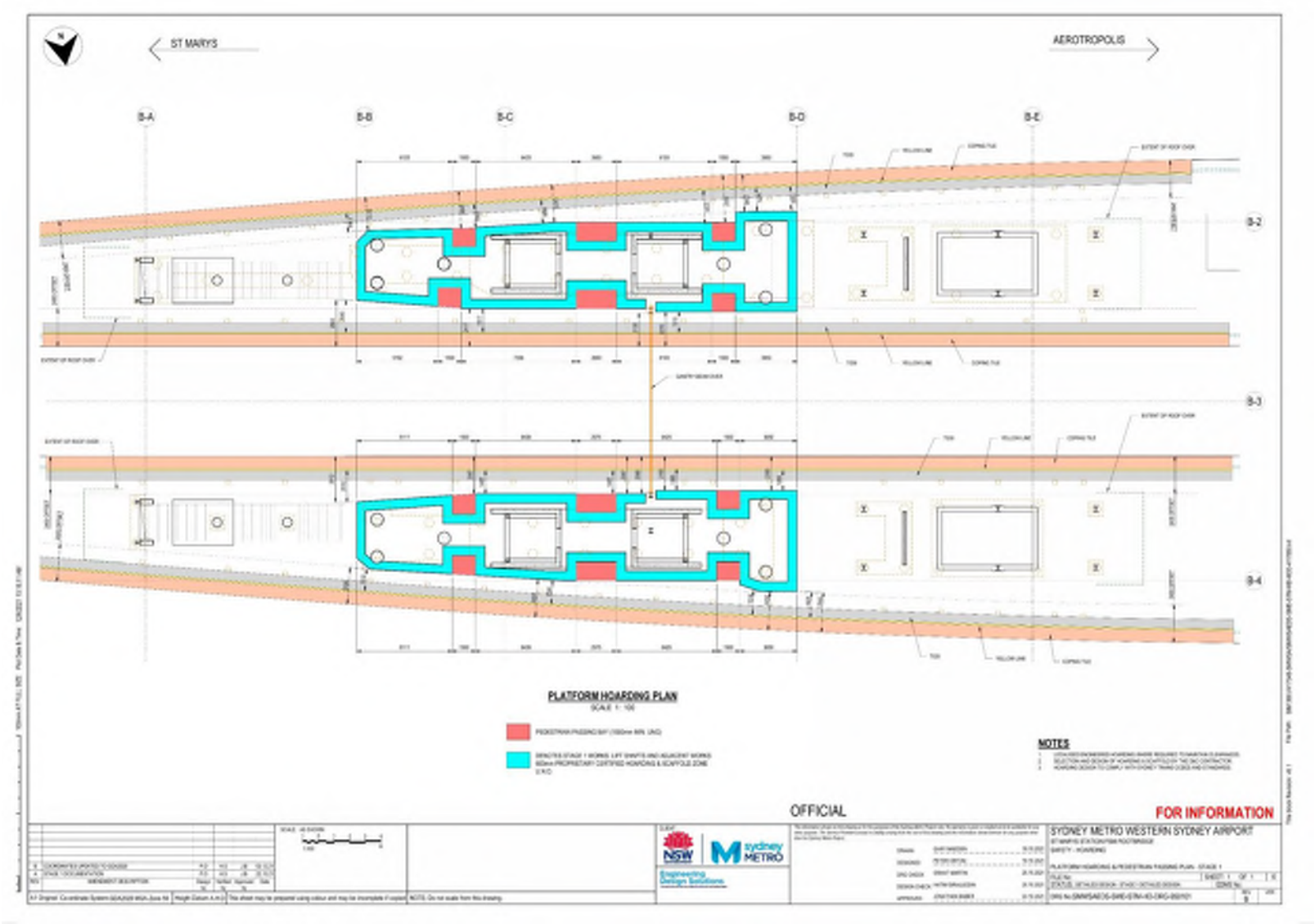


Figure 8: Preliminary platform hoarding plan for Stage 2 of the FSM works (Engineering Design Solutions 2022)

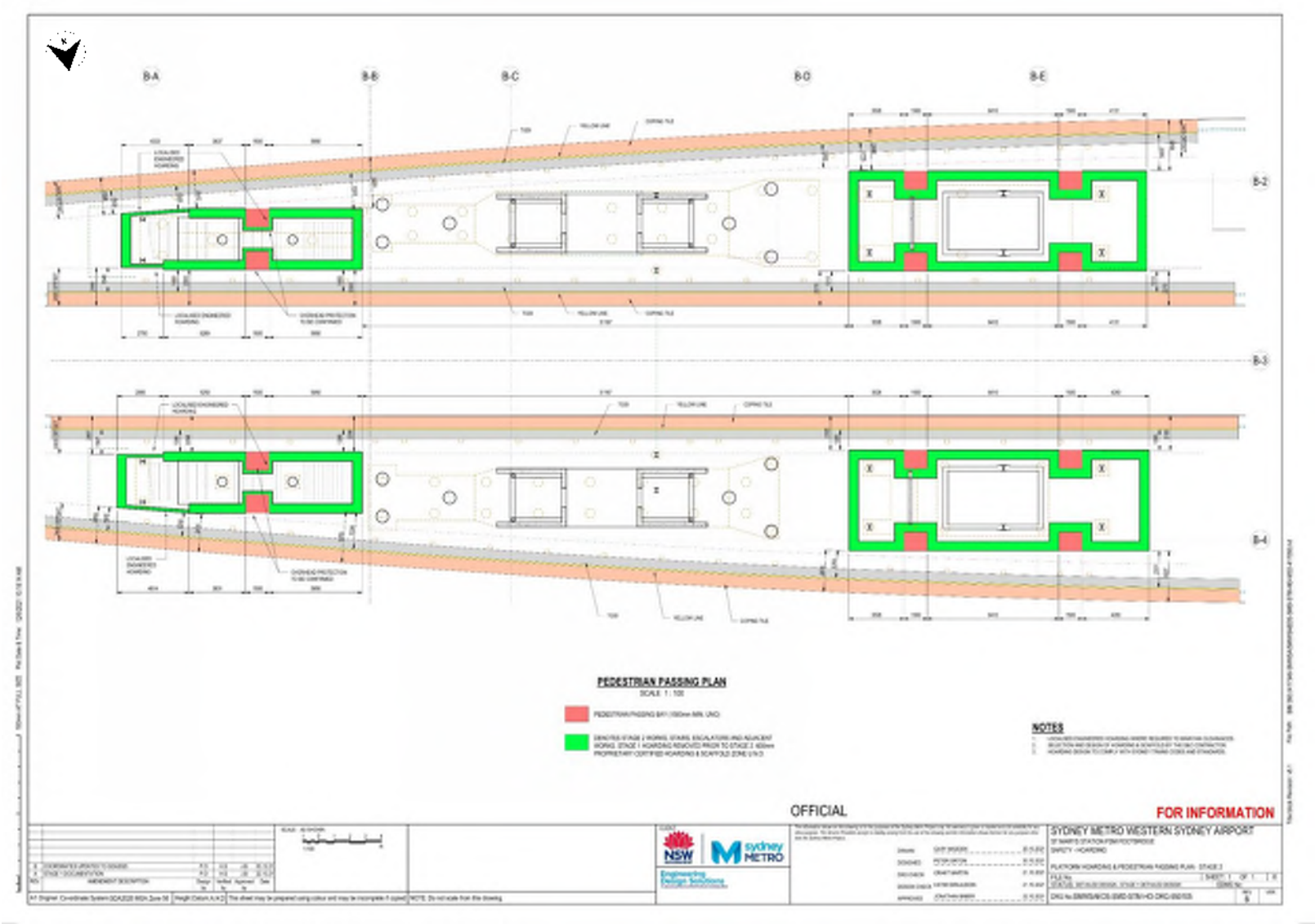
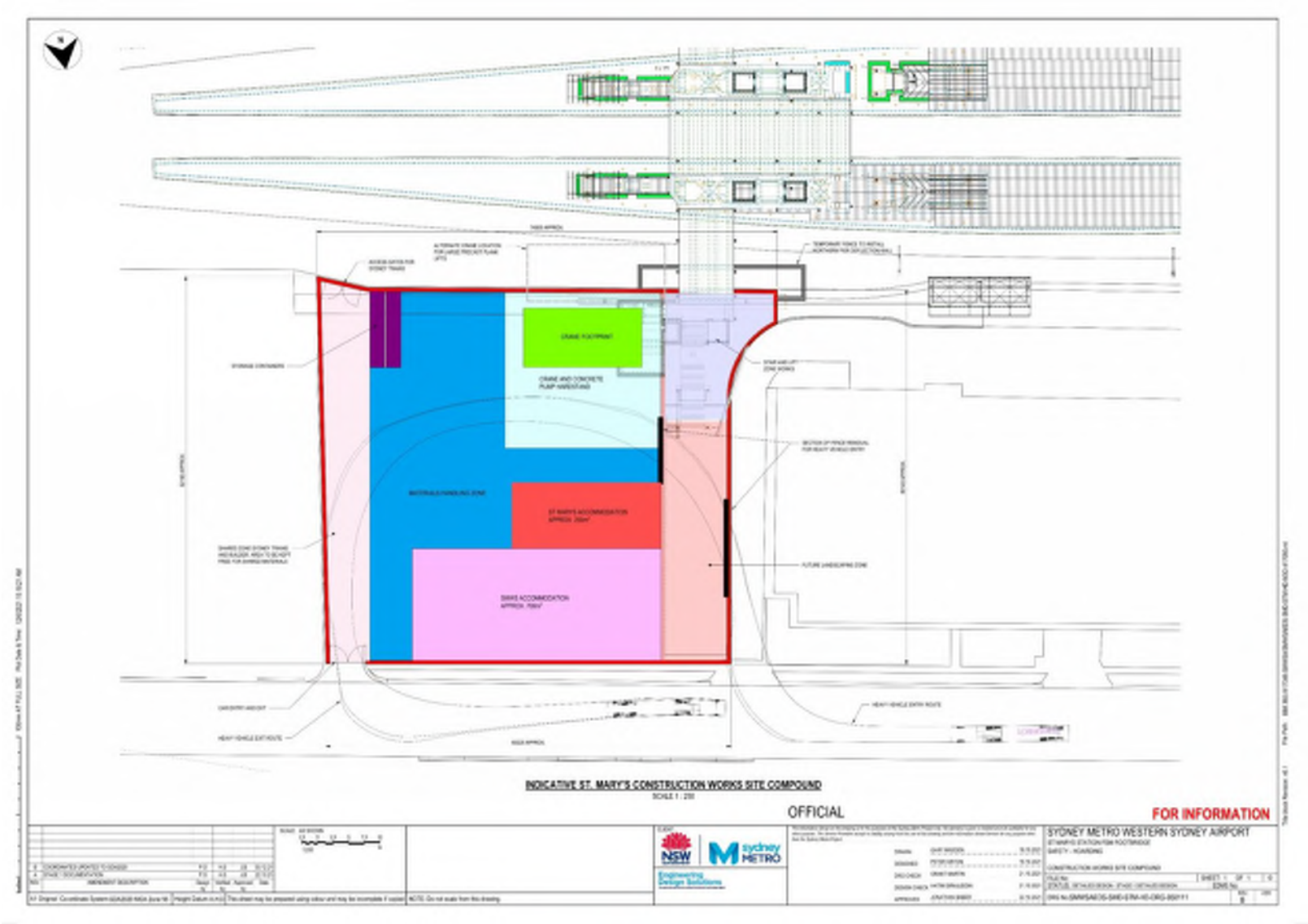


Figure 9: Preliminary site compound plan for the FSM works at St Marys Station (Engineering Design Solutions 2022)



4.3 Non-Aboriginal archaeological management

4.3.1 Archaeological zoning

The ARD divided the construction footprint for the project into AMZs based on archaeological potential. These management zones are used to identify the degree of archaeological management required. Archaeological management zone mapping was included in the ARD and consisted of the following colour code (Figure 5):

- **Red** (Zone 1): Potential impact to significant archaeology and archaeological investigation required. Prepare Archaeological Method Statement (AMS) once construction methodology and impacts are known
- **Green** (Zone 2): Unlikely to contain significant archaeology. Construction to proceed with Unexpected Finds Procedure as nil-low potential for significant archaeological remains.

Significant non-Aboriginal archaeological remains were only identified in one area of the project, the St Marys construction site.

4.3.2 Archaeological management

Archaeological management would be undertaken in accordance with the ARD and the archaeological zoning plan. Ground disturbance would only be undertaken within the areas of nil, nil to low, or low potential for archaeological remains of local significance which are identified as AMZ 2. The FSM works would therefore be managed in accordance with AMZ 2, as required by E22 and NAH5, which consists of management under the Sydney Metro Unexpected Heritage Finds Procedure.

4.3.3 Excavation directors

Before commencement of archaeological excavation, the Proponent must, in consultation with Heritage NSW, nominate a suitably qualified Excavation Director, who complies with Heritage Council of NSW's Criteria for Assessment of Excavation Director (September 2019), to oversee and advise on matters associated with historical archaeology for the approval of the Planning Secretary. The Excavation Director would be present to oversee excavation where required, advise on archaeological issues, and advise on the duration and extent of oversight required during archaeological excavations consistent with the ARD.

As ground disturbance for the FSM works would be limited to AMZ 2, which does not require archaeological investigation as defined by the ARD, oversight by an Excavation Director is not required for the FSM works. Therefore, the involvement of the Excavation Director would only be required in the event of the discovery of a significant unexpected find. If a significant unexpected find is encountered during the FSM works, a suitably qualified Excavation Director would be nominated to provide advice on archaeological management of the find. This would satisfy the requirements of E23.

In the event that a significant unexpected find is encountered during the FSM works, an Excavation Director would be nominated.

4.3.4 Unexpected finds

In accordance with the management strategy outlined in the ARD, due to the low archaeological potential, subsurface works within AMZ 2 would be managed under the Sydney Metro Unexpected Heritage Finds Procedure (Appendix A). In the event that an unexpected find is encountered, works will cease in the area and the area will be secured. The project archaeologists will be contacted to assess the find and advise on the management required. This would satisfy the requirements of E19, E22 and NAH9.

It is noted that there is a minor difference between archaeological remains assessed in the ARD but identified through the unexpected finds procedure, compared to archaeological finds that are considered unexpected. An archaeological find would be unexpected if it was not identified in the ARD as a class or type of possible remain, or if it was identified as locally significant but was assessed, after identification, as being of State significance.

The Sydney Metro Unexpected Heritage Finds Procedure complies with Section 146 of the NSW *Heritage Act 1977*, Notification of discovery of relic:

> *A person who is aware or believes that he or she has discovered or located a relic (in any circumstances, and whether or not the person has been issued with a permit) must: (a) within a reasonable time after he or she first becomes aware or believes that he or she has discovered or located that relic, notify the Heritage Council of the location of the relic, unless he or she believes on reasonable grounds that the Heritage Council is aware of the location of the relic, and (b) within the period required by the Heritage Council, furnish the Heritage Council with such information concerning the relic as the Heritage Council may reasonably require.*

Notification under s146 would only be required if the relic was unexpected.

4.3.5 Human remains

If suspected human remains are identified, the Sydney Metro Unexpected Heritage Finds Procedure and Sydney Metro Exhumation Management Plan would be implemented in accordance with E36 and NAH9.

Works will immediately cease in that area. The discoverer will immediately notify machinery operators so that no further disturbance of the remains will occur, as well as notify the foreman/site supervisor, principal contractor, project archaeologist and Sydney Metro Environmental Representative. The Sydney Metro Exhumation Management Plan will be enacted. Preliminary notification to the NSW Police will be undertaken by the Sydney Metro Environmental Manager.

Once confirmation is received from the technical specialist that the remains are of human origin, there are three possible statutory pathways to follow based on the assessment. Refer to the Sydney Metro Exhumation Management Plan.

No works to recommence until clearance is provided by Heritage NSW and/or the NSW Police as required by the Sydney Metro Exhumation Management Plan.

4.3.6 Clearance

A written clearance confirmation would be provided by the project archaeologist to LORAC once non-Aboriginal archaeological management of an unexpected find has been completed. This would be signed off by Sydney Metro before works recommenced. Construction would continue under the Unexpected Heritage Finds Procedure.

4.3.7 Storage of archaeological materials

If archaeological remains are encountered which include artefact deposits or other elements which are determined by the Excavation Director to be suitable for collection, then these would be salvaged for cataloguing and analysis as part of the archaeological management. Details on proposed sampling and analysis are provided in the ARD.

4.3.8 Reporting

In the event that significant unexpected finds requiring archaeological management are encountered during the FSM works, a non-Aboriginal Archaeological Excavation Report would be prepared at the completion of works. The post excavation reporting will be prepared in accordance with Heritage Council of NSW and Heritage NSW requirements and guidelines, and will be undertaken within 12 months of the completion of archaeological works as required by E26 and E27. The non-Aboriginal Archaeological Excavation Report would be prepared under the direction of the Primary Excavation Director.

The non-Aboriginal Archaeological Excavation Report will be prepared in accordance with the standard requirements of an Excavation permit issued by the Heritage Council:

a) An executive summary of the archaeological programme;
b) Due credit to the client paying for the excavation, on the title page;
c) An accurate site location and site plan (with scale and north arrow);
d) Historical research, references and bibliography;
e) Detailed information on the excavation, including the aim, the context for the excavation, procedures, treatment of artefacts (cleaning, conserving, sorting, cataloguing, labelling, scale photographs and/or drawings, location of repository) and analysis of the information retrieved;
f) Nominated repository for the items;
g) Detailed response to research questions (at minimum those stated in the approved Research Design);
h) Conclusions from the archaeological programme. The information must include a reassessment of the site's heritage significance, statement(s) on how archaeological investigations at this site have contributed to the community's understanding of the site and other comparable archaeological sites in the local area and any relevant recommendations for the future management of the site information and artefacts;
i) Details of how this information about this excavation has been publicly disseminated (for example provide details about Public Open Days and include copies of press releases, public brochures and/or information signs produced to explain the archaeological significance of the site).

In addition to the Planning Secretary, Heritage NSW and Penrith City Council, copies of the non-Aboriginal Archaeological Excavation Report would be provided to relevant local historical societies and local libraries as required by E27.

5.0 APPENDIX A

Sydney Metro Unexpected Heritage Finds Procedure

Unexpected Heritage Finds Procedure

Metro Body of Knowledge (MBoK)

Applicable to:	Sydney Metro
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Table of contents

1. Introduction 4
1.1. Purpose 4
1.2. Scope 4
1.3. Definitions and abbreviations 5
1.3.1. What is an unexpected heritage find? 5
1.3.2. Abbreviations 5
1.4. Accountabilities 6
2. Types of unexpected heritage finds and their statutory protections 6
2.1. Aboriginal objects 7
2.2. Historic (non-Aboriginal) heritage items 7
2.2.1. Archaeological relics 7
2.2.2. Other items 8
2.3. Human skeletal remains 8
3. Unexpected heritage finds procedure 10
4. Responsibilities 16
5. Seeking advice 16
6. Related documents and references 17
7. Superseded documents 17
8. Document history 17
Appendix A: Examples of unexpected heritage finds 18
Appendix B: Unexpected heritage find recording form 24
Appendix C: Photographing unexpected heritage items 25
C1: Context and detailed photographs 25
C2: Photographing distinguishing features 25
C3: Photographing bones 26
Appendix D: Archaeological/heritage advice checklist 28
Appendix E: Template notification letter 29

Figures

Figure 1: Summary of steps to be taken on the discovery of an unexpected heritage item.. 10
Figure 2: Aboriginal stone artefacts found at the Wickham Transport Interchange, 2015 18
Figure 3: Aboriginal artefacts (shell material) found at the Wickham Transport Interchange, 2015..... 18
Figure 4: 1840s seawall and 1880s retaining wall uncovered at Balmain East, 2016 19
Figure 5: Sandstone pavers uncovered at Balmain East, 2016 19
Figure 6: Platform at Hamilton Station classified as a 'work' by the project archaeologist, Wickham Transport Interchange project, 2015..... 20
Figure 7: Sandstone flagging and cesspit, Wynyard Walk project, 2014 20
Figure 8: Chinese Ming Dynasty pottery and English porcelain/pottery dating back to the early nineteenth century, Wynyard Walk project, 2014..... 21
Figure 9: Pottery made by convict potter Thomas Ball during the early settlement period, Wynyard Walk project, 2014 21
Figure 10: Top left hand picture continuing clockwise: Stock camp remnants (Hume Highway Bypass at Tarcutta); linear archaeological feature with post holes (Hume Highway Duplication), animal bones (Hume Highway Bypass at Woomargama); cut wooden stake; glass jars, bottles, spoon and fork recovered from refuse pit associated with a Newcastle Hotel (Pacific Highway, Adamstown Heights, Newcastle area) 22
Figure 11: Culturally modified stone discovered on Main Road 92, about two kilometres west of Sassafras. The remaining images shown a selection of stone artefacts retrieved from test and salvage archaeological excavations during the Hume Highway Duplication and Bypass projects from 2006-2010 23

Tables

Table 1: Terms/acronyms and definitions..... 5
Table 2: Specific tasks to be implemented following the discovery of an unexpected heritage item..... 11
Table 3: Roles and responsibilities..... 16

1. Introduction

1.1. Purpose

This Procedure has been prepared to provide a consistent approach to the management of unexpected Aboriginal and non-Aboriginal heritage uncovered during Sydney Metro activities. It applies to all Sydney Metro activities, both the pre-construction (prior to the Construction Heritage Management Plan approval) and construction phase (post Construction Heritage Management Plan approval) and pre or post-approval activities that are subject to the NSW *Heritage Act (1977)* (Heritage Act) and the *National Parks and Wildlife Act 1974* (NPW Act).

In NSW, there are strict laws to protect and manage both Aboriginal and non-Aboriginal heritage. As a result, appropriate management measures need to be implemented to avoid or minimise impacts, ensure compliance with statutory requirements, and to minimise the risk of penalties to individuals, Sydney Metro and its contractors. This Procedure includes Sydney Metro's heritage notification obligations under the Heritage Act, NPW Act and the *Coroner's Act 2009* and the requirements of the conditions of approval (CoA) issued by NSW Department of Planning, Industry and Environment.

Note that a Contractor must not amend this Procedure or use a different procedure without the prior approval of Sydney Metro.

This Procedure must be read in conjunction with the relevant approval conditions, contract documents and other plans and procedures including SM-20-00099495 Exhumation Management Procedure, in addition to any other relevant documents as developed by the contractor for the delivery of Sydney Metro activities.

1.2. Scope

This Procedure applies to the discovery of any unexpected heritage item, where the find is not anticipated in an approved Archaeological Research Design (ARD) or Archaeological Method Statement (AMS) or other project specific document related to heritage. It applies to all Sydney Metro activities.

This Procedure must be followed by all Sydney Metro staff, contractors, subcontractors or any person undertaking work for Sydney Metro. It includes references to some of the relevant legislative and regulatory requirements, but is not intended to replace them.

This Procedure *does not apply* to the discovery and disturbance of a heritage items:

- As a result of investigations being undertaken in accordance with the *Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW4376 2010*; an Aboriginal Heritage Impact Permit (AHIP) issued under the NPW Act; or a permit approval issued under the Heritage Act; or
- As a result of construction related activities, where the disturbance is permissible in accordance with an AHIP or an approval issued under the Heritage Act or State Significant Infrastructure (SSI)/State Significant Development (SSD) planning approval; or
- Of local significance, where the find is identified and anticipated to occur in an AMS or ARD.

Construction Environment Management Plans (CEMP) should reference or include this Procedure. Where there is an approved CEMP, it must be followed in the first instance. Where there is a difference between approved CEMPs and this Procedure, the approved CEMP must be followed. Where an approved CEMP does not provide sufficient detail on particular issues, this Procedure should be used as a reference.

1.3. Definitions and abbreviations

1.3.1. What is an unexpected heritage find?

An 'unexpected heritage find' can be defined as a:

- Unanticipated discovery of an Aboriginal object or archaeological work or relic, which Sydney Metro does not have approval to disturb and/or is not covered under an existing management process or plan
- Find that has not been identified or assessed in a project assessment or document related to heritage
- Find that is not referenced in an archaeological research design (ARD) or archaeological method statement (AMS)
- Find that is not covered by an existing approval under the NPW Act or Heritage Act.

1.3.2. Abbreviations

All terminology in this Procedure is taken to mean the generally accepted or dictionary definition. Acronyms and terms specific to this document are listed below.

Other terms and jargon are defined within the SM-17-00000203 Sydney Metro Glossary.

Table 1: Terms/acronyms and definitions

	Definitions
Aboriginal object	An Aboriginal object is any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains. An Aboriginal object may include a shell midden, stone tools, bones, rock art, Aboriginal-built fences and stockyards, scarred trees and the remains of fringe camps.
AHIP	Aboriginal Heritage Impact Permit.
AMS	Archaeological Method Statement.
ARD	Archaeological Research Design.
CEMP	Construction Environmental Management Plan.
CoA	Conditions of Approval.
CSSI	Critical State Significant Infrastructure.
Disturbance	Disturbance is considered to be any physical interference to an item that results in it being destroyed, defaced, damaged, harmed, impacted or altered in any way (this includes archaeological investigation activities).
EP&A Act	NSW *Environmental Planning and Assessment Act 1979*.

	Definitions
Excavation Director	A person that has been determined by the Heritage Council of NSW or delegate to meet the Criteria for Assessment of Excavation Directors (4 September 2019 and as updated) and can therefore competently archaeologically investigate a site of either local and/or state significance.
Heritage Act	NSW *Heritage Act 1977*.
Heritage NSW	Formerly Office of Environment and Heritage (OEH). Now Heritage NSW as part of the Department of Premier and Cabinet NSW.
NPW Act	NSW *National Parks and Wildlife Act 1974*.
Relic (non-Aboriginal heritage)	A relic means any deposit, artefact, object or material evidence that: a) Relates to the settlement of the area that comprises NSW, not being Aboriginal settlement; and b) Is of State or local significance.
SSD	State Significant Development.
SSI	State Significant Infrastructure.
Work (non-Aboriginal heritage)	Archaeological features such as historic utilities or buried infrastructure that provide evidence of prior occupations such as former rail or tram track, timber sleepers, kerbing, road pavement, fences, culverts, historic pavement, buried retaining walls, cisterns, conduits, sheds or building foundations, but are also subject to assessment by the Excavation Director to determine its classification.

1.4. Accountabilities

The Director, Environment, Sustainability & Planning is accountable for this Procedure including approving the document, monitoring its effectiveness and performing a formal document review.

Direct Reports to the Chief Executive are accountable for ensuring the requirements of this Procedure are implemented within their area of responsibility.

Direct Reports to the Chief Executive who are accountable for specific projects/programs are accountable for ensuring associated contractors comply with the requirements of this Procedure.

2. Types of unexpected heritage finds and their statutory protections

Project, field and environmental personnel (including construction contractors) are critical to the early identification and protection of unexpected heritage finds.

Appendix A: Examples of unexpected heritage finds illustrates the wide range of heritage items uncovered to date during Transport for NSW projects and provides an understanding of what unexpected finds may look like.

Unexpected heritage finds are categorised as either:

(a) Aboriginal objects;

(b) Historic (non-Aboriginal) heritage items; or

(c) Human skeletal remains.

The relevant legislation that applies to each of these categories is described below.

2.1. Aboriginal objects

The NPW Act provides the basis for the care, protection and management of Aboriginal objects and places in NSW.

An Aboriginal object is defined as: *any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains*.

An 'Aboriginal place' is an area declared by the Minister administering the Act to be of special significance with respect to Aboriginal culture. An Aboriginal place does not have to contain physical evidence of occupation (such as Aboriginal objects).

Under section 87 of the Act, it is an offence to harm or desecrate an Aboriginal object or place. There are strict liability offences. An offence cannot be upheld where the harm or desecration was authorised by an AHIP and the permit's conditions were not contravened. Defences and exemptions to the offence of harming an Aboriginal object or Aboriginal place are provided in section 87, 87A and 87B of the Act. A person must notify Heritage NSW if a person is aware of the location of an Aboriginal object.

Penalties for some of the offences can include two years imprisonment and/or up to $550,000 (for individuals), and a maximum penalty of $1.1 million (for corporations).

Examples of Aboriginal objects include stone artefacts, shell middens, axe grinding grooves, pigment or engraved rock art, burials and scarred trees.

IMPORTANT!

All Aboriginal objects, regardless of significance, are protected under law.

If any impact is expected to an Aboriginal object, an AHIP is usually required from Heritage NSW. When a person becomes aware of an Aboriginal object they must notify the Director-General of Heritage NSW about its location. Assistance on how to do this is provided in section 4 (Step 5).

2.2. Historic (non-Aboriginal) heritage items

The Heritage Act provides for the care, protection and management of heritage items in NSW. Historic (non-Aboriginal) heritage items include:

- Archaeological 'relics' as defined under the Heritage Act; and
- Other items such as works, buildings or movable objects, which are not considered 'relics' under the Act.

2.2.1. Archaeological relics

Under section 139, it is an offence to disturb or excavate any land knowing or having reasonable cause to suspect that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed, unless the disturbance or excavation is carried out in accordance with an excavation permit issued by Heritage NSW under the Act.

A relic is defined as: *'any deposit, artefact, object or material evidence that: (a) relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and (b) is of State or local heritage significance.'*

A person must notify Heritage NSW, if a person is aware or believes that they have discovered or located a relic (section 146). Penalties for offences under the Heritage Act can include six months imprisonment and/or a fine of up to $1.1million.

IMPORTANT!

All relics are subject to statutory controls and protection.

If a relic is likely to be disturbed, an approval is usually required from the Heritage Council of NSW. When a person discovers a relic, they must notify the Heritage Council of NSW of its location.

2.2.2. Other items

Some historic heritage items are not considered to be 'relics', but are instead referred to as works, buildings, structures or movable objects. Examples of these items that may be encountered include culverts, historic pavements, retaining walls, tramlines, rail tracks, turn tables, timber sleepers, cisterns, fences, sheds, buildings and conduits.

Usually archaeological relics are uncovered via a process of excavation or soil removal. When an unexpected find is uncovered, an archaeological excavation permit under section 140 or section 60 of the Heritage Act may be required to further investigate or remove it if investigation is not covered by an existing approval. In contrast, 'other historic items' either exist above the ground surface (for example a shed), or they are designed to operate and exist beneath the ground surface (for example a culvert).They may also need a permit to alter, disturb or remove them if there is not an approval already in place.

2.3. Human skeletal remains

SM-20-00099495 Exhumation Management Procedure provides a more detailed explanation of the approval processes related to human skeletal remains.

Human skeletal remains can be classified as:

- Reportable deaths;
- Aboriginal objects; or
- Relics

Where it is suspected that less than 100 years has elapsed since death, human skeletal remains come under the jurisdiction of the State Coroner and the *Coroners Act 2009* (NSW).

Under s35(2) of the Act, a person must report a death to a police officer, a coroner or an assistant coroner as soon as possible. This applies to all human remains less than 100 years old regardless of ancestry. Public health controls may also apply.

Where the remains are suspected of being more than 100 years old, they are considered to be either Aboriginal objects or non-Aboriginal relics, depending on the ancestry of the individual. Aboriginal human remains are protected under the NPW Act, while non-Aboriginal heritage remains are protected under the Heritage Act.

The discovery of Aboriginal human remains also triggers notification requirements to the Commonwealth Minister for the Environment under s20 (1) of the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984.*

IMPORTANT!

All human skeletal remains are subject to statutory controls and protections.

All bones must be treated as potential human skeletal remains and work around them must stop while they are appropriately protected and investigated, the relevant authorities notified and approvals received.

3. Unexpected heritage finds procedure

In the event that an unexpected find is encountered on a Sydney Metro project, the steps summarised in Figure 1 and detailed in Table 2 must be followed. There are seven steps in the procedure.

IMPORTANT!

Sydney Metro may have approval to impact certain heritage items during construction. If you think that you may have discovered a heritage item and you are unsure whether an approval is in place or not, **STOP** work and follow this Procedure.

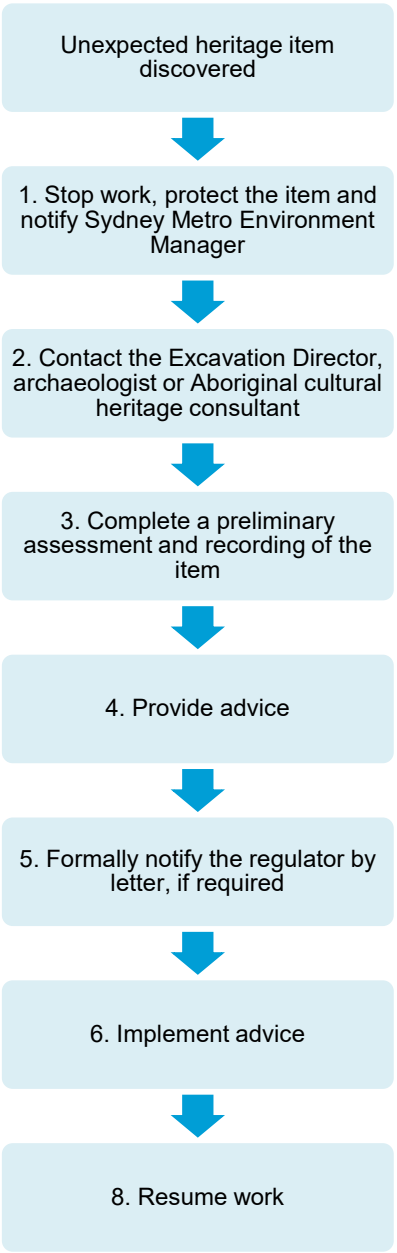


Figure 1: Summary of steps to be taken on the discovery of an unexpected heritage item

Table 2: Specific tasks to be implemented following the discovery of an unexpected heritage item

Step	Task	Responsibility	Guidance and tools
1	**Stop work and protect the item**		
1.1	Stop all work in the immediate area of the item and notify the Project Manager	Contractor/ Supervisor	Appendix A: Examples of unexpected heritage finds
1.2	Establish a 'no-go zone' around the item. Use high visibility fencing, where practical. No ground disturbing work is to be undertaken within this zone until further archaeological investigations are completed, and if required, appropriate approvals are obtained. Inform all on-site personnel about the no-go zone.	Contractor's Project Manager or Supervisor	
2	**Engage an archaeologist**		
2.1	Contact the nominated Excavation Director, archaeologist or Aboriginal cultural heritage consultant to discuss the location and nature of the item and arrange an inspection. The project CEMP should contain the contact details of the archaeologist. Provide as much information as possible to the Excavation Director, archaeologist or Aboriginal cultural heritage consultant, including photographs of the item. Inform the Sydney Metro Environment Manager, and keep them involved in the process. The Environment Manager will inform the Sydney Metro Senior Heritage Advisor.	Contractor's Project Manager	
2.2	Where there is no project Excavation Director, archaeologist or Aboriginal cultural heritage consultant engaged for the work, engage a suitably qualified consultant to assess the find. If the find is likely to be an Aboriginal object, engage a suitably qualified and experienced Aboriginal cultural heritage consultant. If the find is a non-Aboriginal heritage item, engage a suitably qualified and experienced historical archaeological consultant.	Contactor's Project Manager	
3	**Preliminary assessment and recording**		
3.1	Occasionally, the Excavation Director, archaeologist or Aboriginal cultural heritage consultant may determine from the photographs provided at Step 2.1 that it is not necessary to inspect the item because no heritage constraint exists for the project (for example the item is not an Aboriginal object or archaeological relic). This advice should be provided in writing (for example via email or letter with the consultant's name and company clearly identifiable) to the Sydney Metro Project Manager, Environment Manager and Senior Heritage Advisor.	Excavation Director, archaeologist or Aboriginal cultural heritage consultant	Proceed to Step 7

Step	Task	Responsibility	Guidance and tools
3.2	Arrange access for the Excavation Director, archaeologist or Aboriginal cultural heritage consultant to inspect the item as soon as practicable. In most cases, a site inspection is required to conduct a preliminary assessment.	Contactor's Project Manager/ Excavation Director	
3.3	Subject to the Excavation Director, archaeologist or Aboriginal cultural heritage consultant's assessment, work may recommence at a set distance from the item. This is to protect any other archaeological evidence that may exist in the vicinity, which may have not yet been uncovered. The 'no-go zone' established in Step 1.2 may need to be adjusted to reflect the area of archaeological potential, as determined by the Excavation Director, archaeologist or Aboriginal cultural heritage consultant.	Excavation Director, archaeologist or Aboriginal cultural heritage consultant/ Contractor's Project Manager	
3.4	Has the item been damaged or harmed? If yes, record the incident in the Incident Management System. Implement any additional reporting requirements related to the planning approval and CEMP where relevant	Contractor's Project Manager/ Excavation Director, archaeologist or Aboriginal cultural heritage consultant	
3.5	Can the work avoid further impact to the item? Project Manager to confirm with Sydney Metro Environment Manager.	Contractor's Project Manager	
3.6	Record the item and complete the Unexpected Heritage Item Recording Form.	Excavation Director, archaeologist or Aboriginal cultural heritage consultant	Appendix B: Unexpected heritage find recording form Appendix C: Photographing unexpected heritage items
3.7	Is the item likely to be bone? If yes, follow the steps in Appendix D 'Uncovering bones'. Where it is obvious that the bones are human remains, you must notify the local police by telephone immediately. They may take command of all or part of the site. Also refer to SM-20-00099495 Exhumation Management Procedure. If no, proceed to the next step.	Excavation Director, archaeologist or Aboriginal cultural heritage consultant	
3.8	The Excavation Director, archaeologist or Aboriginal cultural heritage consultant may provide advice after the inspection and preliminary assessment that no heritage constraint exists for the project (for example the item is not an Aboriginal object or relic). This advice should be provided in writing (for example via email or letter with the consultant's name and company clearly identifiable) to the Sydney Metro Project Manager, Environment Manager and Senior Heritage Advisor.	Excavation Director, archaeologist or Aboriginal cultural heritage consultant	Proceed to Step 7

Step	Task	Responsibility	Guidance and tools
3.9	Where required, seek additional specialist technical advice (such as a forensic or physical anthropologist to identify skeletal remains). The Excavation Director, archaeologist or Aboriginal cultural heritage consultant can provide contacts for such specialist consultants.	Excavation Director, archaeologist or Aboriginal cultural heritage consultant	
4	**Provide advice**		
4.1	The Excavation Director, archaeologist or Aboriginal cultural heritage consultant should provide written advice with input from Registered Aboriginal Parties where appropriate. The plan should include as a minimum a) a description of the item, b) an assessment of the significance of the item, c) approval or statutory notification requirements, d) reporting requirements, e) consultation requirements, and f) relevance to other project approvals or management plans.	Excavation Director, archaeologist or Aboriginal cultural heritage consultant	Appendix D: Archaeological/heritage advice checklist **Other references** DECCW 2010, Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 DECCW 2010, Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW Heritage Branch 2009, Assessing Significance for Historical Archaeological Sites and 'Relics'
4.2	In preparing the advice, the Excavation Director, archaeologist or Aboriginal cultural heritage consultant must review the CEMP, heritage sub-plans, conditions of project approval and associated heritage assessment documentation (for example an Environmental Impact Statement Technical Paper). The Excavation Director, archaeologist or Aboriginal cultural heritage consultant must determine if the item is consistent with previous heritage or project approvals or management plans. The Project Manager must provide all relevant documents to the Excavation Director to assist with this.	Excavation Director, archaeologist or Aboriginal cultural heritage consultant/ Contractor's Project Manager	
4.3	The Excavation Director, archaeologist or Aboriginal cultural heritage consultant must submit this advice as a report, letter or email to the Project Manager as soon as practicable.	Excavation Director, archaeologist or Aboriginal cultural heritage consultant	
4.4	The Project Manager, Sydney Metro Environment Manager and Sydney Metro Senior Heritage Advisor should review the advice to ensure that all requirements are addressed and can be reasonably implemented.	Consultant's Project Manager/ Sydney Metro Environment Manager/ Sydney Metro Senior Heritage Advisor	
5	**Notify the regulator, if required**		

Step	Task	Responsibility	Guidance and tools
5.1	Based on the advice and any statutory requirements, is notification to Heritage NSW and the Secretary required? If no, proceed directly to Step 6. If yes, proceed to next step.	Sydney Metro Environment Manager/ Sydney Metro Senior Heritage Advisor	
5.2	If notification is required, complete the template notification letter and forward with supporting documentation (including advice obtained at Step 4) to the Sydney Metro Environment Manager. The Environment Manager will seek the approval of the Sydney Metro Senior Heritage Advisor and the signature of the Director Project Environment, Sustainability & Planning or Director Environment, Sustainability & Planning	Sydney Metro Environment Manager	Appendix E: Template notification letter
5.3	Forward the signed notification letter to Heritage NSW once approved and cc Sydney Metro. Informal notification (via a phone call or email) to Heritage NSW prior to sending the letter is appropriate. The advice and completed Unexpected Heritage Item Recording Form (Appendix B) must be submitted with the notification letter (for both Aboriginal objects and non-Aboriginal relics). If the item is an archaeological relic as defined under the Act, a section 146 notification form must also be completed and sent to Heritage NSW as part of the notification.	Sydney Metro Environment Manager	Appendix B: Unexpected heritage find recording form Appendix E: Template notification letter
5.4	A copy of the final signed notification letter, archaeological or heritage management plan and the Unexpected Heritage Item Recording Form is to be kept on file and a copy sent to the Sydney Metro Project Manager	Sydney Metro Environment Manager/ Contractor's Project Manager	
6	**Implement advice**		
6.1	The advice should be modified to take into account any additional advice resulting from notification and discussions with the regulator if required.	Excavation Director, archaeologist or Aboriginal cultural heritage consultant/ Contractor's Project Manager	
6.2	Implement advice. Where impact cannot be avoided, this could include a formal assessment of heritage significance and impact assessment, preparation of excavation or recording methodologies, consultation with Registered Aboriginal Parties and obtaining heritage approvals if required.	Excavation Director, archaeologist or Aboriginal cultural heritage consultant/ Contractor's Project Manager	DECCW 2010, Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 DECCW 2010, Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW

Step	Task	Responsibility	Guidance and tools
6.3	Where heritage approvals are required, contact the Sydney Metro Environment Manager for further advice and support. Please note there are time constraints associated with heritage approval preparation and processing.	Excavation Director, archaeologist or Aboriginal cultural heritage consultant/ Contractor's Project Manager	
6.4	For SSI or SSD projects, or projects approved under Part 5 of the EP&A Act, assess whether the heritage impact is consistent with the project approval or if project approval modification is required from the Department of Planning, Industry and Environment or the relevant consent authority.	Excavation Director, archaeologist or Aboriginal cultural heritage consultant/ Contractor's Project Manager	
6.5	Where statutory approvals (or project modifications) are required, impact upon Aboriginal objects or relics must not occur until heritage and planning approvals have been issued by the appropriate regulator.	Excavation Director, archaeologist or Aboriginal cultural heritage consultant/ Contractor's Project Manager	
6.6	Where statutory approval is not required but where recording is recommended by the Excavation Director, archaeologist or Aboriginal cultural heritage consultant, sufficient time and resources must be allowed for this to occur.	Excavation Director, archaeologist or Aboriginal cultural heritage consultant/ Contractor's Project Manager	
6.7	Ensure short term and permanent storage locations are identified for archaeological material or other heritage material recovered from site, where required. Interested third parties (for example local Aboriginal land councils, local councils or museums) should be consulted on this issue. Contact the Excavation Director, archaeologist or Aboriginal cultural heritage consultant for advice on this issue.	Excavation Director, archaeologist or Aboriginal cultural heritage consultant/ Contractor's Project Manager	
7	**Resume work**		
7.1	Seek written clearance to resume project work from the Excavation Director, archaeologist or Aboriginal cultural heritage consultant. Clearance would only be given once all archaeological excavation or heritage recommendations and approvals (where required) are complete. Resumption of project work must be in accordance with all the relevant project and heritage approvals/determinations.	Contractor's Project Manager	

Step	Task	Responsibility	Guidance and tools
7.2	If required, ensure archaeological excavation/heritage reporting and other heritage approval conditions are completed in the required timeframes. This includes artefact retention repositories, conservation and/or disposal strategies.	Excavation Director, archaeologist or Aboriginal cultural heritage consultant/ Contractor's Project Manager	
7.3	If additional unexpected heritage items are discovered, this procedure must begin again from Step 1.	All	

4. Responsibilities

Table 3: Roles and responsibilities

Role	Responsibility
Contractor/Supervisor	• Stop work immediately when an unexpected heritage item is encountered. Cordon off area until Contractor Environmental Manager/Excavation Director, archaeologist or Aboriginal cultural heritage consultant advises that work can recommence. • Manage the process of the identification, protection and mitigation of impacts on the heritage item. • Liaise with the Sydney Metro Project Manager, Environment Manager and Senior Heritage Advisor. • Assist the Excavation Director, archaeologist or Aboriginal cultural heritage consultant with mitigation and statutory requirements. • Complete Incident Report and review CEMP for any changes that may be required. Proposed amendments to the CEMP if any changes are required.
Contractor's Project Manager	Ensure all aspects of this Procedure are implemented. Advise the Contractor/Supervisor to recommence work if all applicable requirements have been satisfied and the Contractor Environmental Manager/ Excavation Director, archaeologist or aboriginal cultural heritage consultant has approved recommencement of work.
Contractor's Excavation Director/ archaeologist or Aboriginal cultural heritage consultant	Provide expert advice to the Contractor and Sydney Metro Environment Manager on find identification, significance, mitigation, legislative procedures and requirements.
Environmental Representative	Ensure compliance with relevant approvals (new and existing) and the Construction Environment Management Plan.
Sydney Metro Environment Manager	Notify the Director Project Environment, Sustainability & Planning of find and help support Contractor with managing Incident Reporting.
Sydney Metro Senior Heritage Advisor	Provide expert advice to Sydney Metro Environment Manager and project as required.

5. Seeking advice

Advice on this Procedure should be sought from the Sydney Metro Environment Manager in the first instance. Contractors and delivery partners should ensure their own project environment managers are aware of and understand this Procedure.

Technical archaeological or heritage advice regarding an unexpected heritage item should be sought from a suitably qualified and experienced archaeologist/Aboriginal heritage consultant.

6. Related documents and references

Related documents and references
• SM-20-00099495 Exhumation Management Procedure • SM-17-00000096 Environmental Incident Classification and Reporting Procedure • SM-21-00280658 Unexpected Heritage Find Recording Form • SM-21-00280680 Archaeological Heritage Advice Checklist • SM-21-00280708 Unexpected Heritage Discovery Notification Letter Template • 3TP-SD-015/7.0 Transport for NSW Guide to Environmental Control Map • Roads and Maritime Services, November 2015, Unexpected Heritage Items Heritage Procedure 02 • SM-17-00000203 Sydney Metro Glossary • Department of Environment, Climate Change and Water 2010, Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 • Department of Environment, Climate Change and Water 2010, Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW • Heritage Branch Department of Planning 2009, Assessing Significance for Historical Archaeological Sites and 'Relics'

7. Superseded documents

Superseded documents
There are no documents superseded as a result of this document.

8. Document history

Version	Date of approval	Notes
1.1	June 2017	Incorporates Environmental Representative comments
1.2	-	Amends p13 step 8 reference to s146
1.3	-	Incorporates Planning Mods 1-4 including amended CoA E20
1.4	March 2018	Incorporates Environmental Representative comments
2.0	-	Removes SSI 15-7400 COA reference
3.0	-	Revises definitions
3.1	-	Revises procedure
3.2	-	Revises roles and responsibilities
3.3	-	Minor edits and corrections
4.0	16 August 2021	Revises definitions and procedure; references the Sydney Metro Exhumation Management Procedure v5 with amendments throughout for consistency with that document. Updates to related documents and references.

Appendix A: Examples of unexpected heritage finds

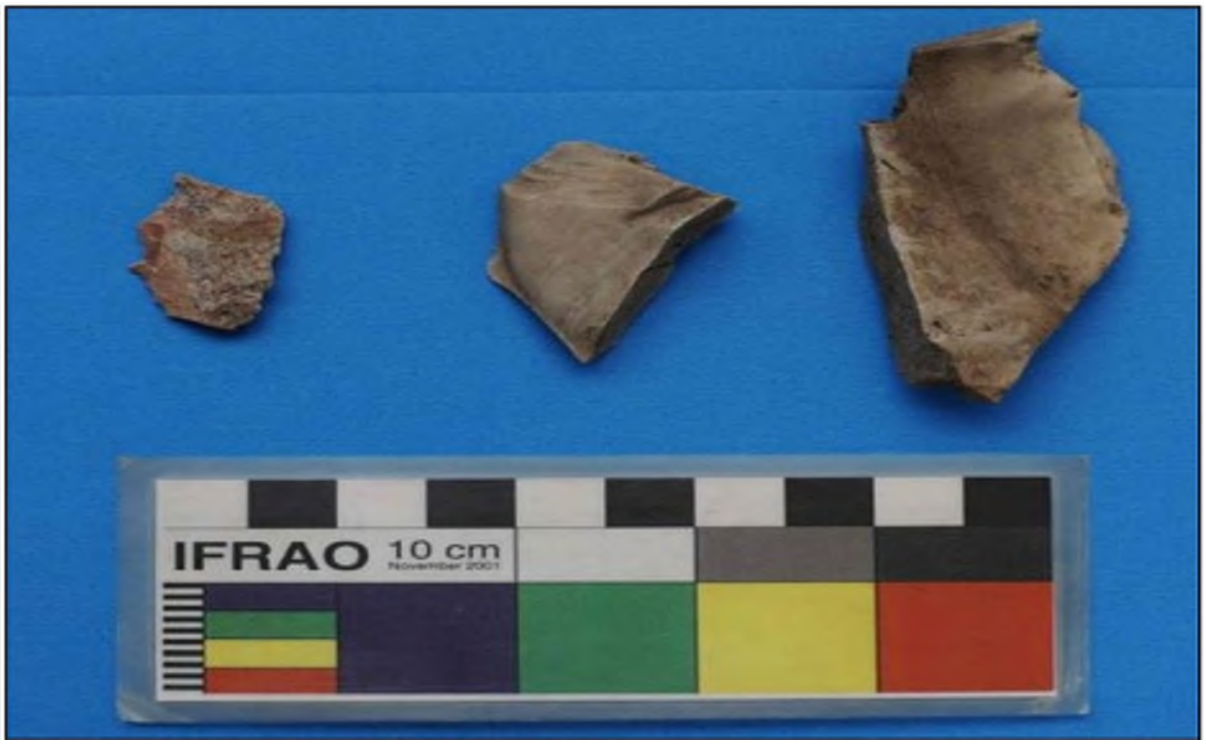


Figure 2: Aboriginal stone artefacts found at the Wickham Transport Interchange, 2015



Figure 3: Aboriginal artefacts (shell material) found at the Wickham Transport Interchange, 2015



Figure 4: 1840s seawall and 1880s retaining wall uncovered at Balmain East, 2016



Figure 5: Sandstone pavers uncovered at Balmain East, 2016



Figure 6: Platform at Hamilton Station classified as a 'work' by the project archaeologist, Wickham Transport Interchange project, 2015



Figure 7: Sandstone flagging and cesspit, Wynyard Walk project, 2014



Figure 8: Chinese Ming Dynasty pottery and English porcelain/pottery dating back to the early nineteenth century, Wynyard Walk project, 2014



Figure 9: Pottery made by convict potter Thomas Ball during the early settlement period, Wynyard Walk project, 2014



Figure 10: Top left hand picture continuing clockwise: Stock camp remnants (Hume Highway Bypass at Tarcutta); linear archaeological feature with post holes (Hume Highway Duplication), animal bones (Hume Highway Bypass at Woomargama); cut wooden stake; glass jars, bottles, spoon and fork recovered from refuse pit associated with a Newcastle Hotel (Pacific Highway, Adamstown Heights, Newcastle area)



Figure 11: Culturally modified stone discovered on Main Road 92, about two kilometres west of Sassafras. The remaining images shown a selection of stone artefacts retrieved from test and salvage archaeological excavations during the Hume Highway Duplication and Bypass projects from 2006-2010

Appendix B: Unexpected heritage find recording form

Refer to SM-21-00280658 Unexpected Heritage Find Recording Form.

Appendix C: Photographing unexpected heritage items

Photographs of unexpected finds in their current context (*in situ*) may assist archaeologists/Aboriginal heritage consultants to better identify the heritage values of the item. Emailing good quality photographs to specialists can allow for better quality and faster heritage advice. The key elements that must be captured in photographs of the item include its position, the item itself and any distinguishing features. All photographs must have a scale (ruler, scale bar, mobile phone, coin etc.) and a note describing the direction of the photograph.

C1: Context and detailed photographs

It is important to take a general photograph (below left) to convey the location and setting of the item. This will add value to the subsequent detailed photographs also required (below right – labelled Figure 2).

Removal of the item from its context (e.g. excavating from the ground) for photographic purposes is not permitted.

C2: Photographing distinguishing features





Figure 2: Close up detail of the sandstone surface showing material type, formation and construction detail. This is essential for establishing date of the feature.

Where unexpected items have a distinguishing feature, close up detailed photographs must be taken of these features, where practicable. In the case of a building or bridge, this may include diagnostic details architectural or technical features. See images next page, labelled Figures 3 and 4 for examples.



Figure 3: Ceramic bottle artefact with stamp.



Figure 4: Detail of the stamp allows '*Tooth & Co Limited*' to be made out. This is helpful to a specialist in gauging the artefact's origin, manufacturing date and likely significance.

C3: Photographing bones

The majority of bones found on site will be animal bones often requiring no further assessment (unless they are in archaeological context). However, if bones are human, the police must be contacted immediately (see Appendix E for detailed guidance). Taking quality photographs of the bones can often resolve this issue quickly. The project archaeologist can confirm if bones are human or non-human if provided with appropriate photographs.

Ensure that photographs of bones are not concealed by foliage (example below left, labelled Figure 5) as this makes it difficult to identify. Minor hand removal of foliage can be undertaken as long as disturbance of the bone does not occur. Excavation of the ground to remove bone(s) should not occur, nor should they be pulled out of the ground if partially exposed.

Where sediment (adhering to a bone found on the ground surface) conceals portions of a bone (example below right, labelled Figure 6) ensure the photograph is taken of the bone (if any) that is not concealed by sediment.



Figure 5: Bone concealed by foliage.



Figure 6: Bone covered in sediment

Ensure that all close up photographs include the whole bone and then specific details of the bone (especially the ends of long bones, the *epiphysis*, which is critical for species identification). The images below (labelled Figure 7, left and Figure 8, right) are examples of good photographs of bones that can easily be identified from the photograph alone. They show sufficient detail of the complete bone and the epiphysis.



Figure 7: Photograph showing complete bone.



Figure 8: Close up of a long bone's epiphysis.

Appendix D: Archaeological/heritage advice checklist

Refer to SM-21-00280680 Archaeological Heritage Advice Checklist.

Appendix E: Template notification letter

Refer to SM-21-00280708 Unexpected Heritage Discovery Notification Letter Template.

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Attachment S: Detailed Noise and Vibration Impact Statement

REPORT

ST MARYS STATION FOOTBRIDGE

ST MARYS, NSW

DETAILED NOISE AND VIBRATION IMPACT STATEMENT
RWDI # 2305915
24 January 2025

SUBMITTED TO

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DOCUMENT CONTROL

Ver.	Status	Date	Prepared	Reviewed	Notes
A	Draft	31 Oct 2024	Peter Thang	Remi Larmandieu	Modelling updated to include additional plant
B	Final	13 Nov 2024	Peter Thang	Davis Lai	Issued to TfNSW for review
C	Final	20 Dec 2024	Peter Thang	Davis Lai	Final updates
D	Final	24 Jan 2025	Peter Thang	Davis Lai	Updates to sleep disturbance assessment

NOTE

All materials specified by RWDI Australia Pty Ltd (RWDI) have been selected solely on the basis of acoustic performance. Any other properties of these materials, such as fire rating, chemical properties etc. should be checked with the suppliers or other specialised bodies for fitness for a given purpose.

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RWDI

RWDI is a team of highly specialised consulting engineers and scientists working to improve the built environment through three core areas of practice: building performance, climate engineering and environmental engineering. More information is available at www.rwdi.com.

AAAC

This firm is a member firm of the Association of Australasian Acoustical Consultants and the work here reported has been carried out in accordance with the terms of that membership.

QUALITY ASSURANCE

RWDI Australia Pty Ltd operates a Quality Management System which complies with the requirements of AS/NZS ISO 9001:2015. This management system has been externally certified by SAI Global and Licence No. QEC 13457 has been issued for the following scope: The provision of consultancy services in acoustic engineering, air quality and wind engineering; and the sale, service, support and installation of acoustic monitoring and related systems and technologies.

GLOSSARY

Term	Definition
CNVS	Sydney Metro Construction Noise and Vibration Standard (2020)
dBA	The decibel (dB) sound pressure level filtered through the A filtering network to approximate human hearing response at low frequencies.
DNVIS	Detailed Noise and Vibration Impact Statement
EPA	Environment Protection Authority
FSM	Footbridge Construction at St Marys Station
Highly Noise Affected	The highly noise affected level represents the point above which there may be strong community reaction to noise, i.e. > 75 dBA
ICNG	Interim Construction Noise Guideline (DECC, 2009)
L_{A90}	The LA90 level is the noise level which is exceeded for 90% of the sample period. During the sample period, the noise level is below the LA90 level for 10% of the time. This measure is commonly referred to as the background noise level.
L_{Aeq}	The equivalent continuous sound level (LAeq) is the energy average of the varying noise over the sample period and is equivalent to the level of a constant noise which contains the same energy as the varying noise environment. This measure is also a common measure of environmental noise and road traffic noise.
Maximum Noise Level (L_{Amax})	The maximum noise level over a sample period is the maximum level, measured on fast response, during the sample period.
NCA	Noise Catchment Area
NML	Noise Management Level
NPfI	Noise Policy for Industry
OOHW	Out of Hours Work
Other sensitive receivers	Non-residential sensitive receivers, including hospitals, educational facilities, place of worship, child care centres, outdoor recreation areas, etc
RBL	The Rating Background Level for each period is the median value of the ABL values for the period over all of the days measured. There is therefore an RBL value for each period – daytime, evening and night time.
SPL	Sound Pressure Level, the logarithmic ratio of the RMS sound pressure to the sound pressure at the threshold of hearing.
SWL / L_W	Sound Power Level, the logarithmic ratio of the instantaneous sound power (energy) of a noise source to that of an international standard reference power.

TABLE OF CONTENTS

1 INTRODUCTION 6
2 PROJECT DESCRIPTION 12
2.1 Site Location 12
2.2 Proposed Works 12
2.3 Working Hours 13
3 EXISTING ENVIRONMENT 16
3.1 Surrounding Sensitive Receivers 16
3.2 Noise Catchment Areas 16
3.3 Heritage Assets 16
3.4 Existing Background Noise Levels 17
3.5 Baseline Road Traffic Noise Levels 18
4 CONSTRUCTION NOISE CRITERIA 20
4.1 Interim Construction Noise Guideline 20
4.2 Sleep Disturbance 22
4.3 Construction Road Traffic Noise Criteria 23
4.4 Ground-borne Noise 24
5 CONSTRUCTION VIBRATION CRITERIA 25
5.1 General Cosmetic Damage Vibration Goals 25
5.2 Heritage Buildings or Structures Vibration Goals 26
5.3 Human Comfort Vibration Goals 26
5.4 Sensitive Scientific Equipment 28
6 NOISE ASSESSMENT 29
6.1 Construction Scenarios 29
6.2 Construction Source Noise Levels 30
6.3 Construction Noise Modelling 33
6.4 Predicted Construction Noise Levels 33

6.5 Road Traffic Noise 36
6.6 Ground-borne Noise 36
7 VIBRATION ASSESMENT 37
7.1 Summary of Vibration Intensive Works 37
7.2 Vibration Assessment 38
8 MITIGATION AND MANAGEMENT MEASURES 42
8.1 Standard Mitigation Measures 42
8.2 Project Specific Mitigation and Management Measures 42
8.3 Measures Identified Through Consultation 46
8.4 Additional Mitigation Measures 46
8.5 Respite Periods 48
8.6 Community Notification 48
8.7 Monitoring 49
8.8 Alternative Construction Methods 50
9 CUMULATIVE IMPACTS 51
10 CONCLUSION AND RECOMMENDATIONS 52
11 STATEMENT OF LIMITATIONS 53

APPENDICES

Appendix A: Noise Impact Maps
Appendix B: Predicted Noise Level Tables

1 INTRODUCTION

RWDI Australia Pty Ltd (RWDI) has been engaged by Laing O'Rourke Australia Construction Pty Ltd (LOR) to undertake a Detailed Noise and Vibration Impact Statement (DNVIS) for works associated with the Footbridge construction at St Marys Station (FSM). The FSM project forms part of the enabling works for the Sydney Metro Western Sydney Airport (the project) and is being undertaken as part of the Transport Access Program (TAP3) for Sydney Metro Western Sydney Airport (the Project).

This DNVIS provides the following details:

- the existing noise environment;
- the land zoning of the site and neighbouring area;
- the closest existing sensitive receivers;
- relevant noise criteria;
- construction noise and vibration and traffic noise predictions for the proposed works and assumptions used in the assessment; and
- recommendations to minimise the noise impact on the affected receivers, if required.

This assessment has been prepared in accordance with the Construction Environmental Management Plan (CEMP) for FSM, as per the Minister's Condition of approval (CoA) E47. This report assesses the potential construction noise and vibration impacts associated with the construction of the FSM. A list of applicable requirements from the CoA which are applicable to the preparation of this DNVIS is provided in **Table 1-1** below. Other requirements relevant to Noise and Vibration including E41 Variation to work hours, E42 Out of hours work protocol are further detailed in the CEMP.

This assessment has been completed with reference to relevant guidelines and policies, namely:

- *Interim Construction Noise Guideline (DECC, 2009) – ICNG*
- *Sydney Metro Construction Noise and Vibration Standard (2020) – CNVS*
- *NSW Industrial Noise Policy (NSW EPA, 2000) – INP*
- *Transport for NSW Construction Noise and Vibration Strategy – April 2018 (TfNSW 2018)*
- *The Sydney Metro Construction Environmental Management Framework v3.1 – CEMF*
- *Assessing Vibration: A Technical Guideline (DEC, 2006) (for human exposure)*
- *BS 7385 Part 2 -1993 "Evaluation and measurement for vibration in buildings Part 2" (as applicable to Australian conditions)*
- *German Standard DIN 4150-3: Structural Vibration – effects of vibration on structures*

Table 1-1: Compliance with Conditions of Approval

ID	Requirements	Document Reference
E37	A detailed land use survey must be undertaken to confirm sensitive land use(s) (including critical working areas such as operating theatres and precision laboratories) potentially exposed to construction noise and vibration and construction ground-borne noise. The survey may be undertaken on a progressive basis but must be undertaken in any one area before the commencement of work which generates construction noise, vibration or ground-borne noise in that area. The results of the survey must be included in the **Detailed Noise and Vibration Impact Statements** required under **Condition E47**.	Section 3.1 Figure 3-1
E38	Work must only be undertaken during the following hours: a) 7:00am to 6:00pm Mondays to Fridays, inclusive; b) 8:00am to 1:00pm Saturdays; and c) at no time on Sundays or public holidays.	Section 2.3
E39	Except as permitted by an EPL or approved in accordance with the Out-of-Hours Works Protocol required by **Condition E42**, highly noise intensive work 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 work.	Section 8.2 and 8.5
E40	The Approval Does not permit blasting	Not Applicable, Blasting not part of Project design.
E41	Variation to work hours	Refer to CEMP
E42	Out of hours work Protocol	Refer to CEMP
E43	Mitigation measures must be implemented with the aim of achieving the following construction noise management levels and vibration criteria:	Section 8.1 and 8.2
	a) construction 'Noise affected' noise management levels established using the Interim Construction Noise Guideline (DECC, 2009);	Section 4
	b) preferred vibration criteria established using the Assessing vibration: a technical guideline (DEC, 2006) (for human exposure);	Section 5
	c) Australian Standard AS 2187.2 – 2006 "Explosives – Storage and Use – Use of Explosives" (for human exposure);	Not Applicable, Blasting not part of Project design.

ID	Requirements	Document Reference
E43	d) BS 7385 Part 2-1993 "Evaluation and measurement for vibration in buildings Part 2" as they are "applicable to Australian conditions"; and	Section 5
	e) the vibration limits set out in the German Standard DIN 4150-3: Structural Vibration- effects of vibration on structures (for structural damage for structurally unsound heritage items).	Section 5
	Any work identified as exceeding the noise management levels and / or vibration criteria must be managed in accordance with **the Noise and Vibration CEMP Sub-plan.**	Section 8.4
	Note: The ICNG identifies 'particularly annoying' activities that require the addition of 5 dB(A) to the predicted level before comparing to the construction Noise Management Level.	Section 6.2
E44	All reasonable and feasible mitigation measures must be applied when the following residential ground-borne noise levels are exceeded: evening (6:00 pm to 10:00 pm) — internal $L_{Aeq(15\ minute)}$: 40 dB(A); and night (10:00 pm to 7:00 am) — internal $L_{Aeq(15\ minute)}$: 35 dB(A). The mitigation measures must be outlined in the **Noise and Vibration CEMP Sub-plan**, including in any Out-of-Hours Work Protocol, required by **Condition E42**	Section 6.6
E45	Noise generating work in the vicinity of potentially-affected community, religious, educational institutions and noise and vibration-sensitive businesses and critical working areas (such as theatres, laboratories and operating theatres) resulting in noise levels above the NMLs must not be timetabled within sensitive periods, unless other reasonable arrangements with the affected institutions are made at no cost to the affected institution.	Section 8.2
E46	Industry best practice construction methods must be implemented where reasonably practicable to ensure that noise levels are minimised around sensitive land user(s). Practices must include, but are not limited to:	Section 8.2
	a) use of regularly serviced low sound power equipment;	Section 8.2
	b) at source control, temporary noise barriers (including the arrangement of plant and equipment) around noisy equipment and activities such as rock hammering and concrete cutting;	Section 8.2
	c) use of non-tonal reversing alarms; and	Section 8.2
E46	d) use of alternative construction and demolition techniques.	Section 8.2 and 8.8

ID	Requirements	Document Reference
E47	**Detailed Noise and Vibration Impact Statements (DNVIS)** must be prepared for any work that may exceed the NMLs, vibration criteria and / or ground- borne noise levels specified in **Conditions E43 and E44** at any residence outside construction hours identified in **Condition E38**, or where receivers will be highly noise affected or subject to vibration levels above those otherwise determined as appropriate by a suitably qualified structural engineer under **Condition E87**. The **DNVIS** must include specific mitigation measures identified through consultation with affected sensitive land user(s) and the mitigation measures must be implemented for the duration of the works. A copy of the **DNVIS** must be provided to the ER before the commencement of the associated works. The Planning Secretary and the EPA may request a copy(ies) of the **DNVIS**.	Section 8.2 and 8.3
E48	Owners and occupiers of properties at risk of exceeding the screening criteria for cosmetic damage must be notified before works that generate vibration commences in the vicinity of those properties. If the potential exceedance is to occur more than once or extend over a period of 24 hours, owners and occupiers must be provided a schedule of potential exceedances on a monthly basis for the duration of the potential exceedances, unless otherwise agreed by the owner and occupier. These properties must be identified and considered in the **Noise and Vibration CEMP Sub-plan**.	Section 8.2
E49	Where sensitive land use(s) are identified in Appendix B as exceeding the highly noise affected criteria during typical case construction, mitigation measures must be implemented with the objective of reducing typical case construction noise below the highly noise affected criteria at each relevant sensitive landuse(s). Activities that would exceed highly noise affected criteria during typical case construction must not commerce until the measures identified in this condition have been implemented, unless otherwise agreed with the Planning Secretary. ***Note**: Mitigation measures may include path barrier controls such as acoustic sheds and/or noise walls, at-property treatment, or a combination of path and at-property treatment.*	Section 6.4, 8.2, Table 4-2, Appendix B, and Appendix C
E51	Where **Condition E49** determines that at-property treatment (temporary or permanent) is the appropriate measure to reduce noise impacts, this at- property treatment must be offered to landowners of residential properties for habitable living spaces, unless other mitigation or management measures are agreed to by the landowner. Landowners must be advised of the range of options that can be installed at or in their property and given a choice as to which of these they agree to have installed. A copy of all guidelines and procedures that will be used to determine at-property treatment at their residence must be provided to the landowner.	Section 8.2
E52	Any offer for at-property treatment or the application of other noise mitigation measures in accordance with **Condition E51**, does not expire until the noise impacts specified in **Condition E49**, affecting that property are completed, even if the landowner initially refuses the offer. Note: If an offer has been made but is not accepted, this does not preclude the commencement of construction under **Condition E49**.	Section 8.2

ID	Requirements	Document Reference
E53	The implementation of at-property treatment does not preclude the application of other noise and vibration mitigation and management measures including temporary and long-term accommodation.	Section 8.2
E54	Vibration testing must be conducted during vibration generating activities that have the potential to impact on Heritage items to verify minimum working distances to prevent cosmetic damage. In the event that the vibration testing and attended monitoring shows that the preferred values for vibration are likely to be exceeded, the Proponent must review the construction methodology and, if necessary, implement additional mitigation measures. Such measures must include, but not be limited to, review or modification of excavation techniques.	Section 8.2
E55	The Proponent must seek the advice of a heritage specialist on methods and locations for installing equipment used for vibration, movement and noise monitoring at Heritage items.	Section 8.2
E56	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 noise sensitive land use(s) so that the respite is achieved in accordance with **Condition E57**; or b) consider the provision of alternative respite or mitigation to impacted noise sensitive land use(s); and c) provide documentary evidence to the ER in support of any decision made by the Proponent in relation to respite or mitigation. The consideration of respite must also include all other approved Critical SSI, SSI and SSD projects which may cause cumulative and / or consecutive impacts at receivers affected by the delivery of the CSSI.	Section 8.2 and 8.5

ID	Requirements	Document Reference
E57	In order to undertake out-of-hours work outside the work hours specified under **Condition E38**, appropriate respite periods for the out-of-hours work must be identified in consultation with the community at each affected location on a regular basis. This consultation must include (but not be limited to) providing the community with: a) a progressive schedule for periods no less than three (3) months, of likely out-of-hours work; b) a description of the potential work, location and duration of the out-of- hours work; c) the noise characteristics and likely noise levels of the work; and d) likely mitigation and management measures which aim to achieve the relevant NMLs under **Condition E43** (including the circumstances of when respite or relocation offers will be available and details about how the affected community can access these offers). 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 ER, EPA and the Planning Secretary prior to the out-of-hours work commencing. ***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 RBL at any residence.*	Section 8.2, 8.5, and 8.6

2 PROJECT DESCRIPTION

2.1 Site Location

St Marys Railway Station is located on the T1- North Shore & Western Line between Kalang Avenue and Glossop Street. The station is located about 40 Kilometres west of the Sydney Central Business District (CBD) in the suburb of St Marys, within in the Penrith Local Government Area. The FSM project will connect the north and south of the station precinct. The FSM works will allow for the interchange between the future SMWSA St Marys metro station, Harris Street car-park, and existing Sydney Trains platforms at St Marys. The St Marys Railway Station Group, including the goods shed, jib crane, and station building are all heritage listed items.

The land uses in the wider St Marys area is generally characterised by an urbanised environment. St Marys Town Centre is one of the two main retail/commercial centres in the Penrith local government area (LGA). The town centre is surrounded primarily by residential, education, open space and recreation areas adjacent to South Creek in the west. A mix of low to medium density, multi-unit residential developments are located in the vicinity of the existing St Marys Station and to the east of the town centre. Outside the town centre, land uses transition to a more residential urban setting around the suburbs of Werrington, Claremont Meadows and Caddens. Werrington comprises a mix of educational, low density residential, plus industrial and recreation uses interspersed with vacant rural land.

Figure 2-1 presents the location of the site and surrounding sensitive receivers and **Figure 2-2** presents a detailed project works area.

2.2 Proposed Works

This DNVIS has been prepared to address the following scope of works:

- Demolition and removal of all existing structures and services affected by the FSM work
- Construction of a footbridge spanning the Sydney Trains T1 line at St Marys Station
- Installation of vertical transportation comprising stairs, four escalators and five lifts
- Modifications to existing Sydney Trains assets to enable the construction of the footbridge including closed-circuit television (CCTV), public address (PA) and over-head wire system (OHWS) etc
- Construction of stairs and canopies which form part of the footbridge structure
- Installation and construction of Sydney Trains services, facilities and rooms
- Installation of new lighting, passenger information display system (PIDS), PA, CCTV, ticketing, communications network equipment, ventilation, plumbing and all related systems
- Electrical earthing, bonding protection and stray current mitigation
- Northern/Harris St landscaping, plaza, bike storage, and kerb side transport.

2.3 Working Hours

All work on or adjacent to active train lines would be carried out in accordance with a relevant rail possession to facilitate safe work within the rail corridor. The approved project hours are defined in CoA E38 and outlined below:

- 7:00 am to 6:00 pm Mondays to Fridays, inclusive.
- 8:00 am to 1:00 pm Saturdays.
- at no time on Sundays or public holidays.

Where a rail possession cannot be obtained for the above hours and/or proposed works cannot be undertaken safely during these hours, some works will be required to be undertaken outside of standard hours (i.e. Out of Hours Work, OOHW).

All out of hours works (except in emergency situations) will be managed under the Sydney Metro Out of Hours Works Protocol as required under CSSI Condition E42, which applies to out of hours work not subject to an EPL. The OOHW Protocol provides a framework for the management of out of hours works including management of impacts and implementation of respite for impacted residences. The Protocol requires the contractor to prepare an OOH works application for approval by Sydney Metro and the project Environmental Representative (ER).

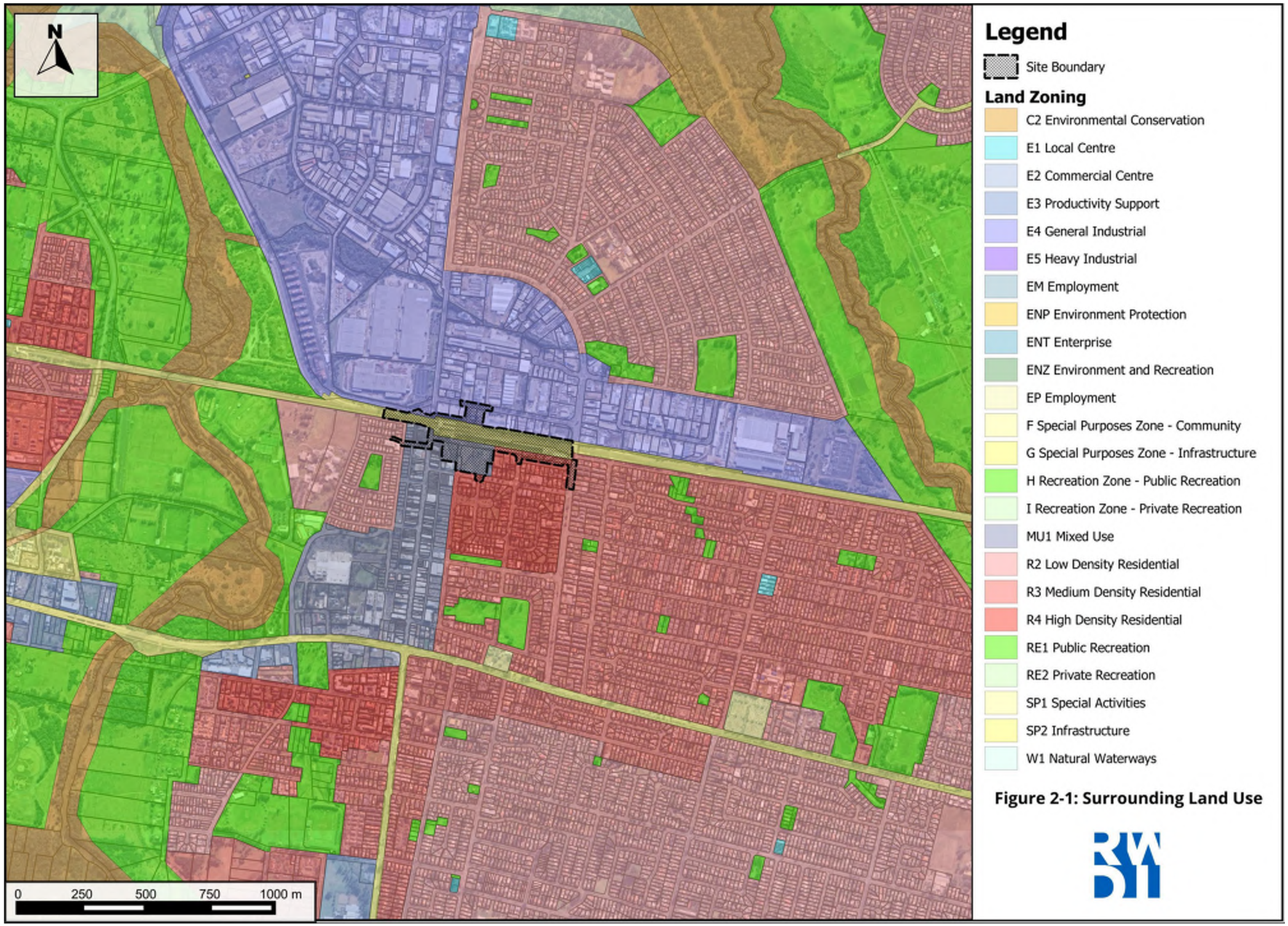
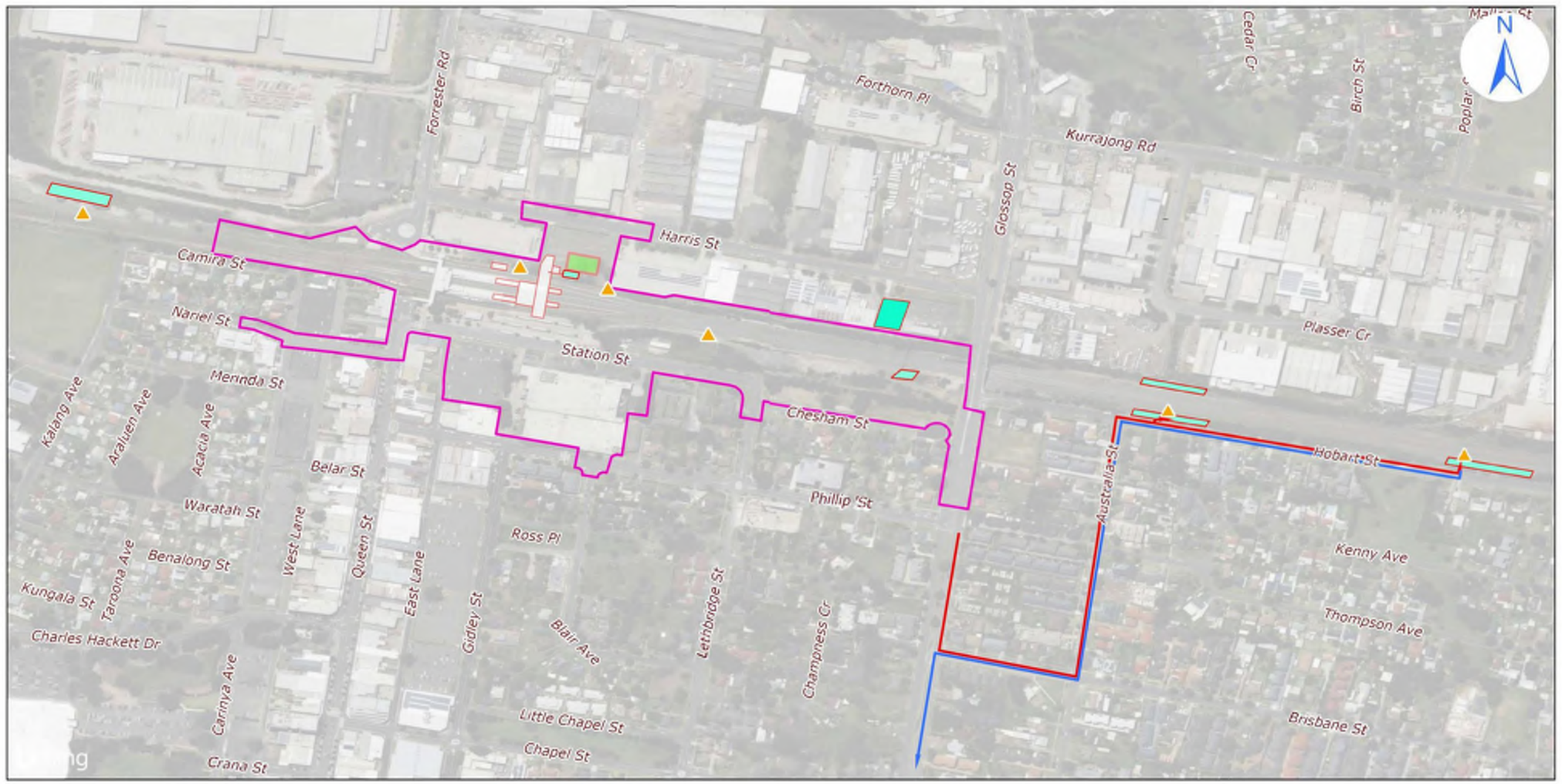


Figure 2-1: Surrounding Land Use



Legend

- Site Access Points
- Site Compound
- Stage 1 Design Layout
- Approved Construction Footprint
- Laydown/Stockpiling Area
- Approved HV Inbound Route
- Approved HV Outbound Route

Project Extent Map



0 75 150 225 300 375
Meters

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Laing O'Rourke Construction Australia, SLR and EcoQuest Environmental.

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Client: Laing O'Rourke Australia Construction (LORAC)	
Project: Sydney Metro - Western Sydney Airport - Footbridge St Marys (FSM)	
Environmental Control Map: Project Boundaries, Main Compound and Work Areas	
Spatial Reference Name: GCS GDA 1994	
Figure Number: 1	Page Size: A3
Date Exported: 14/06/2024	Scale: 1:4,500
Revision Number: 11	Prepared By: VV
	Checked By: CM

EcoQuest Environmental

LAING O'ROURKE

Figure 2-2: Project Works Area

3 EXISTING ENVIRONMENT

3.1 Surrounding Sensitive Receivers

A detailed Land Use Survey was prepared in accordance with CoA E37 to confirm sensitive receivers (including critical working areas such as operating theatres and precision laboratories) potentially exposed to construction noise and vibration and construction ground-borne noise as a result of the Project. **Figure 3-1** presents the location of the site and surrounding sensitive receivers.

Receivers potentially sensitive to noise and vibration have been categorised as residential buildings, commercial/industrial buildings, or 'other sensitive' land uses which includes educational institutions, childcare centres, medical facilities, places of worship, outdoor recreation areas, etc.

This assessment identifies the likely maximum impacts for each receiver in the vicinity of the Project. Some buildings may contain more than one use, for example residential apartments with commercial uses on ground floor. Where this occurs, the building is categorised using the most stringent criteria. Receiver types and locations are shown in **Figure 3-1**. Addresses and usage for receivers shown in **Appendix B**

3.2 Noise Catchment Areas

The FSM study area has been divided into two Noise Catchment Areas (NCAs) adapted from the *Sydney Metro Western Sydney Airport - Environmental Impact Statement* (EIS). These NCAs reflect the ambient noise environment of that area, as well as the noise and vibration sensitivity of the surrounding land uses. These two NCAs are described in **Table 3-1** below and presented in **Figure 3-1**.

Table 3-1: Noise Catchment Areas

NCA	Description
NCA01	Medium density and multi-storey residential dwellings north of the project at St Marys. Ambient noise conditions are dominated by road and rail traffic noise from Glossop Street and Forrester Road, and the existing Sydney Trains suburban rail network. Includes commercial and industrial receivers along Kurrajong Road and Glossop Street
NCA02	Predominantly medium density single and multi-storey residential dwellings, with commercial receivers located along Queen Street. Ambient noise conditions are dominated by traffic along the existing heavy rail line through St Marys Station, and traffic along Queen Street. Other sensitive receivers include the St Marys Hotel and the Emerald Medical Centre.

3.3 Heritage Assets

The following heritage structures have been identified nearby the project site with the potential for impacts:

- **St Marys Railway Station Group** – State Heritage Register and Penrith Local Environmental Plan 2010. The St Marys Railway buildings and structures buildings are good examples of the Colonial Georgian style of late nineteenth century railway architecture. Including:

- **Platforms 1/2 and 3/4** (1888 & 1942-3) – two island platforms with concrete faces and decks topped with asphalt finish. Corrugated metal pitched canopies supported on a steel beam and column frames provide protection over both platforms with the canopy on Platform 3/4 extending around the existing 1888 Waiting Room roof and awning, which remain visible above the new canopy.
- **Platforms 3/4 building** (1888) – St Marys station building is a type 3 second class station building and is constructed of brick with centrally located waiting room flanked by attached two small wings on both ends.
- **Additional structures** Signal Box (1942), the Goods Shed (C.1880), the Footbridge (1942), and the Crane (1943)

3.4 Existing Background Noise Levels

An unattended noise monitoring survey was completed by SLR Consulting Australia Pty Ltd between February and March 2020 as part of the Projects EIS to characterise the existing background noise environment surrounding the site.

Noise monitoring was conducted at two representative locations, in NCA01 and NCA02, and continuously measured existing noise levels in 15-minute periods. The measured baseline noise levels were processed according to the *NPfI* requirements to determine the Rating Background Level (RBL) for the daytime, evening, and night-time periods. The results of the unattended noise monitoring are recreated below in **Table 3-2**.

Table 3-2: Measured Background Noise Levels, dBA

Location	Address	Period [2]	Measured Noise Levels dBA [1]	
			$L_{Aeq,period}$	RBL [2]
NCA01	12 Cedar Crescent, North St Marys	Day	53	38
		Evening	53	41 (38) [3]
		Night	50	40 (38) [4]
NCA02	47 Kalang Avenue, St Marys	Day	55	37
		Evening	59	40 (37) [3]
		Night	51	36

Note 1: The Rating Background Levels (RBLs) and Ambient (L_{Aeq}) noise levels have been obtained from the EIS;

Note 2: The assessment periods are the daytime which is 7 am to 6 pm Monday to Saturday and 8 am to 6 pm on Sundays and public holidays, the evening which is 6 pm to 10 pm, and the night-time which is 10 pm to 7 am on Monday to Saturday and 10 pm to 8 am on Sunday and public holidays. See the NSW EPA Noise Policy for Industry;

Note 3: The evening RBL has been reduced to match the daytime RBL due to the measured evening RBL being higher than the daytime, as outlined in the *NPfI*; and

Note 4: The night-time RBL has been reduced to match the evening RBL due to the measured night-time RBL being higher than the evening, as outlined in the *NPfI*.

3.5 Baseline Road Traffic Noise Levels

Table 4-31 of the Sydney Metro – Western Sydney Airport Technical Paper 2: Noise and Vibration presents predicted baseline road traffic noise levels for the road network surrounding the Sydney Metro Western Sydney Airport project. Of the road sections considered, Glossop Street and Great Western Highway are most relevant to FSM. The predicted baseline road traffic noise levels for these sections are presented in **Table 3-3** below.

Table 3-3: Baseline Road Traffic Volumes and Noise Level

Road	Traffic Volume				Noise level	
	Day[1]		Night[2]			
	Total Vehicles	HV%	Total Vehicles	HV%	Day	Night
Glossop Street (north of the Great Western Highway	18556	8%	3275	7%	66	60
Great Western Highway (east of Queen St)	37576	9%	6631	5%	65	60

Note 1: Day is 7am-10pm

Note 2: Night is 10pm-7am

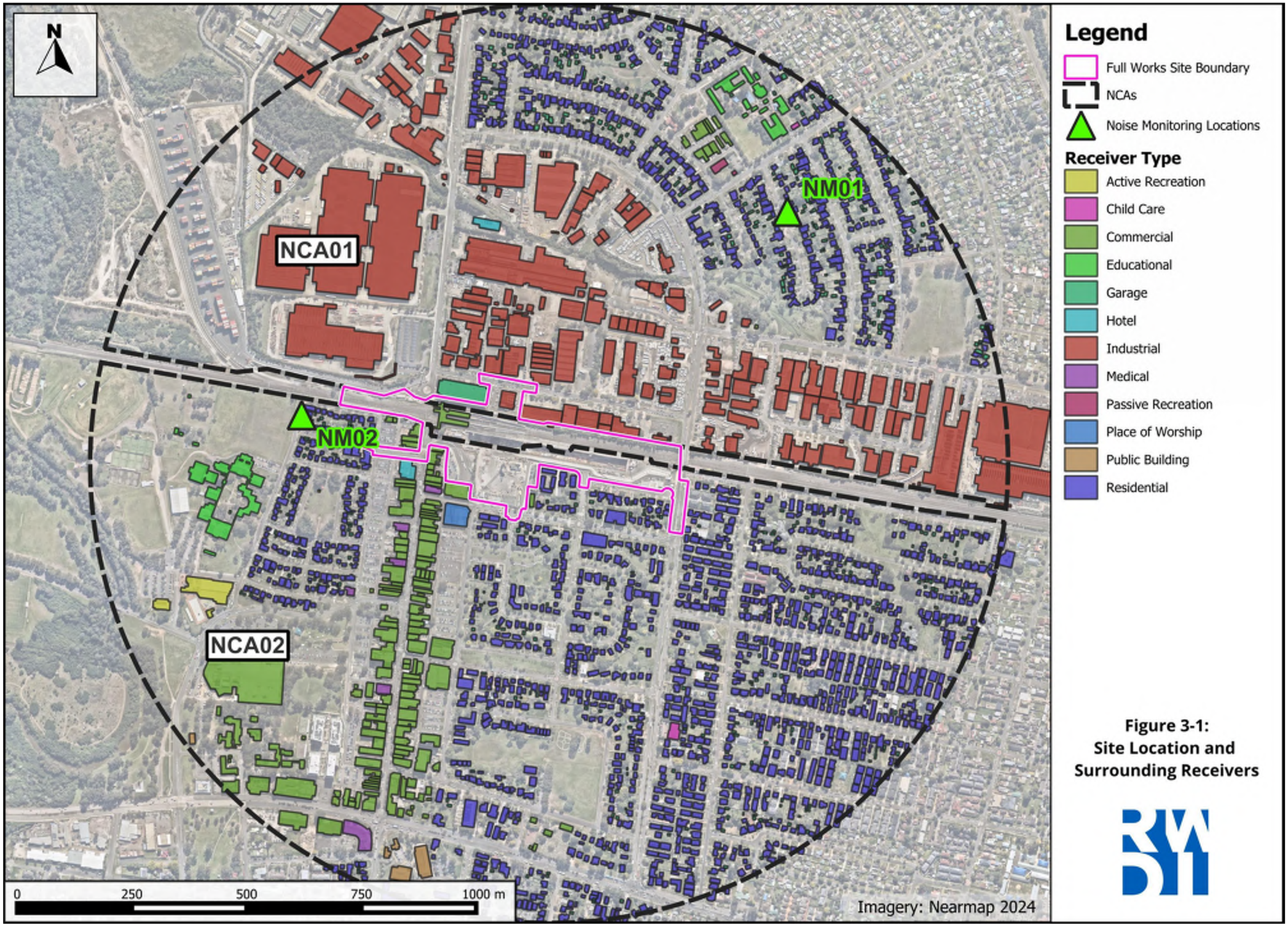


Figure 3-1:
Site Location and Surrounding Receivers

4 CONSTRUCTION NOISE CRITERIA

4.1 Interim Construction Noise Guideline

The *Interim Construction Noise Guideline* (ICNG) provides the noise goals for construction noise to be achieved for the Project.

Standard construction hours per the *ICNG* are typically Monday to Friday 7.00am-6.00pm, and Saturday 8.00am-1.00pm.

On this basis and specifically for residences, the construction Noise Management Level (NML) is that the noise should not exceed the RBL by more than 10 dBA.

It should be noted, the NML are considered as guidelines and not necessarily numeric noise levels to be complied with. The *ICNG* also prescribes a noise limit of 75 dBA. This limit represents the likelihood of a strong reaction from surrounding receivers. **Table 4-1** presents the application of the NML.

Table 4-1: Noise at Residences using Quantitative Assessment

Time	NML	How to Apply
Recommended Standard Hours: Mon to Fri: 7am-6pm Sat: 8am-1pm Sun/Public Holidays: No Work	Noise Affected RBL + 10 dB	The noise affected level represents the point above which there may be some community reaction to noise. • Where the predicted or measure L_{AEQ} is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to meet the noise affected level. • The proponent should also inform all potentially affected residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.
	Highly Noise Affected 75 dBA	The highly noise affected level represents the point above which there may be strong community reaction to noise. Where noise is above this level, the relevant authority (consent, determining or regulatory) may require respite periods by restricting the hours the very noisy activities can occur, taking into account: 1. Times identified by community when they are less sensitive to noise (such as before and after school for works near schools, or mid-morning, mid-afternoon for works near residences. 2. If the community is prepared to accept a longer period of construction in exchange for restrictions on construction times.

Time	NML	How to Apply
Outside Recommended Standard Hours	Noise affected RBL + 5 dB	A strong justification would typically be required for works outside the recommended standard hours. The proponent should apply all feasible and reasonable work practices to meet the noise affected level. Where all feasible and reasonable practises have been applied and noise is more than 5 dB above the noise affected level, the proponent should negotiate with the community.

Based on the recommended NMLs, **Table 4-2** presents the applicable NMLs for construction activities for residential receivers.

Table 4-2: Construction NML for Residential Receivers, $L_{Aeq,15min}$ dBA

NCA	Standard Hours	Out-of-Hours Works		
	Day	Day	Evening	Night
NCA01	48	43	43	43
NCA02	47	42	42	41

Table 4-3 presents the applicable noise management levels for non-residential receivers. These NMLs have been derived from the ICNG

Table 4-3: Construction NML for Non-residential Receivers, $L_{Aeq,15min}$ dBA

Land Use	Period	NML External $L_{Aeq,15min}$ dBA
Industrial Premises	When in use	75
Commercial	When in use	70
Education	When in use	55[1]
Places of Worship	When in use	55[1]
Active Recreation Areas	When in use	65
Passive Recreation Areas	When in use	60
Medical	When in use	65[2]
Child Care Centre (sleeping areas)	When in use	50[1]
Hotel	Day/Evening	70[2]
	Night	60[2]

Note 1: A typical 10 dB outside to inside reduction for a partially opened window has been assumed for an external noise limit.
Note 2: A 20 dB outside to inside reduction for fixed windows have been assumed for these receivers.

4.2 Sleep Disturbance

Noise sources of short duration and high level that may cause disturbance to sleep if occurring during the night-time need to be considered.

The approach recommended by the *NPfI* is to apply the following initial screening noise levels:

- $L_{Aeq,15min}$ 40 dBA or the prevailing RBL + 5 dB, whichever is the greater; and/or
- L_{AFmax} 52 dBA or the prevailing RBL + 15 dB, whichever is the greater.

The sleep disturbance screening noise levels apply outside bedroom windows during the night period. It should be noted, the sleep disturbance criteria apply to all residential receivers.

Table 4-4: Sleep Disturbance Screening Level

NCA	RBL	Sleep Disturbance Screening Level, L_{AFMax} dB
NCA01	38	53
NCA02	36	52

Additional guidance is provided by the NSW Road Noise Policy (RNP) relating to potential sleep disturbance impacts. According to the RNP, research on sleep disturbance indicates that in some circumstances, higher noise levels may occur without significant sleep disturbance. Based on currently available research results, the RNP concludes that:

- "Maximum internal noise levels below 50 dBA to 55 dBA are unlikely to cause awakening reactions."
- "One or two noise events per night, with maximum internal noise levels of 65 dBA to 70 dBA, are not likely to affect health and wellbeing significantly."

4.3 Construction Road Traffic Noise Criteria

Additional traffic movements will result from the construction works.

The *RNP* is considered by RWDI to be the most suitable guideline to assess potential impacts at residences from both construction and operational traffic noise.

Considering all the variety of development categories within the *RNP*, the relevant criteria are summarised in **Table 4-5**.

Table 4-5: Road Traffic Noise Criteria – Residences

Type of Development	Assessment Criteria	
	Day (7am–10pm)	Night (10pm–7am)
Existing residences affected by additional traffic on existing freeways / arterial / sub-arterial roads generated by land use developments	$L_{Aeq,15\ hour}$ 60 (external)	$L_{Aeq,9\ hour}$ 55 (external)
Existing residences affected by additional traffic on existing local roads generated by land use developments	$L_{Aeq,1\ hour}$ 55 (external)	$L_{Aeq,1\ hour}$ 50 (external)

In addition, for existing residences and other sensitive land uses affected by additional traffic on existing roads and where the criterion is exceeded, any increase in the total traffic noise level should preferably be limited to 2 dB. The *RNP* considers that a 2 dB increase is typically not noticeable.

It is worthy to note that the EPA defines periods for on-site noise differently to that defined for road traffic (along the road network). For road traffic noise along the road network, the daytime period is defined as the time between 7 am and 10 pm and night-time is between 10 pm and 7 am.

4.4 Ground-borne Noise

Ground-borne or regenerated noise is noise generated by vibration transmitted through the ground into a structure that may lead to noise "regenerated" within a space in the building. The Construction Noise and Vibration Strategy provides criteria for both residential and commercial receivers, at various time periods. The ground-borne noise criteria are presented in **Table 4-6**.

Table 4-6: Ground-borne Noise Management Levels

Period	Receiver	$L_{Aeq,15min}$ (Internal)
Day (7.00am-6.00pm)	Residential	45
	Commercial	50
Evening (6.00pm-10.00pm)	Residential	40
Day (10.00pm-7.00pm)	Residential	35

The CNVS states that these criteria are only applicable when ground-borne noise levels are higher than the airborne noise levels.

5 CONSTRUCTION VIBRATION CRITERIA

5.1 General Cosmetic Damage Vibration Goals

Vibration due to construction has the potential to cause damage, both cosmetic and structural, to surrounding buildings. In accordance with CoA E43 the *German Standard DIN 4150-3: Structural Vibration- effects of vibration on structures* is to be applied when assessing the potential for building damage.

The vibration guide values for building damage for typical buildings as outline in *DIN 4150-3-1999* are provided in **Table 5-1**.

Table 5-1: Vibration Guide Values for Building Damage – DIN 4150-3

Structure	Guideline values for velocity – mm/s (peak)			
	At foundation at a frequency of			Top storey (horizontal)
	1 to 10 Hz	10 to 50 Hz	50 to 100 Hz	All frequencies
Residential	5	5 to 15	15 to 20	15
Commercial/Industrial	20	20 to 40	40 to 50	40
Vibration Sensitive Structures such as Heritage Structures	3	3 to 8	8 to 10	8

These values are generally considered very conservative for Australian buildings. Alternative values for vibration goals are found in the *British Standard BS 7385-2:1993.* CoA E43 requires these vibration criteria be applied "as applicable to Australian Conditions". The building damage vibration goals from this standard are summarised in **Table 5-2**.

Table 5-2: Vibration Guide Values for Building Damage – BS 7385-2

Type of building	Peak Particle Velocity (PPV in mm/s) in the frequency range of predominant pulse	
	4 Hz to 15 Hz	15 Hz & above
Reinforced or framed structures Industrial and heavy commercial buildings	50 mm/s at 4 Hz and above	-
Unreinforced or light framed structures Residential or light commercial type buildings	15 mm/s at 4 Hz increasing to 20 mm/s at 15 Hz	20 mm/s at 15 Hz increasing to 50 mm/s at 40 Hz and above

The British Standard states that "A building of historical value should not (unless it is structurally unsound) be assumed to be more sensitive."

Additionally, the CNVS provides screening criteria for construction activities that have the potential to cause building damage. These criteria, based on a conservative 50% of the British Standard BS 7385-2:1993 levels, measured as Peak Component Particle Velocity (PCPV), are:

- Reinforced or framed structures: 25.0 mm/s
- Unreinforced or light framed structures: 7.5 mm/s

5.2 Heritage Buildings or Structures Vibration Goals

The CNVS suggests that heritage structures should not be assumed to be more sensitive to vibration sources and should be assessed by the same screening criteria, unless they are found to be structurally unsound after inspection. If a heritage structure is found to be structurally unsound, screening criteria of 2.5 mm/s PCPV apply.

At locations where measured vibration levels are greater than shown above, a more detailed analysis of the building structure, vibration source, dominant frequency and dynamic characteristics of the structure would be required to determine the applicable safe vibration levels.

The *St Marys Station: Enabling Works – Heritage Management Procedure* also provides conservative general vibration screening levels (Peak Particle Velocity [PPV]) for heritage buildings:

- Reinforced or framed structures: 10 mm/s
- Unreinforced or light framed structures: 5 mm/s

The heritage structures that form part of the St Marys Railway Station Group are classified with 'Good' physical condition on the state heritage inventory and are therefore not deemed structurally unsound, or more sensitive to vibration. As such, the vibration screening levels prescribed in the *St Marys Station: Enabling Works – Heritage Management Procedure* have been adopted for this assessment.

5.3 Human Comfort Vibration Goals

In accordance with Assessing vibration: A technical guide (DEC, 2006), human comfort levels relating to vibration from continuous, impulsive and intermittent sources are measured as a Vibration Dose Value (VDV).

In the context of impact to human comfort continuous, impulsive and intermittent sources are defined within Assessing Vibration: A Technical Guide (DEC NSW 2006) as:

- Continuous vibration continues uninterrupted for a defined period (usually throughout daytime and/or night time).
- Impulsive vibration is a rapid build up to a peak followed by a damped decay that may or may not involve several cycles of vibration (depending on frequency and damping). It can also consist of a sudden application of several cycles at approximately the same amplitude, providing that the duration is short, typically less than 2 seconds. Impulsive vibration will be experienced on no more than three occurrences in an assessment period.

- Intermittent vibration can be defined as interrupted periods of continuous (e.g. a drill) or repeated periods of impulsive vibration (e.g. a pile driver), or continuous vibration that varies significantly in magnitude. It may originate from impulse sources (e.g. pile drivers and forging presses) or repetitive sources (e.g. pavement breakers), or sources which operate intermittently, but which would produce continuous vibration if operated continuously (for example, intermittent machinery, railway trains and traffic passing by).

Table 5-3 indicates the preferred and maximum Vibration Dose Value for intermittent vibration.

Table 5-3: Vibration Dose Value goals

Place	Time	Vibration Dose ($m/s^{1.75}$)	
		Preferred	Maximum
Residences	Daytime	0.20	0.40
	Night time	0.13	0.26
Offices	Day or night time	0.40	0.80
Workshops	Day or night time	0.80	1.60

It is not always practical to measure VDV during construction works, as the calculation relies upon duration, intensity and characteristic frequency of the measured vibration events throughout a work day.

In some cases, it may be necessary to relate to an instantaneous measurement, such as Peak Particle Velocity (PPV). Appendix C of Assessing vibration: A technical guide (DEC, 2006) provides guidance on relating measurements of continuous and impulsive vibration to PPV. The criteria are included within **Table 5-4**.

Table 5-4: Criteria for exposure to continuous and impulsive vibration

Place	Time	Peak Particle Velocity (mm/s)	
		Preferred	Maximum
Continuous Vibration			
Residences	Day	0.28	0.56
	Night	0.20	0.40
Offices	Day or Night	0.56	1.1
Workshops	Day or Night	1.1	2.2
Impulsive Vibration			
Residences	Day	8.6	17.0
	Night	2.8	5.6
Offices	Day or Night	18.0	36.0
Workshops	Day or Night	18.0	36.0

5.4 Sensitive Scientific Equipment

Some scientific equipment, such as electron microscopes and microelectronics manufacturing equipment, can require more stringent vibration objectives. Other sensitive equipment used for various business requirements, such as medical equipment, may also have specific vibration goals. Vibration sensitive equipment is, however, often housed in buildings/rooms specifically designed and constructed for that purpose, which can help mitigate any potential impacts.

The following receivers nearby the FSM project site have been identified to potentially contain Sensitive Scientific or Medical Equipment:

- Emerald Medical Centre - 65A Queen Street, Belar St, St Marys NSW 2760
- Autopak-Vetlab Group - 39 Harris St, St Marys NSW 2760.

Where manufacturer's data is not available, generic vibration criterion (VC) curves as published by the Society of Photo-Optical Instrumentation Engineers may be adopted as vibration goals. These generic VC curves are presented in **Table 5-5** below.

Table 5-5: VC Curves for Vibration Sensitive Equipment

Criterion Curve	Max Level (μm/s, RMS)[1]	Detail Size (Microns)[2]	Description of Use
VC-A	50	8	Adequate in most instances for optical microscopes to 400X, microbalances, optical balances, proximity and projection aligners, etc.
VC-B	25	3	An appropriate standard for optical microscopes to 1000X, inspection and lithography equipment (including steppers) to 3 micron line widths.
VC-C	12.5	1	A good standard for most lithography and inspection equipment to 1 micron detail size.
VC-D	6	0.3	Suitable in most instances for the most demanding equipment including electron microscopes (TEMs and SEMs) and E-Beam systems, operating to the limits of their capability.
VC-E	3	0.1	A difficult criterion to achieve in most instances. Assumed to be adequate for the most demanding of sensitive systems including long path, laser- based, small target systems and other systems requiring extraordinary dynamic stability.

Note 1: As measured in one-third octave bands of frequency over the frequency range 8 to 100 Hz.

Note 2: The detail size refers to the line widths for microelectronics fabrication, the particle (cell) size for medical and pharmaceutical research, etc. The values given take into account the observation requirements of many items depend upon the detail size of the process.

6 NOISE ASSESSMENT

6.1 Construction Scenarios

Noise modelling scenarios have been determined based on key FSM project noise generating stages, supplied by the FSM project team. A summary of construction work periods and schedule required for each scenario is shown in **Table 6-1**, as per the working hours defined in CoA E38, Section 2.3. A detailed description of each work scenario is provided in **Table 6-2**.

Table 6-1: Scenarios and Programme

ID	Scenario	Hours of Work				Indicative Start Date	Likely Duration
		Standard	Out of Ours				
		Day[2]	Day[2]	Evening[3]	Night[4]		
W.001[1]	Site establishment	-	-	-	-	Complete	-
W.002	Demolition and removal of all existing structures	✓	✓	✓	✓	May 2023	30 months
W.003	Construction of footbridge - Piling	✓	✓	✓	✓	Complete	-
W.004	Construction of footbridge - Excavation & FRP (substructure)	✓	✓	✓	✓	Aug 2024	7 months
W.005	Construction of footbridge - Scaffold & FRP (superstructure)	✓	✓	✓	✓	Mar 2025	3 months
W.006	Construction of footbridge - Install of precast/prefab elements	✓	✓	✓	✓	Feb 2025	7 months
W.007	Installation of lifts	✓	✓	✓	✓	Jan 2026	6 months
W.008	Modifications to existing Sydney Trains assets	✓	✓	✓	✓	Apr 2026	3 months
W.009	Construction of stairs and canopies	✓	✓	✓	✓	Dec 2025	6 months
W.010	Installation/construction of Sydney Trains services, facilities, rooms and systems	✓	✓	✓	✓	Mar 2026	4 months
W.011	Northern/Harris St work	✓	✓	✓	✓	Feb 2026	6 months
W.012	Demobilisation	✓	✓	✓	✓	Aug 2026	1 month

Note 1: This Stage has been completed and will not be considered further in this DNVIS.
Note 2: Daytime out of hours is 7 am to 8 am and 1 pm to 6 pm on Saturday, and 8 am to 6 pm on Sunday and public holidays.
Note 3: Evening is 6 pm to 10 pm Mondays to Saturdays.
Note 4: Night is 10 pm to 7 am for Mondays to Saturdays and 6 pm to 8 am for Sundays and public holidays.

Table 6-2: Work Scenario Descriptions

ID	Scenario	Description
W.001	Site establishment	Establishment of the work site including: Hoarding installation, tree trimming and removal, temporary relocation of street furniture, installation of temporary site facilities and geotechnical investigations.
W.002	Demolition and removal of all existing structures	Demolition and removal of existing structures to ground level including: current stairs and canopy, current lift shaft structures.
W.003	Construction of footbridge - Piling	Piling for construction of the new footbridge structure.
W.004	Construction of footbridge - Excavation & FRP (substructure)	Excavation for new footbridge foundation and FRP (from reo pour – concrete works).
W.005	Construction of footbridge - Scaffold & FRP (superstructure)	Scaffolding for new footbridge structure and FRP (from reo pour – concrete works).
W.006	Construction of footbridge - Install of precast/prefab elements	Installation of precast/prefabricated elements of the new footbridge structure.
W.007	Installation of lifts	Construction and installation of new lift structure and lift electronics for the footbridge.
W.008	Modifications to existing Sydney Trains assets	Modifications to existing Sydney Trains assets to enable the construction of the footbridge including relocation of Guards Indicators, Closed-Circuit Television (CCTV), Public Address (PA), Over Head Wire System (OHWS), drainage and utility infrastructure, lighting, and platform furniture.
W.009	Construction of stairs and canopies	Construction and installation of new stairs and canopies that form part of the footbridge structure.
W.010	Installation of Sydney Trains services, facilities, rooms and systems	Installation and construction of Sydney Trains services, facilities and rooms including: installation of new lighting, passenger information display system (PIDS), PA, CCTV, ticketing, communications network equipment, ventilation, plumbing and all related systems in accordance with Sydney Trains and Australian Standards. Electrical earthing, bonding protection and stray current mitigation
W.011	Northern/Harris St work	Northern/Harris St landscaping, plaza, bike storage, kerb side transport.
W.012	Demobilisation	Removal of hoarding, reinstate street furniture,

6.2 Construction Source Noise Levels

The assessment uses 'realistic worst-case' scenarios to determine the impacts from the noisiest 15-minute period that is likely to occur for each work scenario, as required by the ICNG. Sound power levels (SWL) for the construction equipment used in the modelling are listed in **Table 6-3**.

Table 6-3: Scenario Noise Source Levels

Item	Sound Power Level		% time operating	W.002	W.003	W.004	W.005	W.006	W.007	W.008	W.009	W.010	W.011	W.012
	L_{eq}	L_{AFmax}												
Crane - Mobile	107	110	30	1	1	1	2	2	2		2	1	1	
Crane truck	98	110	30		1	1	1	1	1	1	1			1
Lighting Tower	80	80	100		2	2	2	2	2	2	2	2	2	
Light Vehicle (accelerating)	95	100	25	4	4	4	4	4	4	4	4	4	4	4
Concrete agitator truck	109	112	100			1	1		1			1	1	
Concrete pump truck	108	111	100			1	1		1			1	1	
Elevated Work Platform	97	97	25	1	1		1	2	3	2	2	2	1	1
Excavator – Tracked (5-12t)	100	105	100	1	1	4			1				2	
Excavator + Hammer (5-12t)[1]	118	123	30	1		1							1	
Generator – attenuated	92	92	100	1	1	1	1	1	1	1	1	1	1	1
Piling Rig – Bored	108	110	100		4								1	
Roller – Vibratory[1]	109	114	100										1	
Saw – Concrete[1]	118	123	30	1	1	1	1	1	1	1	1	1	1	1
Truck – Dump	110	113	25			4								
Truck – Medium Rigid (20t)	103	106	25	4	4	2	2	4	2		2	4	2	4
Truck – truck & dog (30t)	108	111	25											2
Truck – Vacuum	109	112	100	1									1	

Item	Sound Power Level		% time operating	W.002	W.003	W.004	W.005	W.006	W.007	W.008	W.009	W.010	W.011	W.012
	L_{eq}	L_{AFmax}												
Hand tools (electric)	102	105	50	1	1	1	1	2	1	2	2	2	1	2
Telehandler	100	100	100						4		1			
Roller – Non vibratory	104	107	100			1								
Hydrema	109	112	25		3	3	3	3				2	2	
Wacker Packer	108	111	30		2	2	2	2				2	2	
Rattle Gun	108	113	50				2	2	2		2	2		
Total L_{eq}				**117**	**118**	**118**	**116**	**116**	**115**	**113**	**115**	**116**	**119**	**114**
Highest L_{AFMax}				**123**	**123**	**123**	**123**	**123**	**123**	**123**	**123**	**123**	**123**	**123**

Note 1: Equipment classed as 'annoying' in the ICNG and includes a 5 dB correction.

Note 2: Individual sound power levels have been adopted from the Sydney Metro CNVS, TfNSW *Construction Noise and Vibration Strategy,* Australian Standard (AS) 2436, DEFRA Noise Database, and British Standard (BS) 5228-1:2008+A1:2014.

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6.3 Construction Noise Modelling

Site related noise emissions were modelled using the CadnaA Ver2023 noise prediction software implementing the ISO 9613 algorithm. To complete this, a representative 3-D model within the software was constructed of the site and surrounding receivers. Factors that are addressed in the modelling are:

- equipment sound level emissions (in octave bands) and locations;
- screening effects from buildings and barriers;
- receiver locations;
- ground topography;
- meteorological effects;
- noise attenuation due to geometric spreading; and
- ground absorption and atmospheric absorption.

6.4 Predicted Construction Noise Levels

A summary of the number of buildings where NML exceedances were predicted for the various construction scenarios is shown in **Table 6-4** and **Table 6-5. Appendix A** presents maps of these predicted impacts. No residential receivers are expected to experience noise levels above the "Highly Affected" threshold of 75 dBA. **Appendix B** presents predicted noise levels for all receivers for all construction scenarios.

Works for all scenarios are expected to occur outside standard working hours. The OOH works are likely to occur during daytime, evening and night-time. Accordingly, the NML for OOH works in the table is for night-time, as this assesses the worst potential impact.

It should be noted that the predictions are presented for a worst-case scenario where all equipment are operating for all or part of the $L_{Aeq,15min}$ period. In reality, there would be periods where construction noise levels would be much lower, as well as periods where no equipment would be in use.

L_{Amax} predictions considers the cumulative of the L_{Aeq} level and the L_{Amax} level from the maximum noise event. Predictions indicate that the sleep disturbance screening criteria would be exceeded by up to 12 dB for all work scenarios. L_{Amax} predictions were based off the usage of the concrete saw or hydraulic hammer. When these activities are not in use, the received L_{Amax} noise level would be at least 5 dB lower. L_{Amax} levels were not predicted to exceed the RNP screening level of 65 dBA for any of the work scenarios.

Assuming a typical 10 dB attenuation from a partially opened window, internal noise levels from L_{Amax} events could be up to 54 dB at the closest residential receivers. The RNP notes that "*Maximum internal noise levels below 50 dBA to 55 dBA are unlikely to cause awakening reactions*".

The number of L_{Amax} events would depend on the usage of the high intensive plant (i.e. concrete saw or hydraulic hammer). These activities have conservatively been assumed to be in use for 30% of the night period. However, based on the predicted noise level, there could a lower number of awakening reactions.

Recommendations for mitigation and management are provided in Section 8.

Table 6-4: Overview of NML Exceedances, Residential Receivers

ID	Scenario	Number of Receivers Exceeding NMLs[2]																	
		HNA[1]	Approved Hours				Out of Hours											Sleep Disturbance	
			Day				Day				Evening				Night				
			1-10 dB	11-20 dB	21-30 dB	>30 dB	1-10 dB	11-20 dB	21-30 dB	>30 dB	1-10 dB	11-20 dB	21-30 dB	>30 dB	1-10 dB	11-20 dB	21-30 dB	>30 dB	NPfI 52 dBA	RNP 65 dBA
W.002	Demolition and removal of all existing structures	0	**68**	0	0	0	**239**	**9**	0	0	**239**	**9**	0	0	**272**	**15**	0	0	**62**	0
W.003	Piling	0	**93**	0	0	0	**263**	**15**	0	0	**263**	**15**	0	0	**326**	**24**	0	0	**74**	0
W.004	Excavation & FRP (substructure)	0	**119**	**1**	0	0	**306**	**18**	0	0	**306**	**18**	0	0	**352**	**28**	0	0	**82**	0
W.005	Scaffold & FRP (superstructure)	0	**175**	**7**	0	0	**371**	**48**	0	0	**371**	**48**	0	0	**391**	**66**	**2**	0	**112**	0
W.006	Install of precast/prefab elements	0	**164**	**7**	0	0	**359**	**38**	0	0	**359**	**38**	0	0	**376**	**59**	0	0	**108**	0
W.007	Installation of lifts	0	**149**	**6**	0	0	**347**	**31**	0	0	**347**	**31**	0	0	**369**	**51**	0	0	**99**	0
W.008	Modifications to existing Sydney Trains assets	0	**12**	0	0	0	**86**	0	0	0	**86**	0	0	0	**122**	0	0	0	**43**	0
W.009	Construction of stairs and canopies	0	**134**	**6**	0	0	**318**	**28**	0	0	**318**	**28**	0	0	**352**	**41**	0	0	**95**	0
W.010	Sydney Trains services, facilities, rooms and systems	0	**74**	0	0	0	**213**	**13**	0	0	**213**	**13**	0	0	**208**	**18**	0	0	**65**	0
W.011	Northern/Harris St	0	**129**	**1**	0	0	**310**	**24**	0	0	**310**	**24**	0	0	**302**	**32**	0	0	**83**	0
W.012	Demobilisation	0	**20**	0	0	0	**98**	0	0	0	**98**	0	0	0	**129**	**1**	0	0	**43**	0
W.013	W.003 + W.004	0	**203**	**9**	0	0	**462**	**50**	0	0	**462**	**50**	0	0	**505**	**75**	0	0	**130**	0
W.014	W.003 + W.011	0	**206**	**9**	0	0	**414**	**60**	0	0	**414**	**60**	0	0	**485**	**82**	0	0	**133**	0

Note 1: Highly noise affected, based on ICNG definition (i.e. predicted $L_{Aeq(15minute)}$ noise at residential receiver is 75 dBA or greater).
Note 2: Based on worst-case predicted noise levels.

Table 6-5 Overview of NML Exceedances, Non-residential Receivers

ID	Scenario	Number of Receivers Exceeding NMLs[2]																	
		HNA[1]	Approved Hours				Out of Hours											Sleep Disturbance	
			Day				Day				Evening				Night				
			1-10 dB	11-20 dB	21-30 dB	>30 dB	1-10 dB	11-20 dB	21-30 dB	>30 dB	1-10 dB	11-20 dB	21-30 dB	>30 dB	1-10 dB	11-20 dB	21-30 dB	>30 dB	NPfl 52 dBA	RNP 65 dBA
W.002	Demolition and removal of all existing structures	-	**1**	0	0	0	**1**	0	0	0	**1**	0	0	0	**1**	0	0	0	-	-
W.003	Piling	-	**1**	0	0	0	**1**	0	0	0	**1**	0	0	0	**1**	0	0	0	-	-
W.004	Excavation & FRP (substructure)	-	**2**	0	0	0	**2**	0	0	0	**2**	0	0	0	**2**	0	0	0	-	-
W.005	Scaffold & FRP (superstructure)	-	**3**	0	0	0	**3**	0	0	0	**3**	0	0	0	**3**	0	0	0	-	-
W.006	Install of precast/prefab elements	-	**3**	0	0	0	**3**	0	0	0	**3**	0	0	0	**3**	0	0	0	-	-
W.007	Installation of lifts	-	**3**	0	0	0	**3**	0	0	0	**3**	0	0	0	**3**	0	0	0	-	-
W.008	Modifications to existing Sydney Trains assets	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
W.009	Construction of stairs and canopies	-	**3**	0	0	0	**3**	0	0	0	**3**	0	0	0	**3**	0	0	0	-	-
W.010	Sydney Trains services, facilities, rooms and systems	-	**1**	0	0	0	**1**	0	0	0	**1**	0	0	0	**1**	0	0	0	-	-
W.011	Northern/Harris St	-	**2**	0	0	0	**2**	0	0	0	**2**	0	0	0	**2**	0	0	0	-	-
W.012	Demobilisation	-	**1**	0	0	0	**1**	0	0	0	**1**	0	0	0	**1**	0	0	0	-	-
W.013	W.003 + W.004	-	**3**	0	0	0	**3**	0	0	0	**3**	0	0	0	**3**	0	0	0	-	-
W.014	W.003 + W.011	-	**3**	0	0	0	**3**	0	0	0	**3**	0	0	0	**3**	0	0	0	-	-

Note 1: Highly noise affected, based on ICNG definition (i.e. predicted LAeq(15minute) noise at residential receiver is 75 dBA or greater).
Note 2: Based on worst-case predicted noise levels.

6.5 Road Traffic Noise

The FSM project has the potential to generate up to 576 light vehicle movements and 384 heavy vehicle movements per day. That would be a total of 960 vehicle movements (in and out) per day during peak traffic generating periods. The proposed construction traffic route to and from the site passes residential receivers along the Great Western Highway and Glossop Street. A summary of the vehicle data for the assessment and predicted increase in traffic noise levels are shown in **Table 6-6**.

Table 6-6: Change in Road Traffic Noise Level

Road Name	Vehicle type	Existing Traffic Volumes[1]		Project Traffic Volumes		Change in Noise Level (dBA)	
		Day[2]	Night[3]	Day	Night	Day	Night
Glossop Street	Light Vehicles	15,216	3,046	360	216	≤0.2	≤1.1
	Heavy Vehicles	3,340	229	240	144		
Great Western Hwy	Light Vehicles	34,194	6,299	360	216	≤0.2	≤0.7
	Heavy Vehicles	3,382	332	240	144		

Note 1: Existing traffic volumes adopted from Sydney Metro Western Sydney Airport EIS (Technical Paper 2 - Noise and Vibration).
Note 2: Day is 7am-10pm
Note 3: Night is 10pm-7am

Table 6-6 indicates that the road traffic noise level could increase by up to 1.1 dB due to construction generated road traffic. This change in noise level is generally not perceptible to the average person. Furthermore, the existing road traffic noise levels are above the relevant road traffic noise criteria. On this basis, no noise impact is expected.

6.6 Ground-borne Noise

The CNVS states that these criteria are only applicable when ground-borne noise levels are higher than the airborne noise levels.

All the works previously identified with the potential to cause vibration impacts are surface works. Levels within receiver buildings are predicted to be very low, and below the ground-borne noise management levels. Importantly, in these cases noise impacts from airborne noise will be worse than ground-borne noise. A detailed ground-borne noise assessment is not required.

7 VIBRATION ASSESMENT

7.1 Summary of Vibration Intensive Works

Plant with the potential for vibration impacts that will be used during this project include:

- Vibratory roller;
- Bored piling rig; and
- Excavators, particularly with hammer attachment.

The Transport for NSW *Construction Noise and Vibration Strategy* suggests safe working distances between items of plant used for construction and vibration sensitive receivers. If these safe working distances are maintained, no adverse impacts from vibration intensive works are likely to occur at receivers in terms of human response or cosmetic damage. The safe working distances for plant items relevant to this assessment are presented in **Table 7-1**. The full extract can be found in Appendix D of the Transport for NSW *Construction Noise and Vibration Strategy*.

Table 7-1: Safe Working Distances of Vibration Intensive Equipment

Plant Item	Rating/Description	Minimum Distance		
		Cosmetic Damage		Human Comfort (NSW EPA Guideline)
		Residential and Light Commercial (BS 7385)	Heritage Items (DIN 4150, Group 3)	
Vibratory Roller	<50 kN (1–2 tonne)	5 m	11 m	15 m to 20 m
	<100 kN (2–4 tonne)	6 m	13 m	20 m
Small Hydraulic Hammer	300 kg (5 to 12 t excavator)	2 m	5 m	7 m
Medium Hydraulic Hammer	900 kg (12 to 18 t excavator)	7 m	15 m	23 m
Piling Rig – Bored	≤ 800 mm	2 m (nominal)	5 m	7 m
Jackhammer	Hand held	1 m (nominal)	3 m	2 m

The minimum working distances are indicative only and will vary depending on the particular item of plant being used, the type and age of the receiving build, the dominant frequency of the construction vibration levels and the local ground conditions. Where vibration activities are to occur within the minimum distances alternate methodology should be considered where feasible and reasonable or attended vibration measurements are undertaken at the start of works to verify the site-specific minimum working distances.

7.2 Vibration Assessment

Vibration intensive items of equipment that would be required during the FSM project include small vibratory roller (ie 1-2 tonne), small hydraulic hammer (ie 5 – 12t excavator) and Bored piling rig. These items of equipment are required during *W.002 – Demolition and removal of all existing structures*, *W.003 – Construction of footbridge – Piling,* and *W.011 – Northern/Harris St work.*

The minimum working distances for vibration intensive work associated with the FSM project are shown in **Table 7-1**. Where vibration intensive work is undertaken at greater distances, impacts are not considered likely.

The predicted impacts during vibration intensive works are shown for small vibratory rollers in **Figure 7-1**, small hydraulic hammers in **Figure 7-2**, and bored piling rig in **Figure 7-3**. These figures show sensitive receiver and heritage structure locations relative to the works and zone of impacts. The predictions are representative of the highest vibration levels that would likely be experienced by the nearest receivers and heritage structures when works are at their closest to these.

The assessment of vibration intensive work shows:

- The cosmetic damage screening criteria have the potential to be exceeded at the following St Marys Station structures:
    - St Marys Commuter Car Park
    - Platforms 1/2 and 3/4 (Heritage listed - 1888 & 1942-3)
    - Platforms 3/4 building (Heritage Listed - 1888)

  Where this occurs the requirements of CoA E48 will be implemented, refer to **Table 8-1** (NV32).

- The human comfort criteria are not predicted to be exceeded at any residential locations. There is potential for human comfort impacts at three industrial receiver buildings to the north during the vibratory rolling activity at Autopak-Vetlab Group - 39 Harris St, St Marys NSW 2760 (indicated in **Figure 7-1**).
- The St Marys Station buildings/structures are heritage listed, however are not deemed structurally unsound, or more sensitive to vibration, refer Section 3.3.
- Vibration Impacts to Sensitive Scientific or Medical Equipment are not anticipated at the Emerald Medical Centre - 65A Queen Street, Belar St, St Marys NSW 2760.
- There is a potential for vibration Impacts to Sensitive Scientific or Medical Equipment at the Autopak-Vetlab Group - 39 Harris St, St Marys NSW 2760, during the vibratory rolling activities undertaken for *W.011 – Northern/Harris St work.*

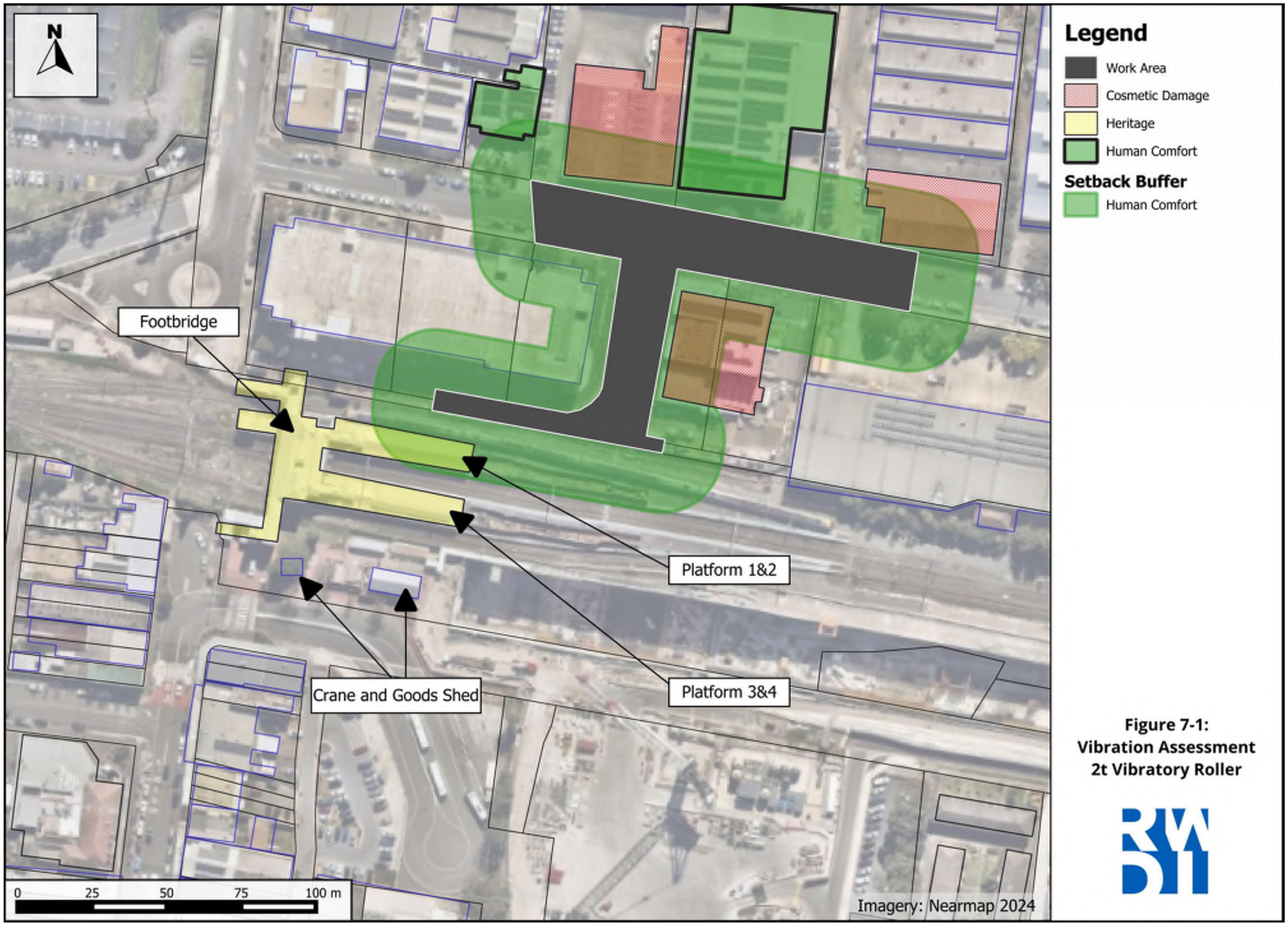


Figure 7-1:
Vibration Assessment
2t Vibratory Roller

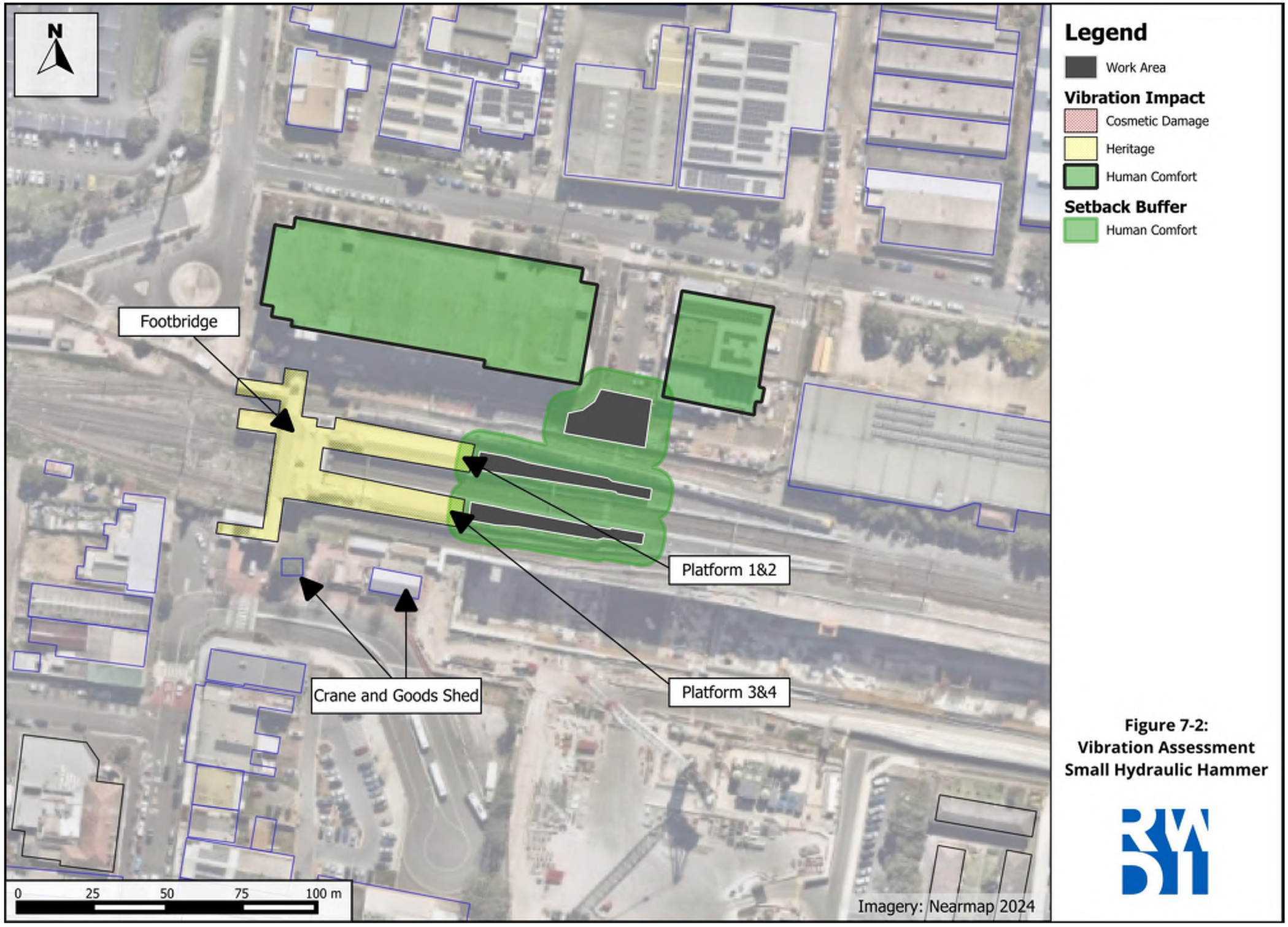


Figure 7-2:
Vibration Assessment
Small Hydraulic Hammer

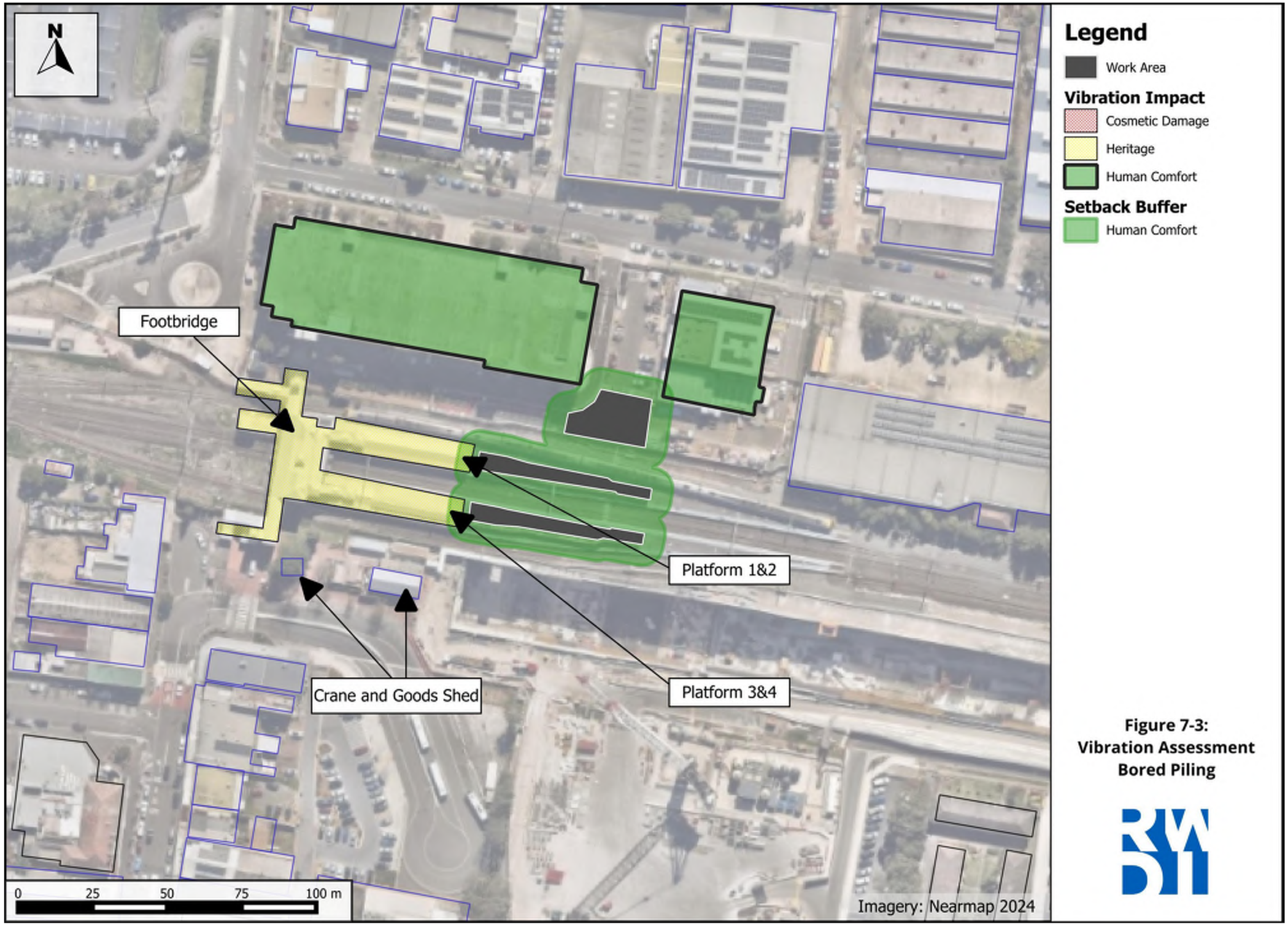


Figure 7-3:
Vibration Assessment
Bored Piling

8 MITIGATION AND MANAGEMENT MEASURES

8.1 Standard Mitigation Measures

The overall objective of construction noise and vibration management is to limit impacts on nearby receivers. This can be achieved by implementing the requirements of the Sydney Metro CNVS which reflects the intent and purpose of the ICNG. Therefore, the following hierarchical approach should be used as far as practicable:

- Where site noise levels are above goals or criteria, implement reasonable and feasible good practice environmental controls to minimise noise and vibration emissions and/or exposure duration at affected receivers.
- Where the use of best practice environmental control mitigation measures do not adequately address exceedances of goals or criteria, adopt alternative measures/methodologies to minimise impacts on the community.
- Liaise with the local community regarding scheduled works which are predicted to have increased impacts.

It is recommended that the standard noise mitigation measures presented in Section 4 Table 11 of the Sydney Metro CNVS be adopted for all works undertaken as part of the Project. The management, source control and path control measures should be implemented.

8.2 Project Specific Mitigation and Management Measures

Noise impacts may be apparent at the nearest receivers at certain times during the Project. The Project should apply all feasible and reasonable mitigation measures to minimise the impacts, particularly during highly noise intensive work, such as concrete sawing, rock hammering and vibratory rolling.

The following measures shown in **Table 8-1** must be implemented in accordance with the CEMP and CoA E47 to minimise the potential impacts from the works. Reference to applicable CoA are provided for each of these measures.

Table 8-1: Project Specific Mitigation Measures

ID	Project stage	Measure	Reference / Notes
NV01	Scheduling	Where feasible and reasonable, construction should be carried out during the approved Project working hours. Work generating high noise and/or vibration levels should be scheduled during less sensitive time periods.	CoA E38 CoA E49
NV02		Highly noise intensive works (ie concrete sawing, rock hammering and vibratory rolling) should only be undertaken during the following approved hours, unless otherwise assessed and justified: 8 am to 6 pm Mondays to Fridays, inclusive; and 8 am to 1 pm Saturdays; and at no time on Sundays or public holidays.	CoA E39

ID	Project stage	Measure	Reference / Notes
NV03		Provide appropriate respite periods as per the Sydney Metro CNVS when highly noise intensive works are undertaken or during periods of high noise impacts (eg one hour of respite for every three hours of noise intensive work).	CoA E39 CoA E49
NV04		Carry out community consultation to determine the need and frequency of respite periods, as required by the CoA.	CoA E56, E57
NV05	Scheduling	Co-ordination should occur between potentially interacting projects to minimise concurrent or consecutive works in the same areas, where possible.	CoA E56
NV06		Noise generating work in the vicinity of potentially-affected community, religious, educational institutions and noise and vibration-sensitive businesses and critical working areas (such as theatres, laboratories and operating theatres) resulting in noise levels above the NMLs must not be timetabled within sensitive periods, unless other reasonable arrangements with the affected institutions are made at no cost to the affected institution.	CoA E45
NV07	Site Layout	Compounds and work areas should be one-way to minimise the need for vehicles to reverse.	CoA E46, Best Practice
NV08		Stationary sources of noise, such as generators, should be located away from sensitive receivers.	CoA E46, Best Practice
NV09	Contractor management	Training should be provided to project personnel, including relevant sub-contractors, on noise and vibration requirements and the location of sensitive receivers during inductions and toolbox talks.	CoA E46, Best Practice
NV10	Heavy Vehicles	Delivery vehicles should be fitted with straps rather than chains for unloading, wherever possible.	CoA E46, Best Practice
NV11		Truck drivers should avoid compression braking as far as practicable.	CoA E46, Best Practice
NV12		Trucks should not idle near to sensitive receivers (eg residential receivers).	CoA E46, Best Practice
NV13	Path Control	Construction hoarding around the site perimeter should be erected to control the dispersion of noise offsite.	CoA E46, Best Practice
NV14		Additional portable noise barriers may also be used around particularly noisy equipment such as hydraulic hammering and concrete saws, where necessary.	CoA E46, Best Practice
NV15		Use onsite structures to shield sensitive receivers from noise such as site shed placement, hoarding, shipping containers and consideration of site topography when situating plant.	CoA E46, Best Practice

ID	Project stage	Measure	Reference / Notes
NV16	Noise/ Vibration source mitigation	Plant and equipment should be regularly services with low sound power levels, ie noise levels of plant and equipment must have operating Sound Power Levels (LW) compliant with the Sydney Metro CNVS and presented in Section 6.1.1.	CoA E46, Best Practice
NV17	Noise/ Vibration source mitigation	Alternative construction methodologies and measures that minimise noise and vibration levels during noise intensive works would be investigated and implemented where feasible and reasonable. Use the minimum sized equipment necessary to complete the work and where possible, use alternative, low-impact construction techniques such as excavator grab instead of hydraulic hammer and bored piling instead of impact piling.	CoA E46, CoA E49 Best Practice
NV18		Plant and machinery should be fitted with manufacturer supplied noise suppression devices and maintained where required.	CoA E46, Best Practice
NV19		Power tools should use mains power where possible rather than generators.	CoA E46, Best Practice
NV20		Shut down equipment / machinery, including generators, when not in operation.	CoA E46, Best Practice
NV21		Avoid dropping materials from a height and dampen or line metal trays, as necessary.	CoA E46, Best Practice
NV22		Ensure equipment is operated in the correct manner.	CoA E46, Best Practice
NV23		Where night-time works are required, equipment/trucks should use broadband (non-tonal) reversing alarms.	CoA E46, Best Practice
NV24	Community consultation	Engagement and consultation should be carried out with the affected communities to understand their preferences for mitigation and management measures, including respite.	CoA E47, E57
NV25		Provide appropriate notice to the affected sensitive receivers prior to starting works and before any noisy periods of works.	CoA E45, E46, E49, E57, Best Practice
NV26		Provide signage with a 24 hour contact number.	CoA E46, B1, Best Practice
NV27		Owners and occupiers of properties at risk of exceeding the screening criteria for cosmetic damage must be notified before works that generate vibration commences in the vicinity of those properties. If the potential exceedance is to occur more than once or extend over a period of 24 hours, owners and occupiers are to be provided a schedule of potential exceedances on a monthly basis for the duration of the potential exceedances, unless otherwise agreed by the owner and occupier.	CoA E48

ID	Project stage	Measure	Reference / Notes
NV28		Consultation must be undertaken with Autopak-Vetlab Group located at 39 Harris St, St Marys NSW, prior to construction to confirm their sensitivity to vibration (eg critical working areas and/or sensitive scientific equipment). Vibration monitoring will be required if sensitive work areas or sensitive equipment are located on the property, refer NV32.	CoA E46, Best Practice
NV29	Community consultation	Where there are complaints regarding noise, review and implement additional control measures, where feasible and reasonable.	CoA B4, E46, E49 Best Practice
NV30	Monitoring	Noise monitoring should be undertaken within the first month of work and periodically throughout the construction period and cover the range of activities being undertaken at the site during day, evening and night-time periods	CoA C15
NV31		Conduct noise and/or vibration monitoring in response to any formal complaints received.	CoA B4, D46, Best Practice
NV32		Conduct vibration monitoring if vibration intensive works are to be undertaken within the minimum working distances of sensitive receivers or structures and where exceedances have been predicted. Vibration testing must be conducted during vibration generating activities that have the potential to impact on Heritage items to verify minimum working distances to prevent cosmetic damage. In the event that the vibration testing and attended monitoring shows that the preferred values for vibration are likely to be exceeded, LOR must review the construction methodology and, if necessary, implement additional mitigation measures. Such measures must include, but not be limited to, review or modification of construction techniques. A temporary protection plan to outline protection measures required for significant heritage fabric during activities causing potential vibration impacts would be prepared prior to commencement of works. The advice of a heritage specialist must be sought on methods and locations for installing equipment used for vibration, movement and noise monitoring at Heritage items.	CoA E46, E54, E55 Best Practice
NV33		Noise monitoring should be undertaken where NMLs are predicted to be exceeded as defined by the AMM outlined in Section 8.4 Where site related airborne noise is measured to exceed predicted levels in this report, additional mitigation measures must be considered to reduce impacts.	CoA E46, E49 Best Practice
NV34	Building Surveys	Condition surveys of buildings and structures at risk of damage must be undertaken prior to the commencement of construction. For heritage buildings and structures the surveys would consider the heritage values of the structure in consultation with a heritage specialist.	CoA E55, E84

8.3 Measures Identified Through Consultation

In accordance with CoA E47, consultation with affected sensitive land users to identify additional mitigation and management measures will be undertaken via community notifications with an invite to inquire / raise issues as necessary. Where additional measures are identified via ongoing consultation, they will be incorporated into an update of this DNVIS.

Community consultation is to be undertaken according to the Overarching Community Communication Strategy (OCCS). Consultation is to be implemented and tracked through the measures outlined in the OCCS. The OCCS outlines key risks and issues associated with the Project. A summary of the identified issues related to noise and vibration are as follows:

- Information about construction
- Construction noise and vibration
- Concerns about property damage
- Cumulative impacts of other projects

A range of proposed community consultation/management measures have been identified to address these key issues. Some of these measures include:

- Early engagement with neighbouring stakeholders on likely noise and vibration impacts
- Implementation of mitigation measures in the CEMP, DNVIS and OOHW Permit(s)
- Noise minimised through, use of appropriate plant, tools and techniques and programming
- High impact noise works staged with respite periods as required by the CSSI Approval
- Noise and or vibration monitoring offered in response to complaints

8.4 Additional Mitigation Measures

The Sydney Metro Construction Noise and Vibration Strategy provides Additional Mitigation Measures (AMM) that are to be assessed when all Standard Mitigation Measures have been considered and there is still potential to exceed the NML. In accordance with the CEMP and CoA E43 these AMM must be implemented where required for FSM.

The AMM from the CNVS are presented in **Table 8-2**. The period and corresponding exceedance of the NML that the CNVS applies each measure to is presented in **Table 8-3**.

Table 8-2: Additional Mitigation Measures

Measure	Abbreviation
Alternative accommodation	AA
Monitoring	M
Individual briefings	IB
Letterbox drops	LB
Project specific respite offer	RO
Phone calls	PC
Specific notifications	SN

Table 8-3: Additional Noise Mitigation Measures Matrix

Time Period		Mitigation Measures			
		Predicted $L_{Aeq,15min}$ Noise Level above NML			
		0 to 10 dB	10 to 20 dB	20 to 30 dB	>30 dB
Standard	Mon-Fri (7am-6pm)	-	LB	LB, M, SN	LB, M, SN
	Sat (8am-1pm)				
	Sun / Pub Hol (Nil)				
OOHW Period 1	Mon-Fri (6pm-10pm)	LB	LB, M	LB, M, SN, RO	LB, M, SN, IB, PC, RO
	Sat (1pm-10pm)				
	Sun / Pub Hol (8am-6pm)				
OOHW Period 2	Mon-Fri (10pm-7am)	LB	LB, M, SN, RO	LB, M, SN, IB, PC, RO, AA	LB, M, SN, IB, PC, RO, AA
	Sat (10pm-8am)				
	Sun / Pub Hol (6pm-7am)				

Based on the predictions summarised in the Section 6.4, additional mitigation will be required to be considered for works during all time periods.

8.5 Respite Periods

In addition to the respite triggered by the AMM. The following respite requirements are applicable to the FSM project:

- 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:
    - reschedule any work to provide respite to impacted noise sensitive land use(s) so that the respite is achieved in accordance with CoA E57; or
    - consider the provision of alternative respite or mitigation to impacted noise sensitive land use(s); and
    - provide documentary evidence to the ER in support of any decision made by the Proponent in relation to respite or mitigation.
- The consideration of respite must also include all other approved Critical SSI, SSI and SSD projects which may cause cumulative and / or consecutive impacts at receivers affected by the delivery of the CSSI.
- In order to undertake out-of-hours work outside the work hours specified under CoA E38, appropriate respite periods for the out-of-hours work must be identified in consultation with the community at each affected location on a regular basis. 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 ER, EPA and the Planning Secretary prior to the out-of-hours work commencing.

Note: Respite periods can be any combination of days or hours where out-of-hours work would not be more than 5 dBA above the RBL at any residence.

8.6 Community Notification

As outlined in the CEMP, consultation will be conducted in accordance with the OCCS. Community notifications are required where triggered by the AMM. As outlined in CoA E57 community consultation of out-of-hours work must include (but not be limited to) providing the community with:

- a progressive schedule for periods no less than three (3) months, of likely out-of-hours work;
- a description of the potential work, location and duration of the out-of-hours work;
- the noise characteristics and likely noise levels of the work; and
- likely mitigation and management measures which aim to achieve the relevant NMLs under CoA E43 (including the circumstances of when respite or relocation offers will be available and details about how the affected community can access these offers).

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 ER, EPA and the Planning Secretary prior to the out-of-hours work commencing.

8.7 Monitoring

Noise and vibration monitoring will be undertaken in accordance with the CEMP and Sydney Metro CNVS.

Monitoring will be carried out at the commencement of activities to confirm that actual noise levels are consistent with the predictions presented in this DNVIS, and that the management measures that have been implemented are effective.

Monitoring locations will be focused to the most impacted receivers identified in **Appendix A**. Indicative locations are identified in **Table 8-4**, however, these will be subject to provision of safe access and the specific location of work being undertaken at the time of monitoring.

Table 8-4: Indicative Monitoring Locations

Scenario ID	Description	Indicative Noise Monitoring Location	Indicative Vibration Monitoring Location
W.001	Site establishment	7/3 Station St, St Marys	-
W.002	Demolition and removal of all existing structures	7/3 Station St, St Marys	Platforms 1/2 and 3/4 (including building)
W.003	Piling	7/3 Station St, St Marys	Platforms 1/2 and 3/4 (including building)
W.004	Excavation & FRP (substructure)	7/3 Station St, St Marys	-
W.005	Scaffold & FRP (superstructure)	7/3 Station St, St Marys	-
W.006	Install of precast/prefab elements	7/3 Station St, St Marys	-
W.007	Installation of lifts	7/3 Station St, St Marys	-
W.008	Modifications to existing Sydney Trains assets	7/3 Station St, St Marys	-
W.009	Construction of stairs and canopies	7/3 Station St, St Marys	-
W.010	Sydney Trains services, facilities, rooms and systems	7/3 Station St, St Marys	-
W.011	Northern/Harris St work	7/3 Station St, St Marys	Platforms 1/2
		7/3 Station St, St Marys	St Marys Commuter Car Park
		7/3 Station St, St Marys	Autopak-Vetlab Group 39 Harris St, St Marys
W.012	Demobilisation	7/3 Station St, St Marys	-

8.8 Alternative Construction Methods

Alternative construction methods have been considered for activities including tree clearing (e.g., electric chainsaws). Use of these methods will depend on the specific circumstances and therefore the worst-case scenario is included for the purpose of this DNVIS.

Alternative methods have been considered and implemented for vibratory rollers and hydraulic hammers (i.e., smaller sized equipment). DNVIS modelling has incorporated the use of small vibratory rollers (i.e., <50 kN, 1– 2 tonne) and small hydraulic hammers (i.e., 300 kg, 5 to 12 tonne excavator).

9 CUMULATIVE IMPACTS

Cumulative construction impacts can occur where multiple construction projects are being completed in the same area at the same time. To minimise the risk of cumulative impacts LOR will consult with proponents of other construction works near the FSM project worksite and take reasonable steps to coordinate works to minimise cumulative noise and vibration impact and coordinate respite for affected sensitive receivers, to satisfy CoA E56.

Monthly environmental cumulative impacts meetings are hosted by Sydney Metro where all contractors working on the SM-WSA project detail upcoming scope for the month. Monthly Traffic and Transport Liaison Group (TTLG) meetings are held between Councils, Sydney Metro and other Contractors to discuss upcoming scope for the following month. Possession Co-ordination meetings between Sydney Trains and Sydney Trains Contractors are also held to discuss upcoming possession works.

10 CONCLUSION AND RECOMMENDATIONS

Noise emissions from the FSM project have been predicted to the surrounding receivers. Noise levels are expected to exceed the NMLs at the closest receivers surrounding work areas for some activities.

Vibration has been assessed at the nearest sensitive receivers and heritage structures surrounding the FSM project. There is potential for both human comfort and cosmetic damage impacts at the closest buildings/structures during vibration generating activities.

Engagement and consultation must be carried out with the affected receivers to understand noise/vibration sensitivity and their preferences for mitigation and management measures, including respite.

A number of mitigation and management measures have been recommended. Where feasible and reasonable these must be applied to the FSM project to control and minimise the impacts during construction as far as practicable.

Recommendations during commencement of each work scenario:

- Select plant and equipment which is equivalent or quieter than that adopted in the assessment
- Undertake condition surveys of buildings and structures at risk of damage prior to the commencement of construction
- Implement additional mitigation measures as detailed in the Sydney Metro CNVS
- Undertake noise and vibration monitoring during work to confirm impacts.

11 STATEMENT OF LIMITATIONS

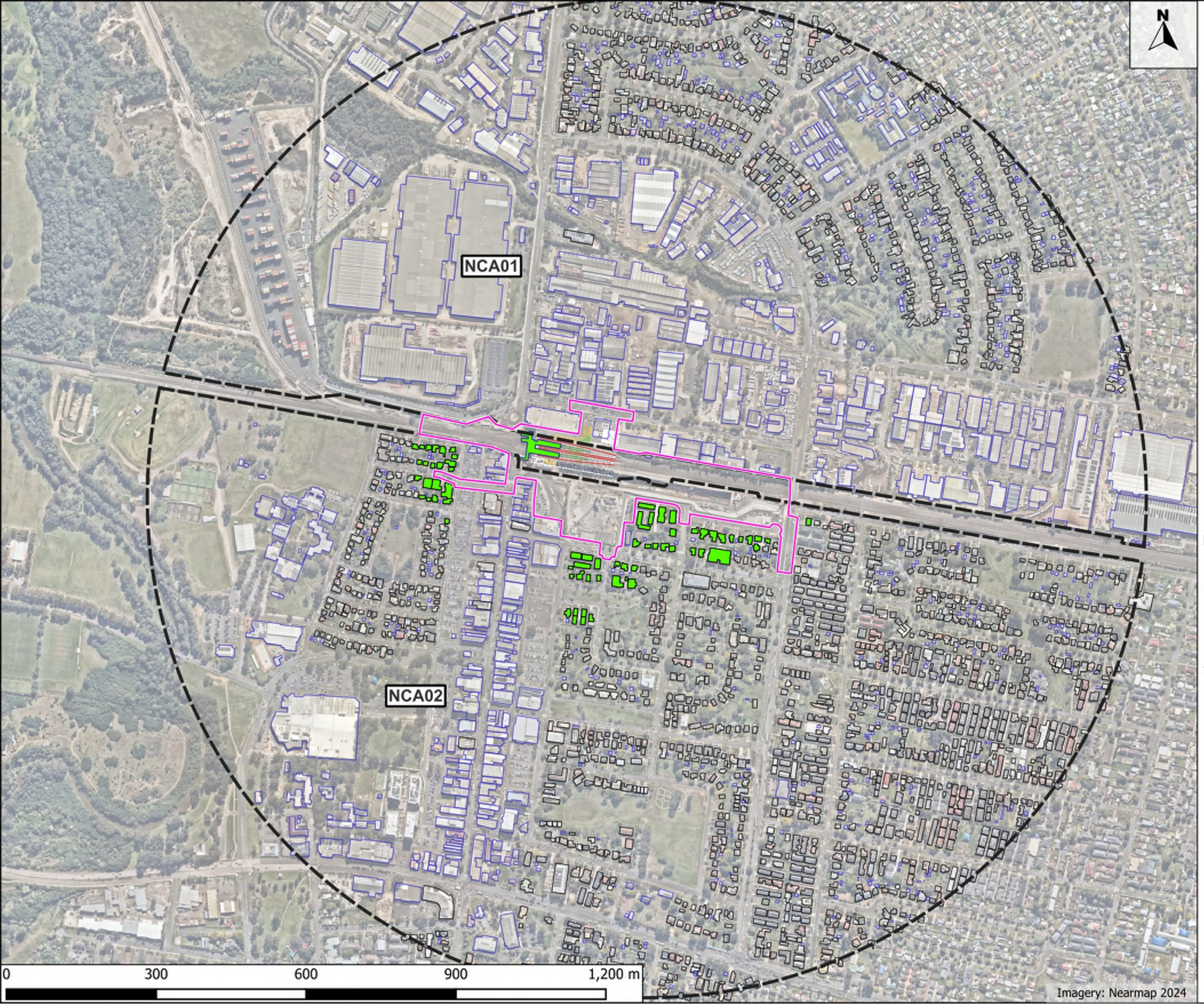
This report entitled *St Marys Footbridge Detailed Noise and Vibration Impact Statement* was prepared by RWDI Australia Pty Ltd ("RWDI") for *Laing O'Rourke* ("Client"). The findings and conclusions presented in this report have been prepared for the Client and are specific to the project described herein ("Project"). The conclusions and recommendations contained in this report are based on the information available to RWDI when this report was prepared. Because the contents of this report may not reflect the final design of the Project or subsequent changes made after the date of this report, RWDI recommends that it be retained by Client during the final stages of the project to verify that the results and recommendations provided in this report have been correctly interpreted in the final design of the Project.

The conclusions and recommendations contained in this report have also been made for the specific purpose(s) set out herein. Should the Client or any other third party utilize the report and/or implement the conclusions and recommendations contained therein for any other purpose or project without the involvement of RWDI, the Client or such third party assumes any and all risk of any and all consequences arising from such use and RWDI accepts no responsibility for any liability, loss, or damage of any kind suffered by Client or any other third party arising therefrom.

Finally, it is imperative that the Client and/or any party relying on the conclusions and recommendations in this report carefully review the stated assumptions contained herein and to understand the different factors which may impact the conclusions and recommendations provided.

APPENDIX A

NOISE IMPACT MAPS



Legend

- Project Boundary

Receivers

- Residential
- Other Sensitive Receivers

Noise Impact

- 1-10 dB
- 11-20 dB
- 21-30 dB
- > 30dB
- Highly Affected

PROJECT:

Footbridge at St Marys Station
DNVIS

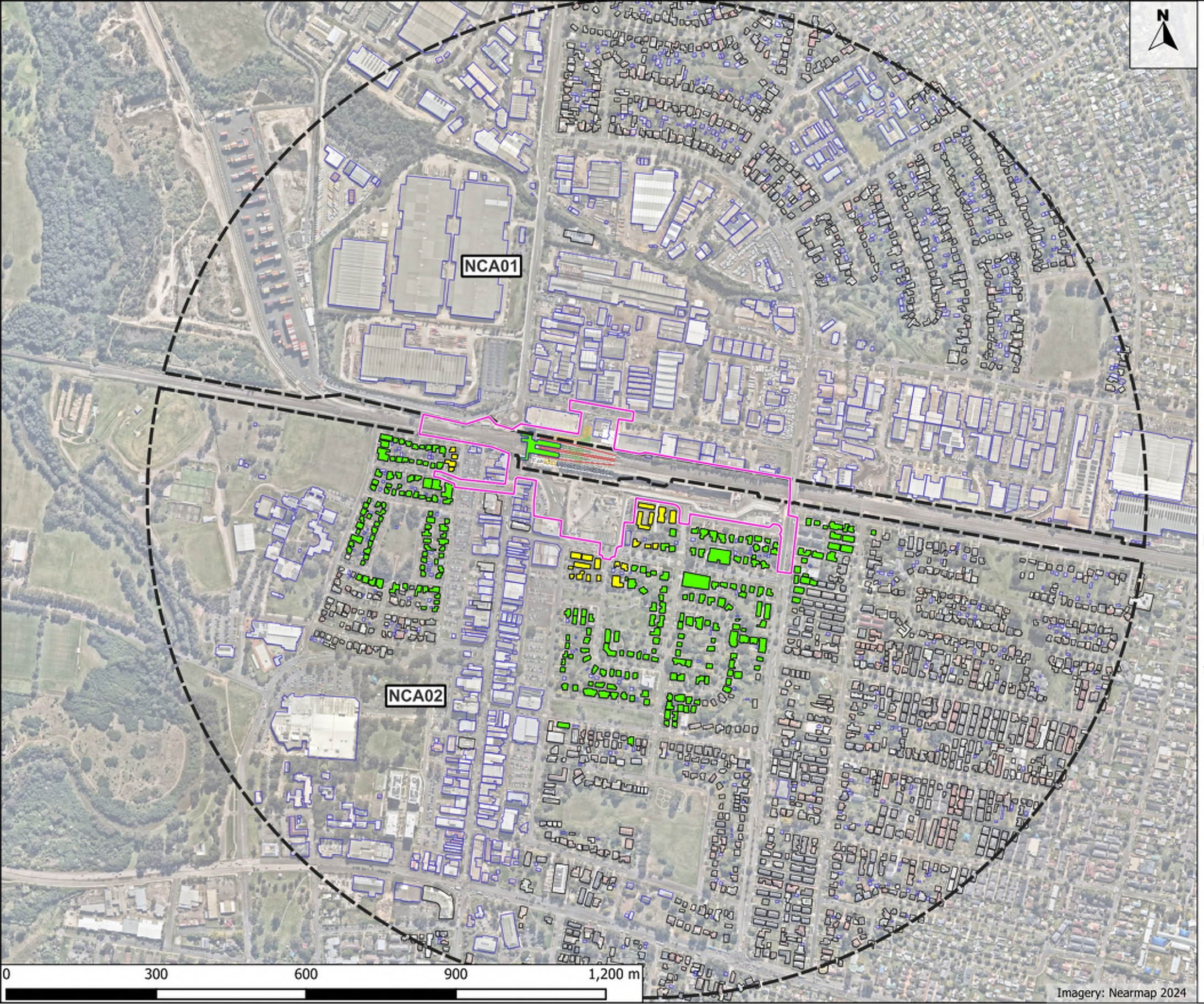
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Laing O'Rouke Australia Construction Pty Ltd

TITLE:

w0002
Demolition and removal of all existing structures
Day

PROJECT No.:	REVISION:
2305915.03	A
PREPARED:	APPROVED:
PTT	RML
EXPORTED:	SHEET SIZE:
4/10/2024	A3



Legend

- Project Boundary

Receivers

- Residential
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Noise Impact

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PROJECT:

Footbridge at St Marys Station
DNVIS

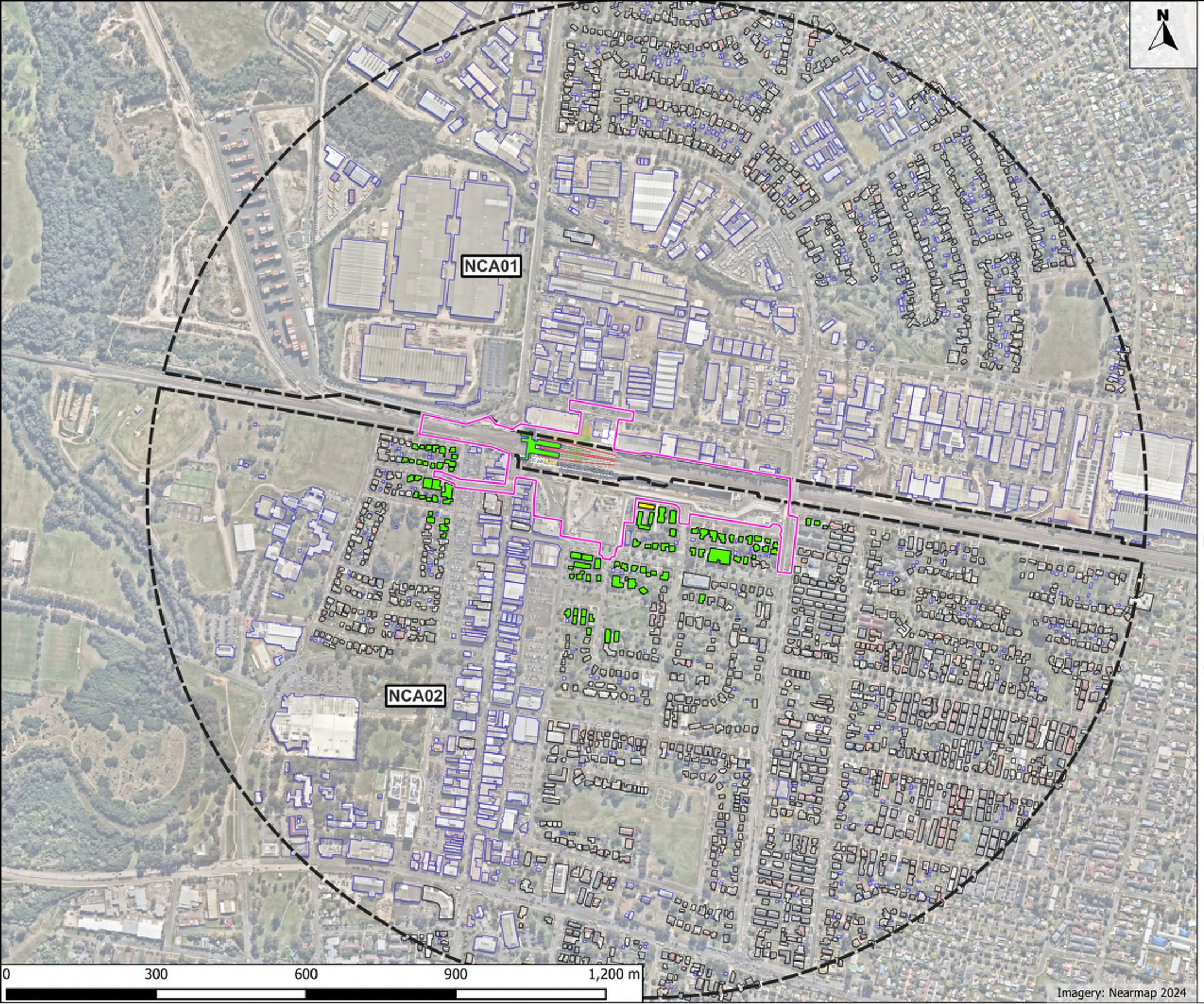
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TITLE:

w0002
Demolition and removal of all existing structures
OOHW3

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PREPARED:	APPROVED:
PTT	RML
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4/10/2024	A3



Legend

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Noise Impact

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PROJECT:

Footbridge at St Marys Station DNVIS

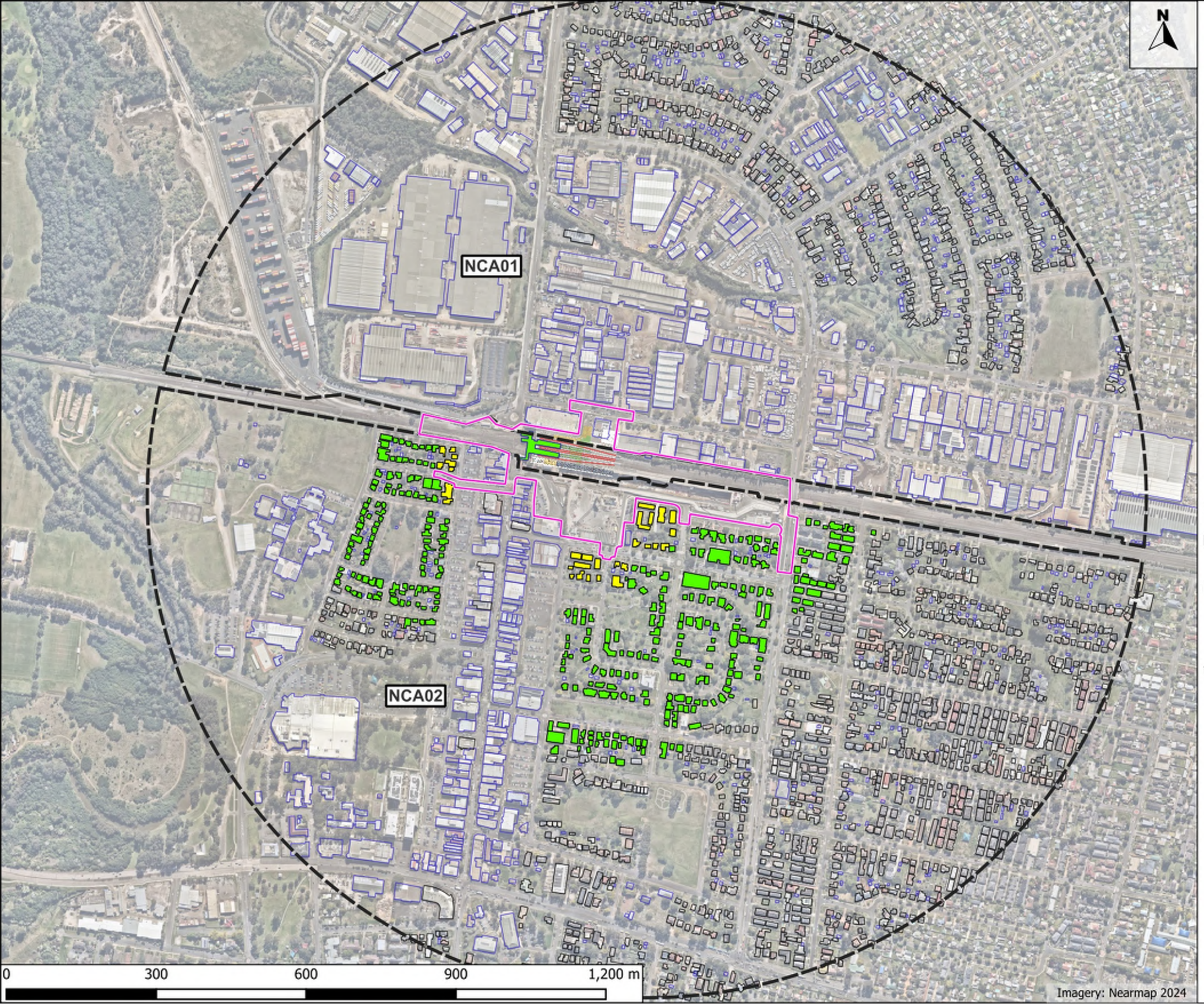
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TITLE:

w0003
Construction of footbridge - Piling
Day

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PREPARED:	APPROVED:
PTT	RML
EXPORTED:	SHEET SIZE:
4/10/2024	A3



Legend

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Receivers

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Noise Impact

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- 11-20 dB
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PROJECT:

Footbridge at St Marys Station
DNVIS

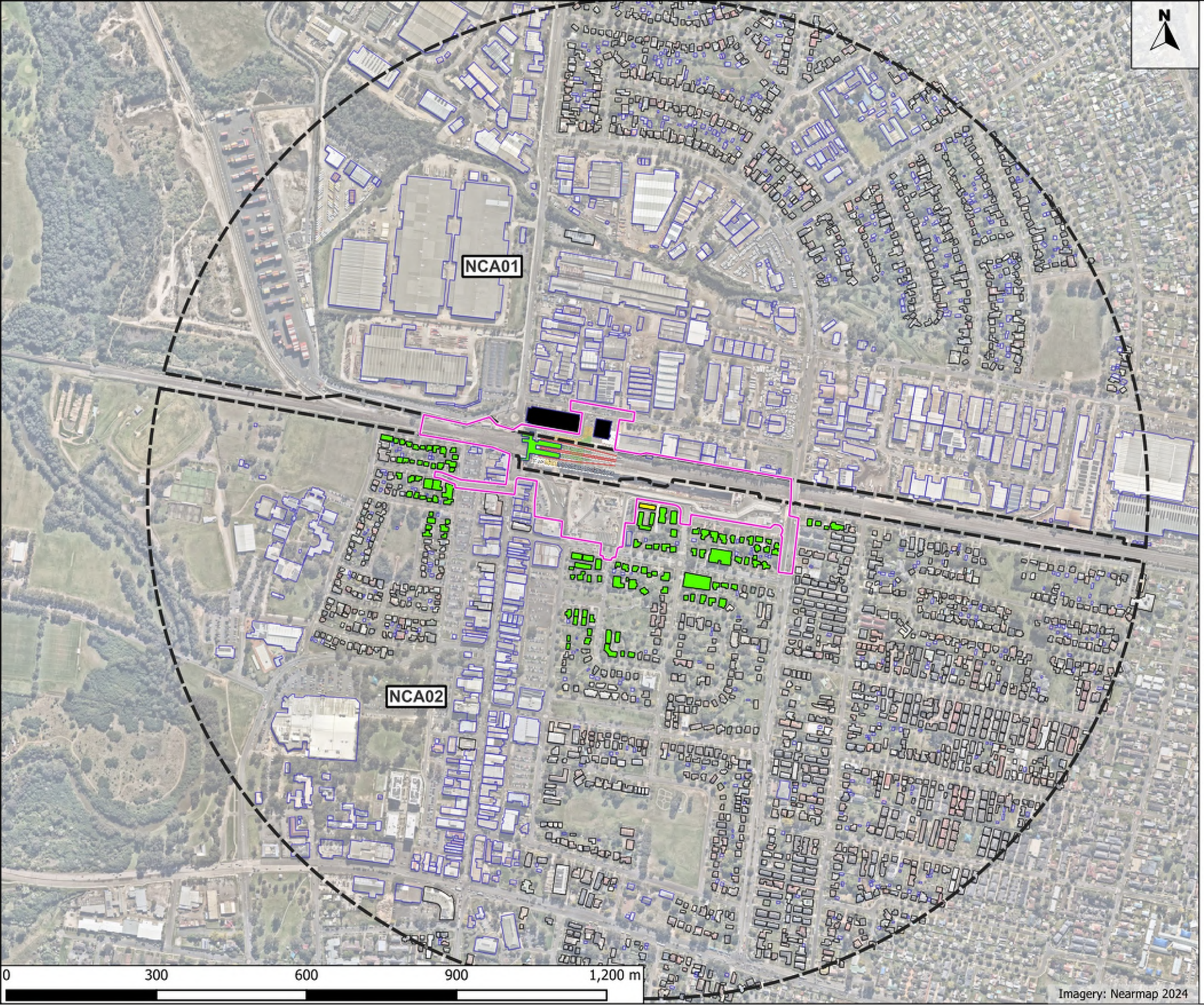
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Laing O'Rouke Australia Construction Pty Ltd

TITLE:

w0003
Construction of footbridge - Piling
OOHW 3

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4/10/2024	A3



Legend

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PROJECT:

Footbridge at St Marys Station DNVIS

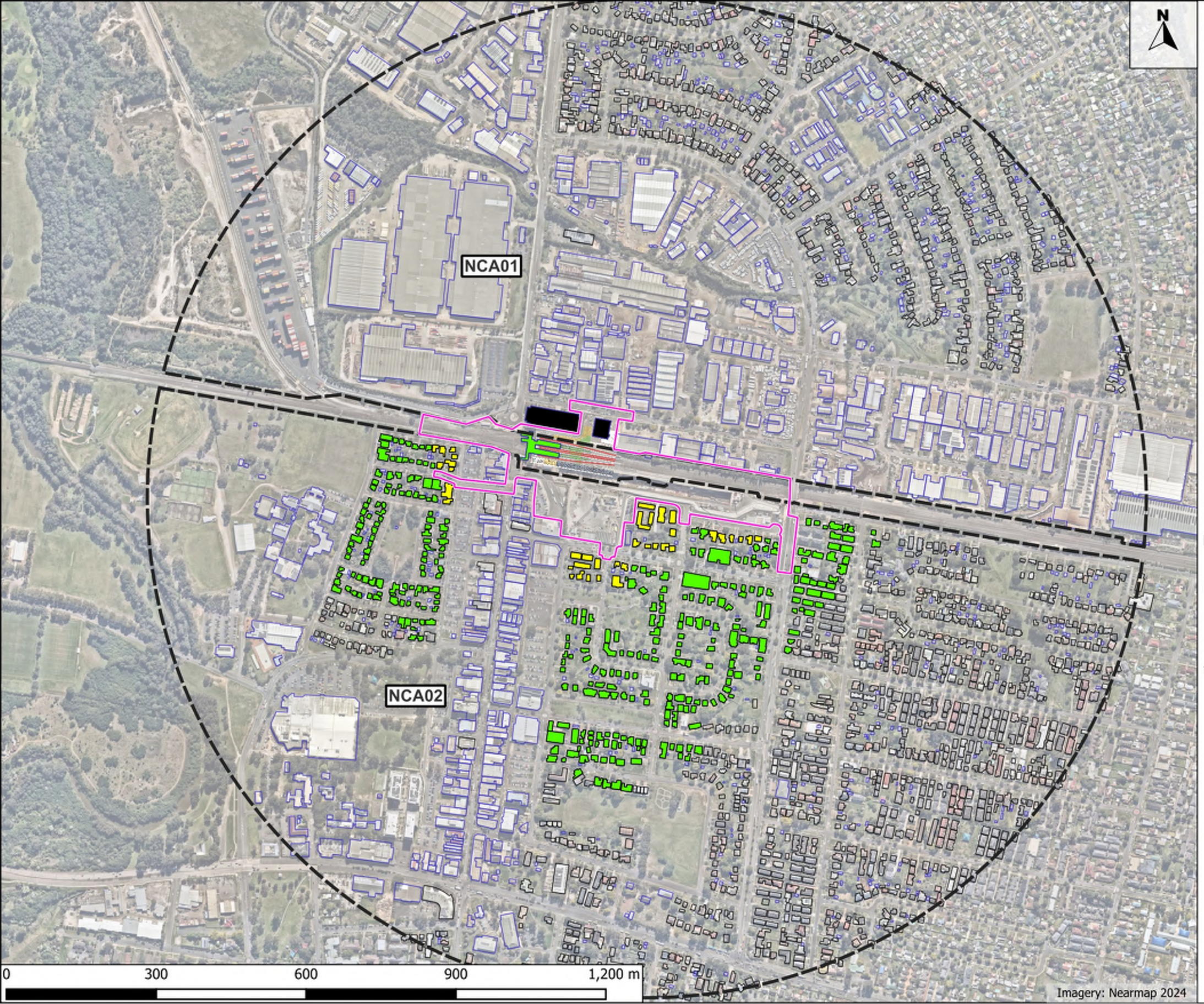
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Laing O'Rouke Australia Construction Pty Ltd

TITLE:

w0004 Construction of footbridge - Excavation & FRP (substructure) Day

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4/10/2024	A3



Legend

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Receivers

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Noise Impact

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PROJECT:

Footbridge at St Marys Station DNVIS

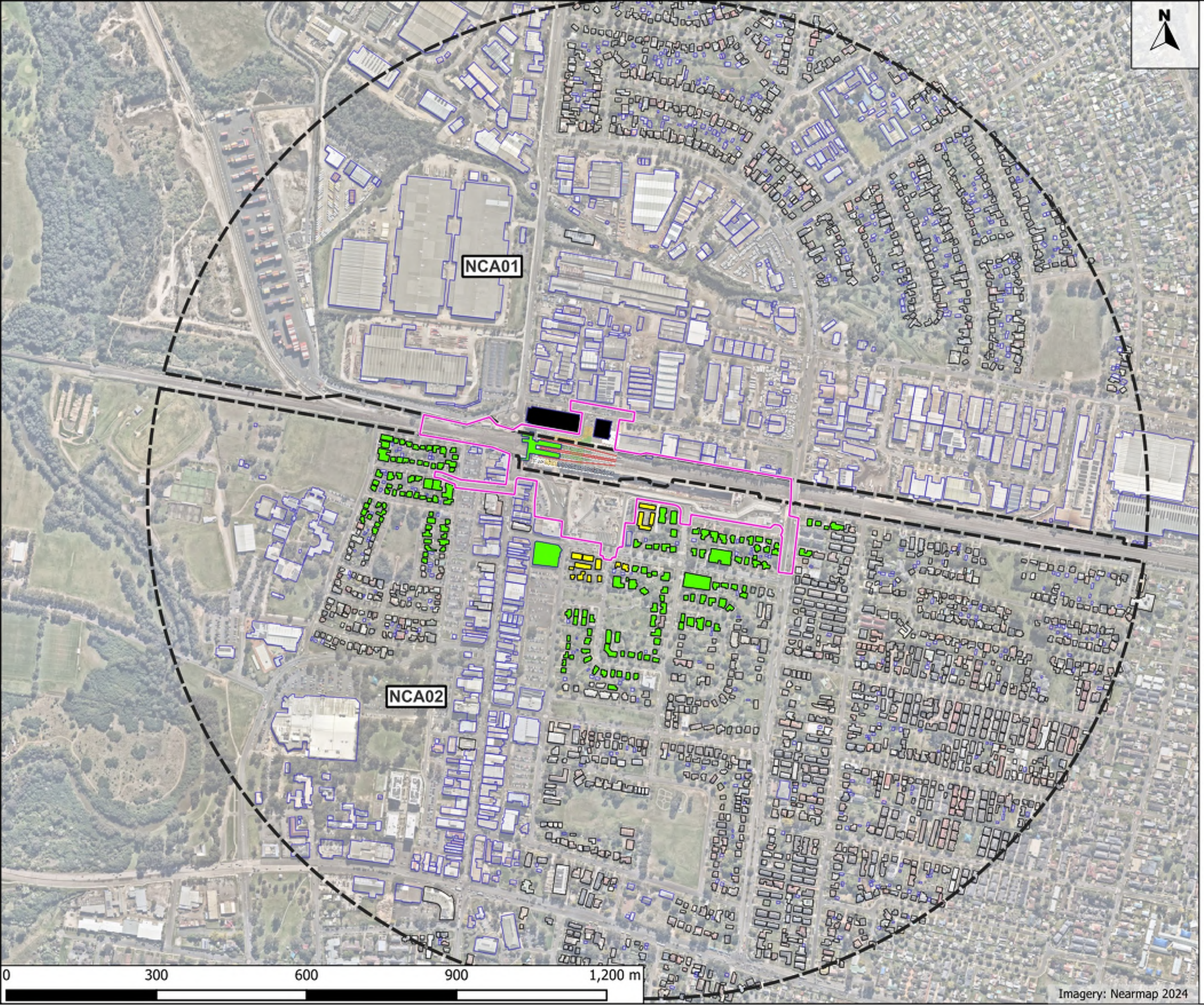
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Laing O'Rouke Australia Construction Pty Ltd

TITLE:

w0004 Construction of footbridge - Excavation & FRP (substructure) OOHW 3

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PREPARED:	APPROVED:
PTT	RML
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4/10/2024	A3



Legend

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PROJECT:

Footbridge at St Marys Station DNVIS

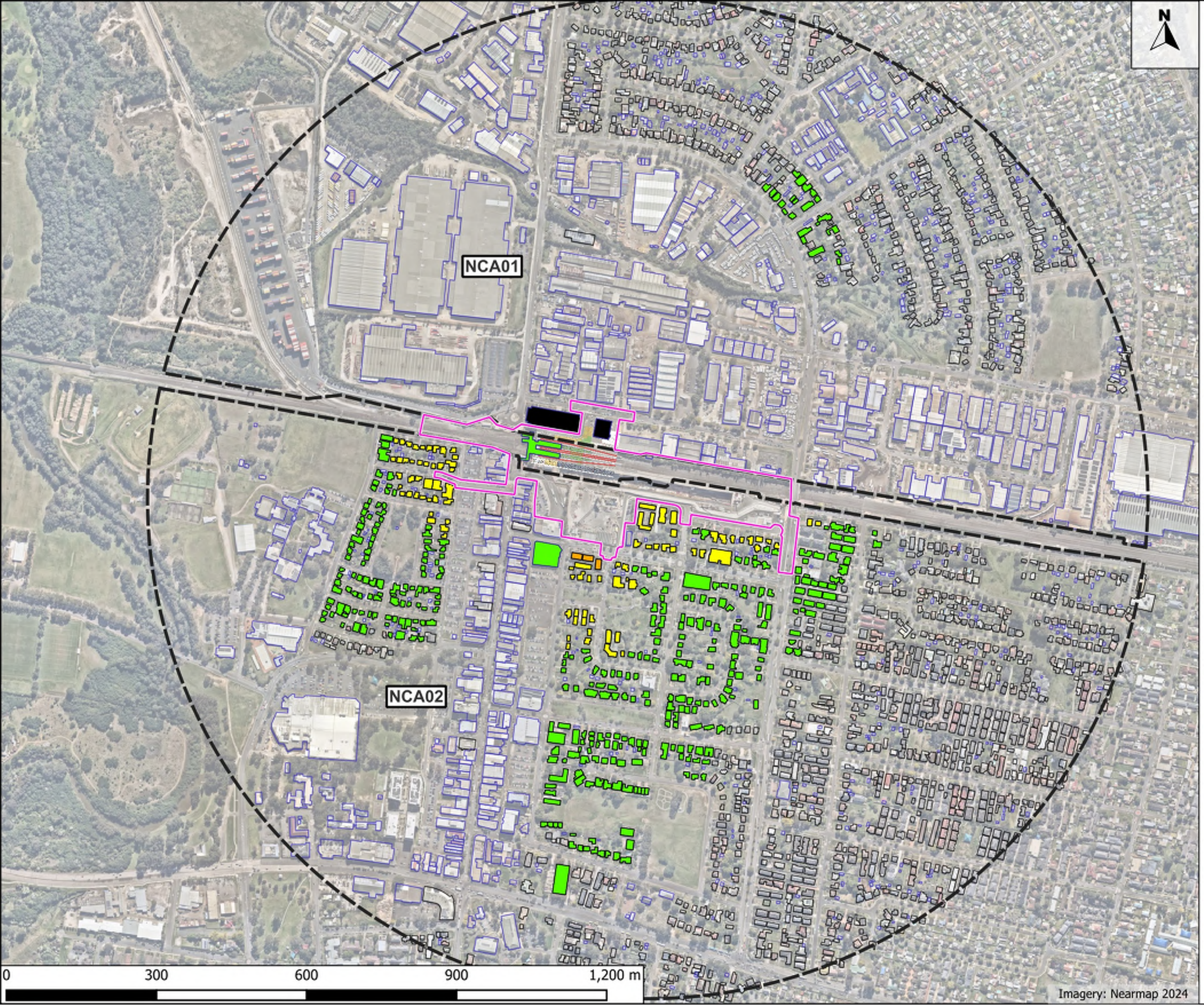
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Laing O'Rouke Australia Construction Pty Ltd

TITLE:

w0005 Construction of footbridge - Excavation & FRP (substructure) Day

PROJECT No.:	REVISION:
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PREPARED:	APPROVED:
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PROJECT:

Footbridge at St Marys Station
DNVIS

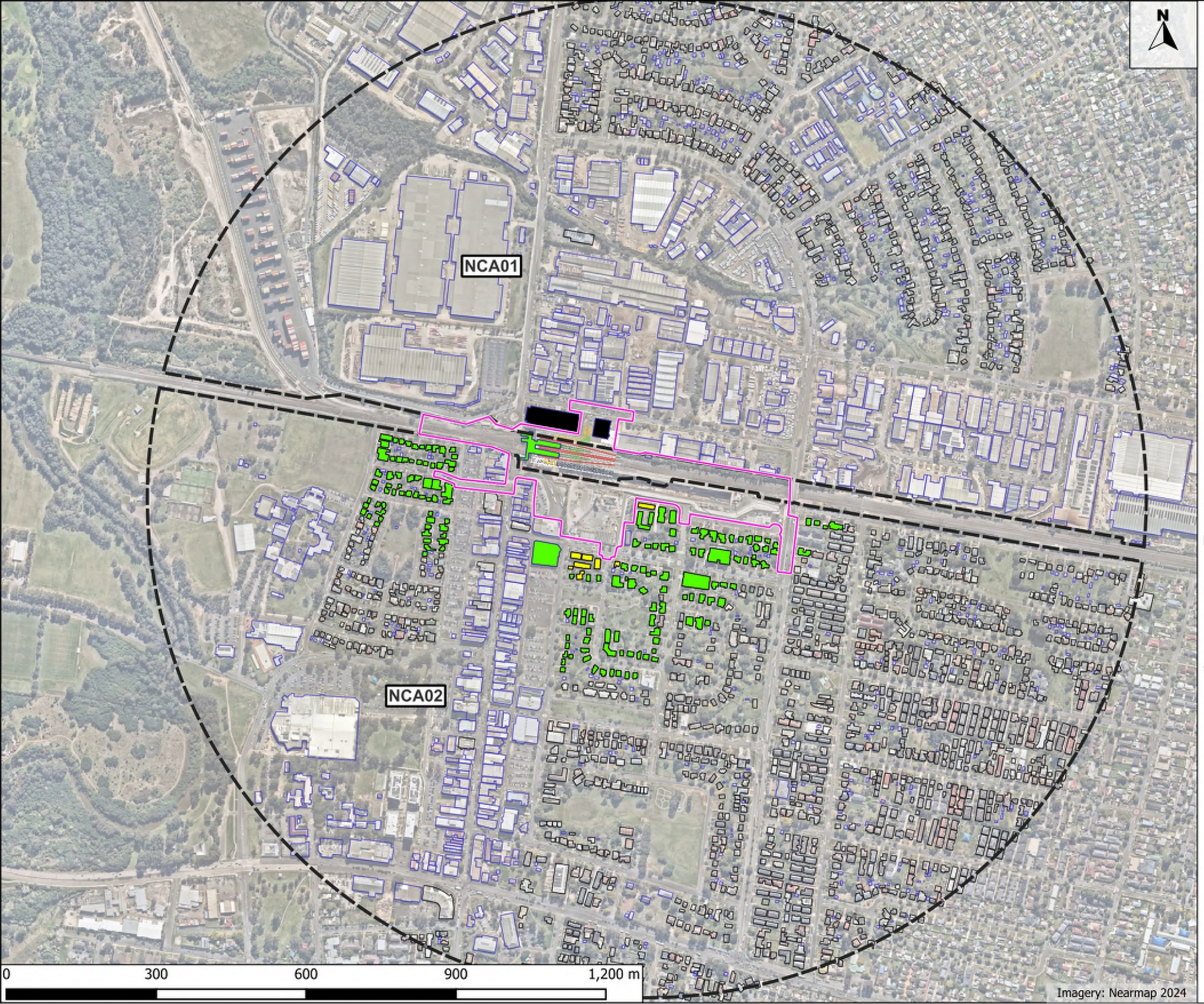
PREPARED FOR:

Laing O'Rouke Australia Construction Pty Ltd

TITLE:

w0005
Construction of footbridge - Excavation & FRP (substructure)
OOHW3

PROJECT No.:	REVISION:
2305915.03	A
PREPARED:	APPROVED:
PTT	RML
EXPORTED:	SHEET SIZE:
4/10/2024	A3



Legend

- Project Boundary

Receivers

- Residential
- Other Sensitive Receivers

Noise Impact

- 1-10 dB
- 11-20 dB
- 21-30 dB
- > 30dB
- Highly Affected

PROJECT:

Footbridge at St Marys Station
DNVIS

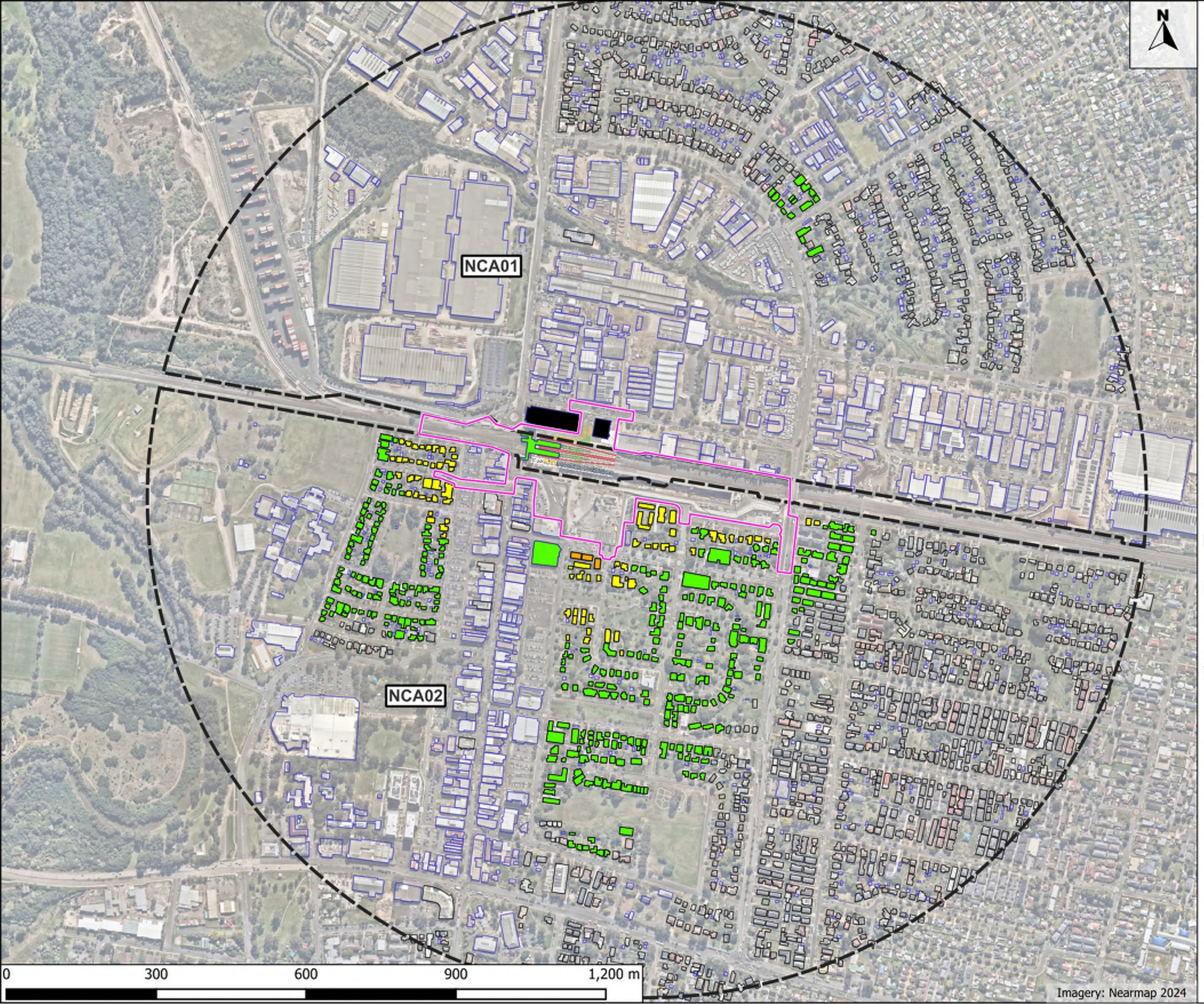
PREPARED FOR:

Laing O'Rouke Australia Construction Pty Ltd

TITLE:

w0006
Construction of footbridge - Install of precast/prefab elements
Day

PROJECT No.:	REVISION:
2305915.03	A
PREPARED:	APPROVED:
PTT	RML
EXPORTED:	SHEET SIZE:
4/10/2024	A3



Legend

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- > 30dB
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PROJECT:

Footbridge at St Marys Station
DNVIS

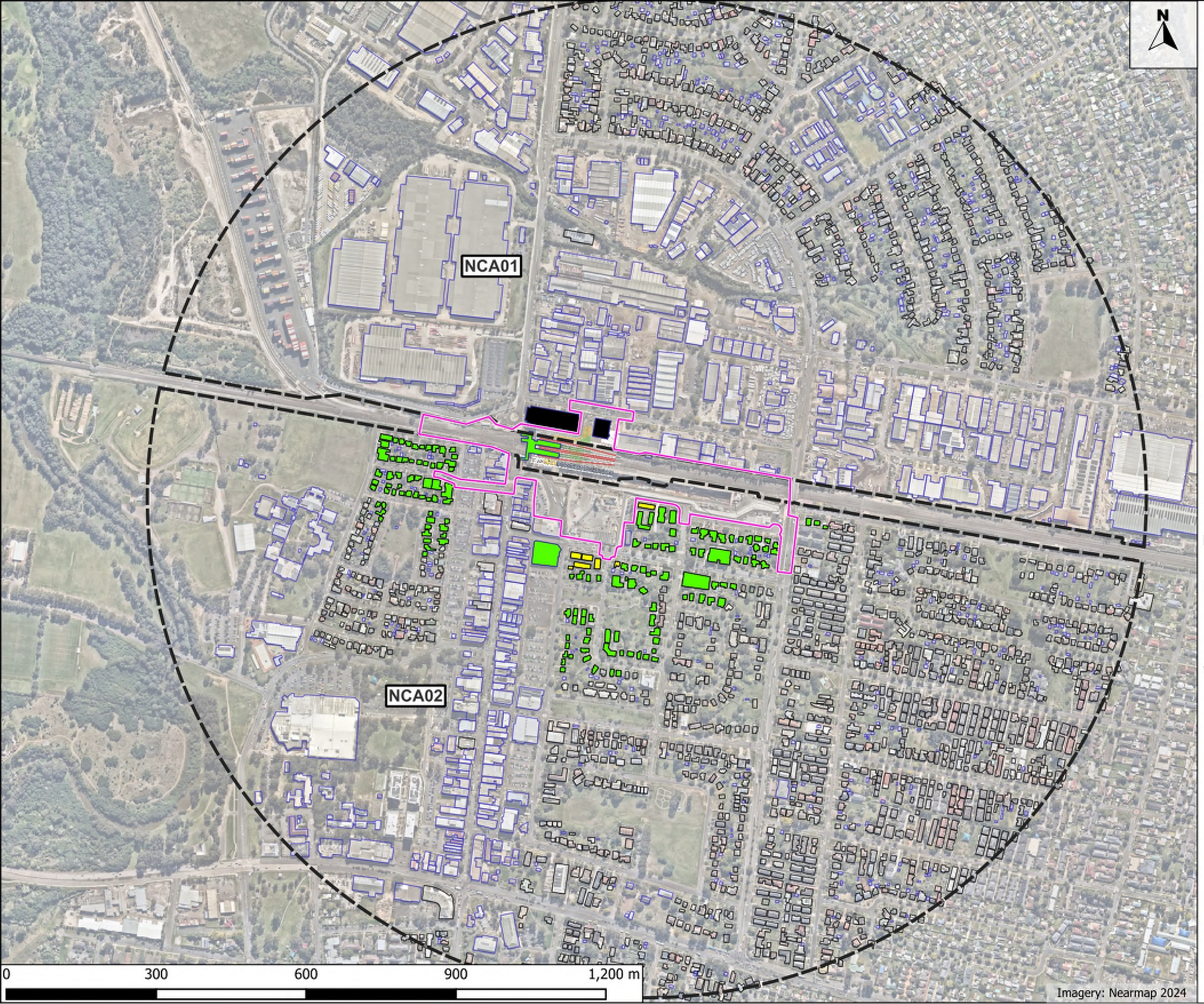
PREPARED FOR:

Laing O'Rouke Australia Construction Pty Ltd

TITLE:

w0006
Construction of footbridge - Install of precast/prefab elements
OOHW3

PROJECT No.:	REVISION:
2305915.03	A
PREPARED:	APPROVED:
PTT	RML
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4/10/2024	A3



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PROJECT:

Footbridge at St Marys Station
DNVIS

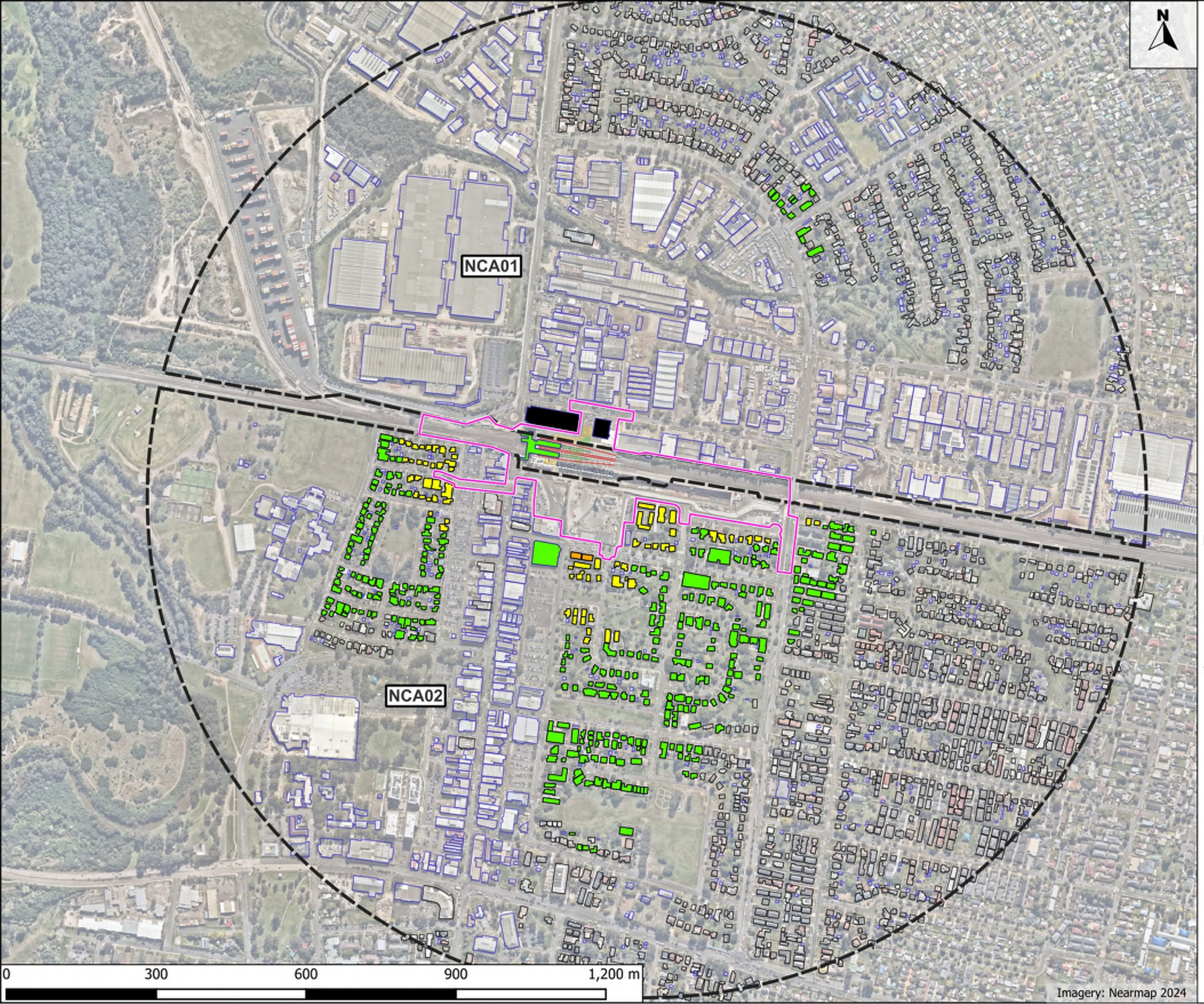
PREPARED FOR:

Laing O'Rouke Australia Construction Pty Ltd

TITLE:

w0007
Installation of lifts
Day

PROJECT No.:	REVISION:
2305915.03	A
PREPARED:	APPROVED:
PTT	RML
EXPORTED:	SHEET SIZE:
4/10/2024	A3



Legend

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PROJECT:

Footbridge at St Marys Station
DNVIS

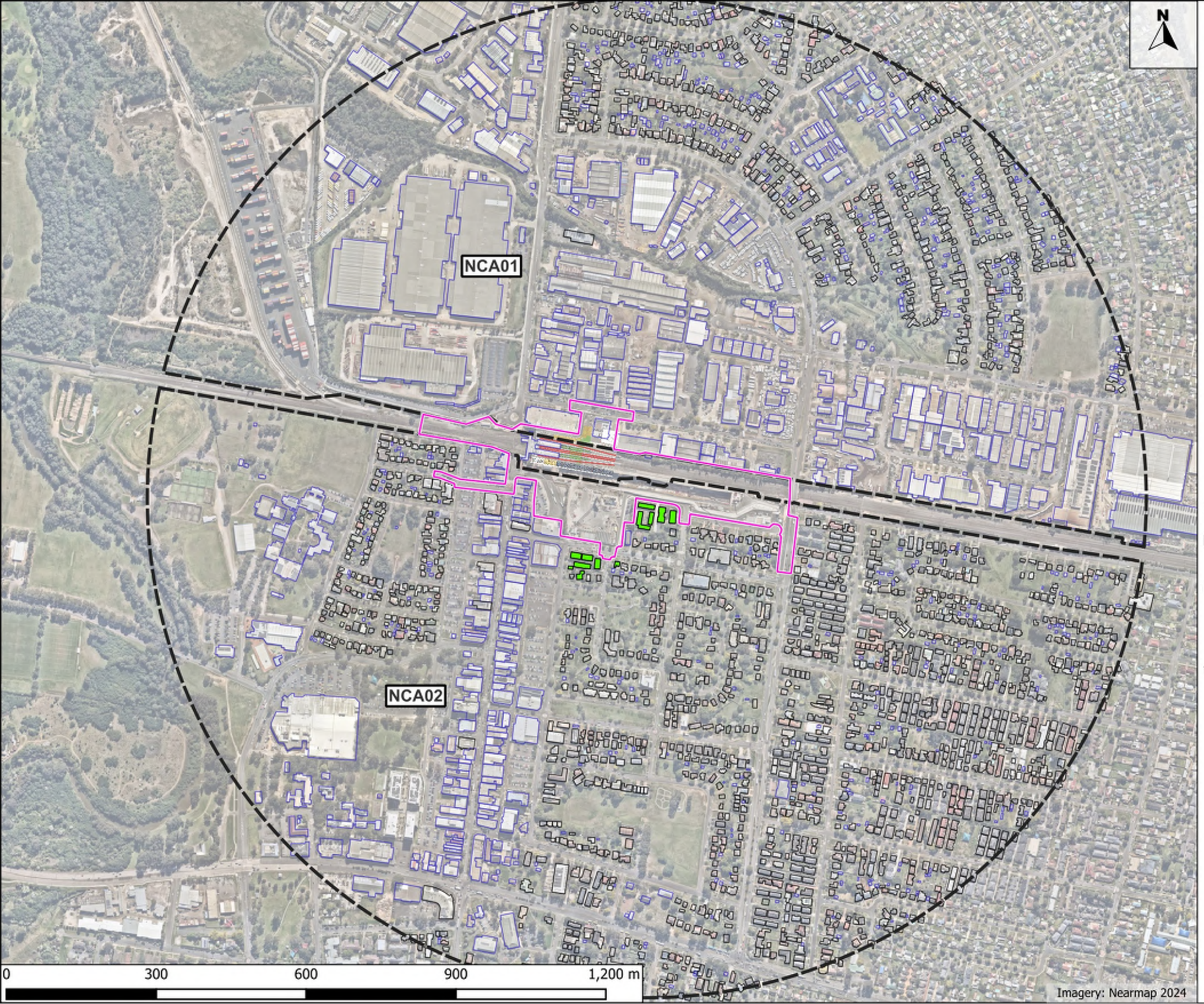
PREPARED FOR:

Laing O'Rouke Australia Construction Pty Ltd

TITLE:

w0007
Installation of lifts
OOHW 3

PROJECT No.:	REVISION:
2305915.03	A
PREPARED:	APPROVED:
PT	RML
EXPORTED:	SHEET SIZE:
4/10/2024	A3



Legend

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PROJECT:

Footbridge at St Marys Station DNVIS

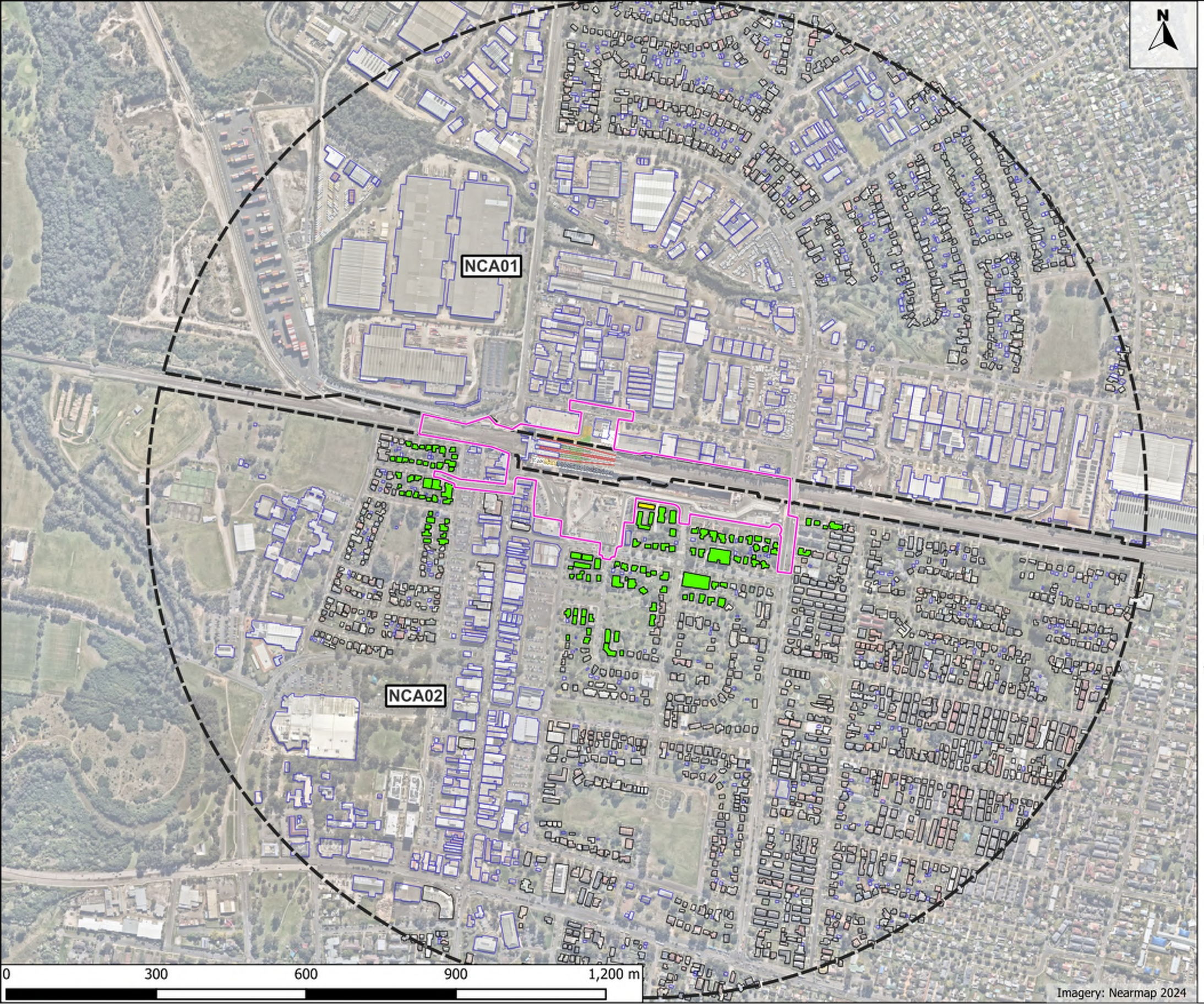
PREPARED FOR:

Laing O'Rouke Australia Construction Pty Ltd

TITLE:

w0008 Modifications to existing Sydney Trains assets Day

PROJECT No.:	REVISION:
2305915.03	A
PREPARED:	APPROVED:
PTT	RML
EXPORTED:	SHEET SIZE:
4/10/2024	A3



Legend

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Noise Impact

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PROJECT:

Footbridge at St Marys Station DNVIS

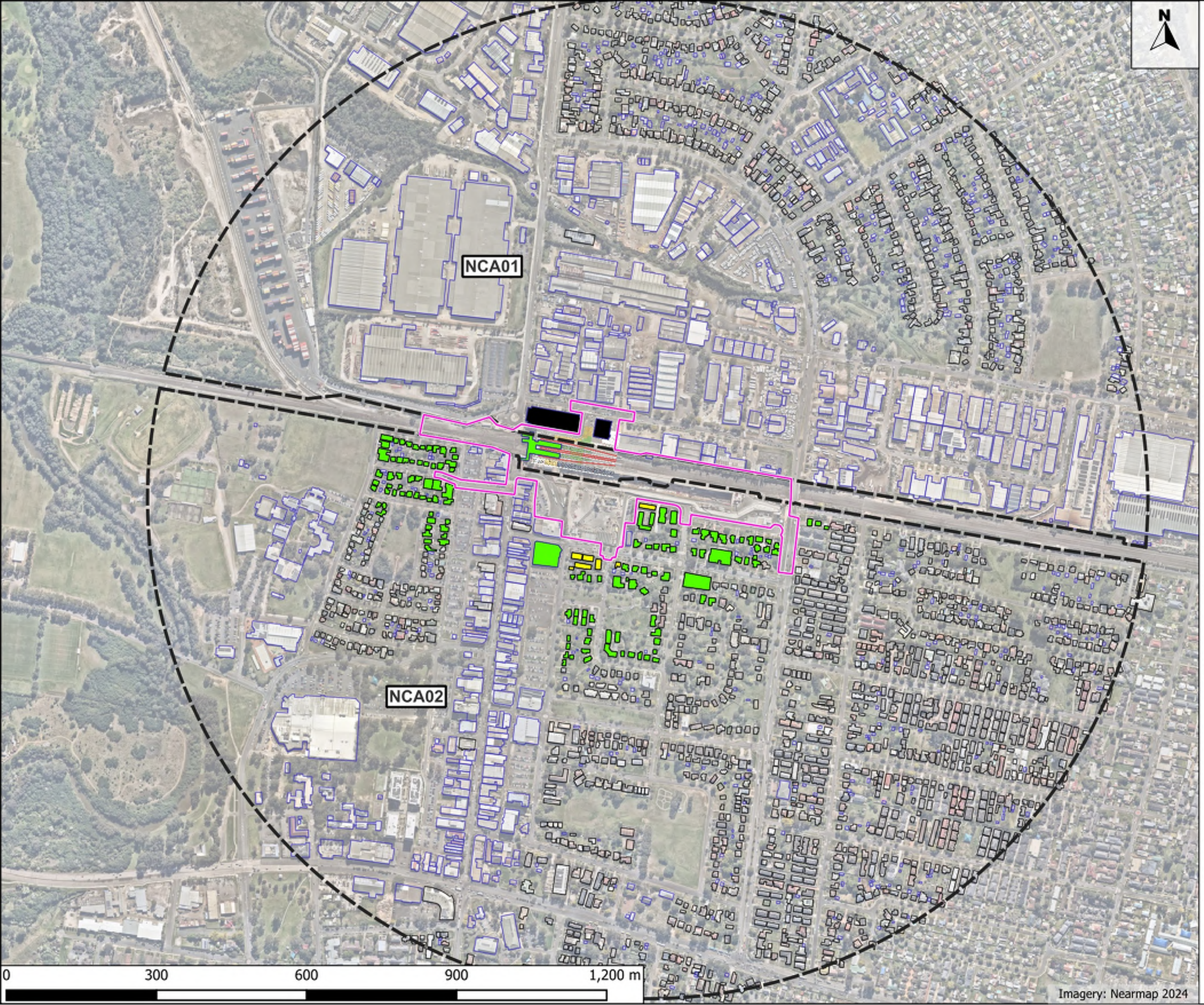
PREPARED FOR:

Laing O'Rouke Australia Construction Pty Ltd

TITLE:

w0008
Modifications to existing Sydney Trains assets
OOHW 3

PROJECT No.:	REVISION:
2305915.03	A
PREPARED:	APPROVED:
PTT	RML
EXPORTED:	SHEET SIZE:
4/10/2024	A3



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PROJECT:

Footbridge at St Marys Station
DNVIS

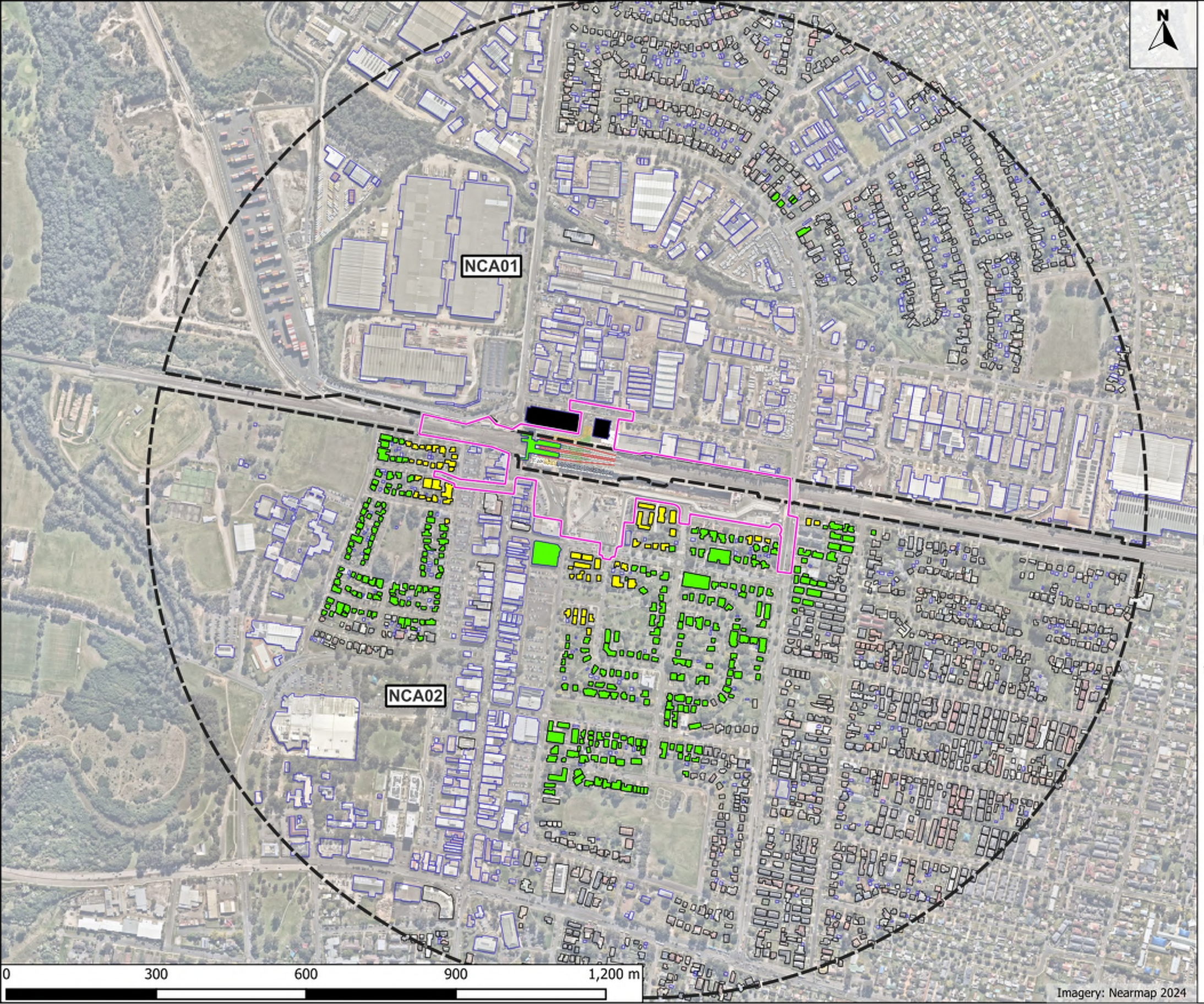
PREPARED FOR:

Laing O'Rouke Australia Construction Pty Ltd

TITLE:

w0009
Construction of stairs and canopies
Day

PROJECT No.:	REVISION:
2305915.03	A
PREPARED:	APPROVED:
PTT	RML
EXPORTED:	SHEET SIZE:
4/10/2024	A3



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- > 30dB
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PROJECT:

Footbridge at St Marys Station
DNVIS

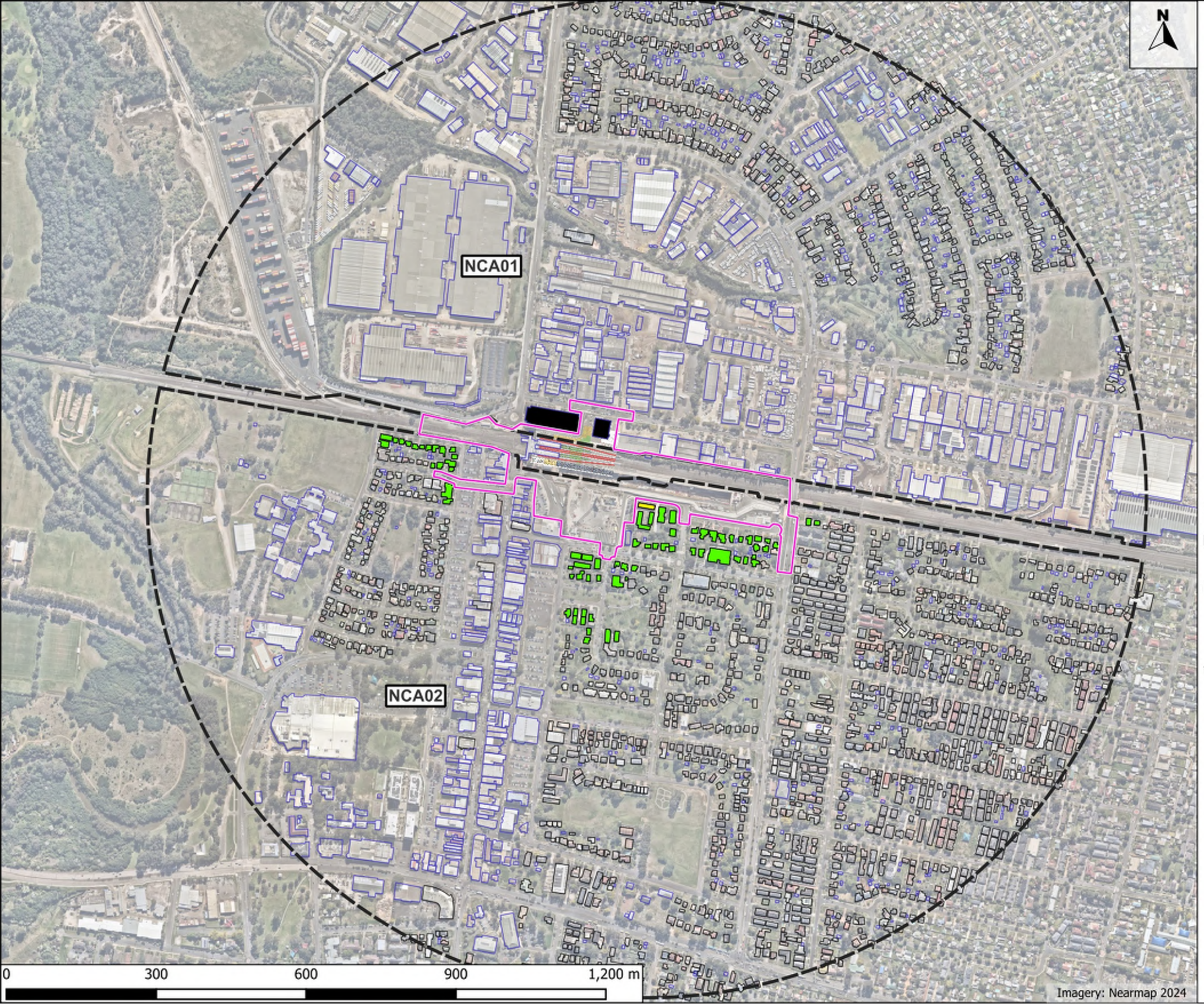
PREPARED FOR:

Laing O'Rouke Australia Construction Pty Ltd

TITLE:

w0009
Construction of stairs and canopies
OOHW 3

PROJECT No.:	REVISION:
2305915.03	A
PREPARED:	APPROVED:
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Footbridge at St Marys Station DNVIS

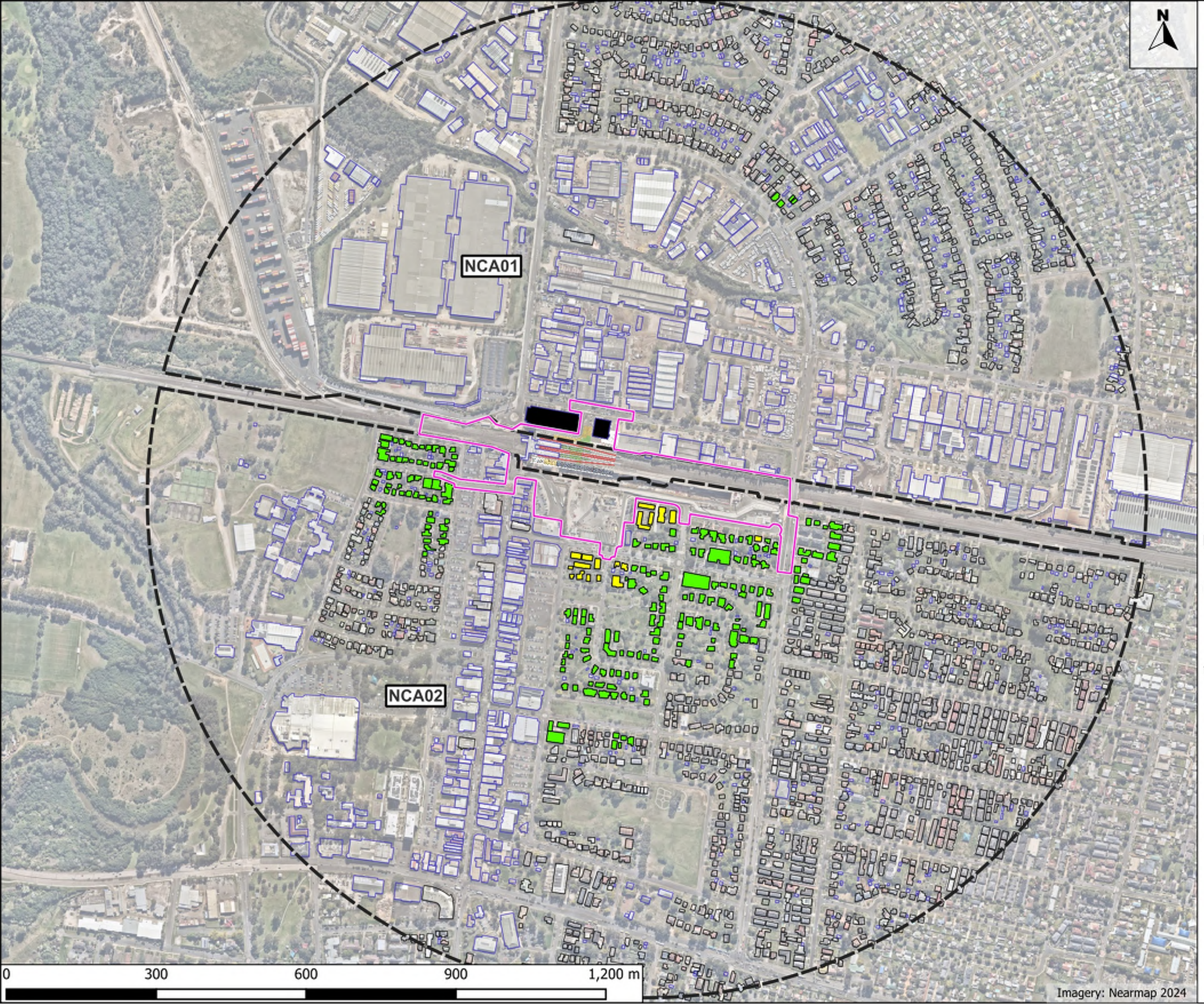
PREPARED FOR:

Laing O'Rouke Australia Construction Pty Ltd

TITLE:

w010 Installation/construction of Sydney Trains services, facilities, rooms and systems Day

PROJECT No.:	REVISION:
2305915.03	A
PREPARED:	APPROVED:
PTT	RML
EXPORTED:	SHEET SIZE:
4/10/2024	A3



Legend

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Receivers

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PROJECT:

Footbridge at St Marys Station DNVIS

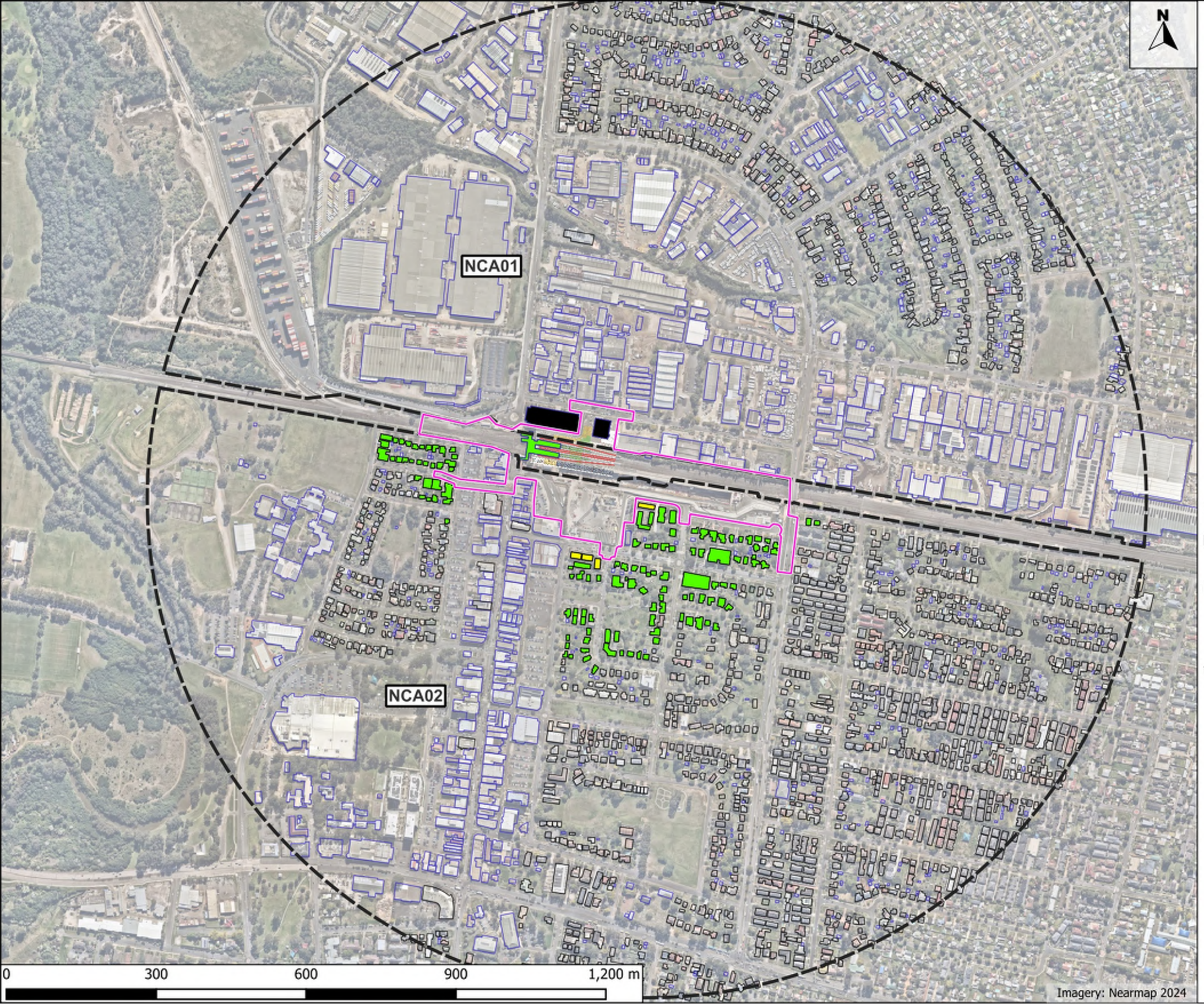
PREPARED FOR:

Laing O'Rouke Australia Construction Pty Ltd

TITLE:

w010 Installation/construction of Sydney Trains services, facilities, rooms and systems OOHW 3

PROJECT No.:	REVISION:
2305915.03	A
PREPARED:	APPROVED:
PTT	RML
EXPORTED:	SHEET SIZE:
4/10/2024	A3



Legend

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PROJECT:

Footbridge at St Marys Station DNVIS

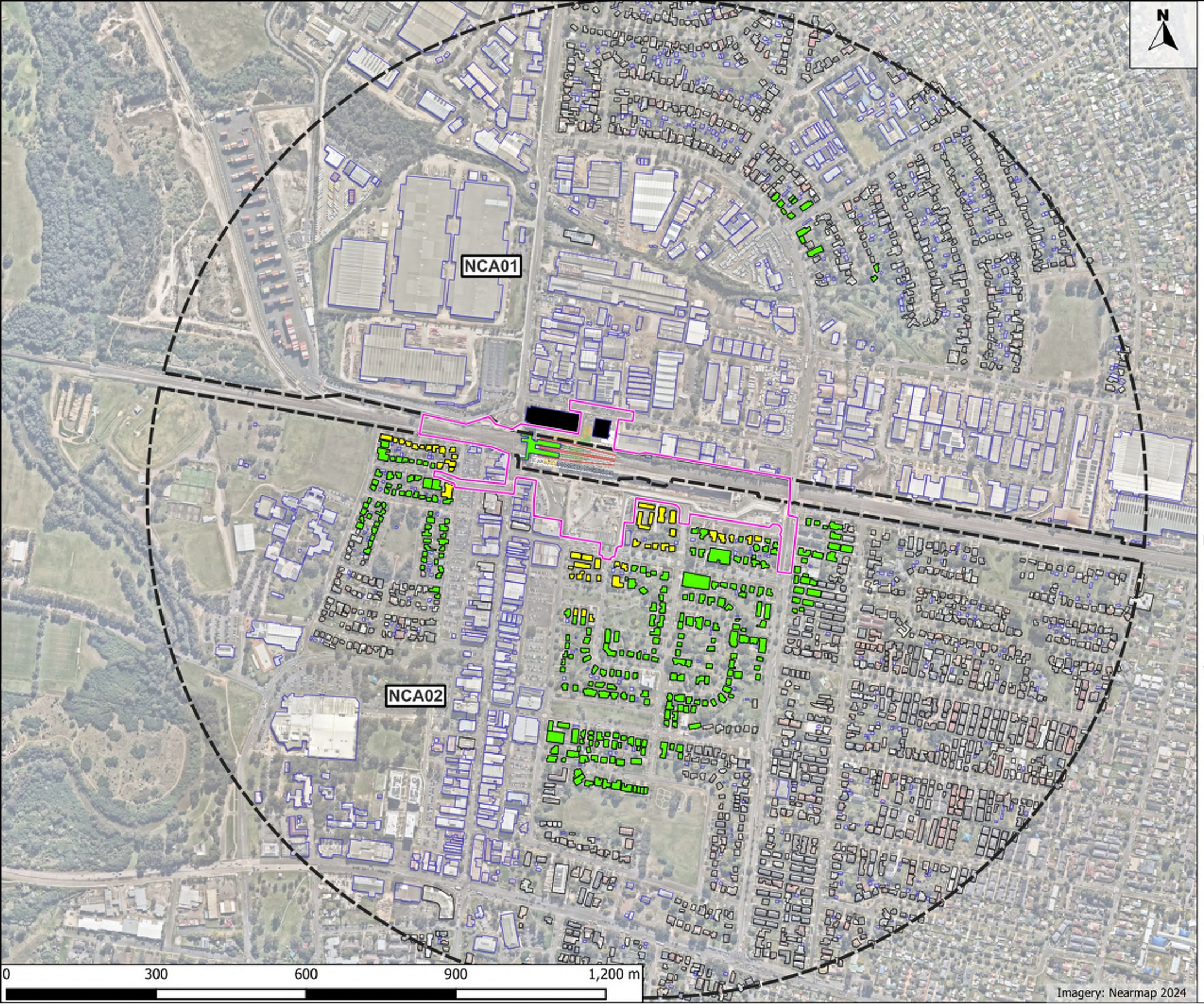
PREPARED FOR:

Laing O'Rouke Australia Construction Pty Ltd

TITLE:

w011 Northern/Harris St work Day

PROJECT No.:	REVISION:
2305915.03	A
PREPARED:	APPROVED:
PTT	RML
EXPORTED:	SHEET SIZE:
4/10/2024	A3



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PROJECT:

Footbridge at St Marys Station
DNVIS

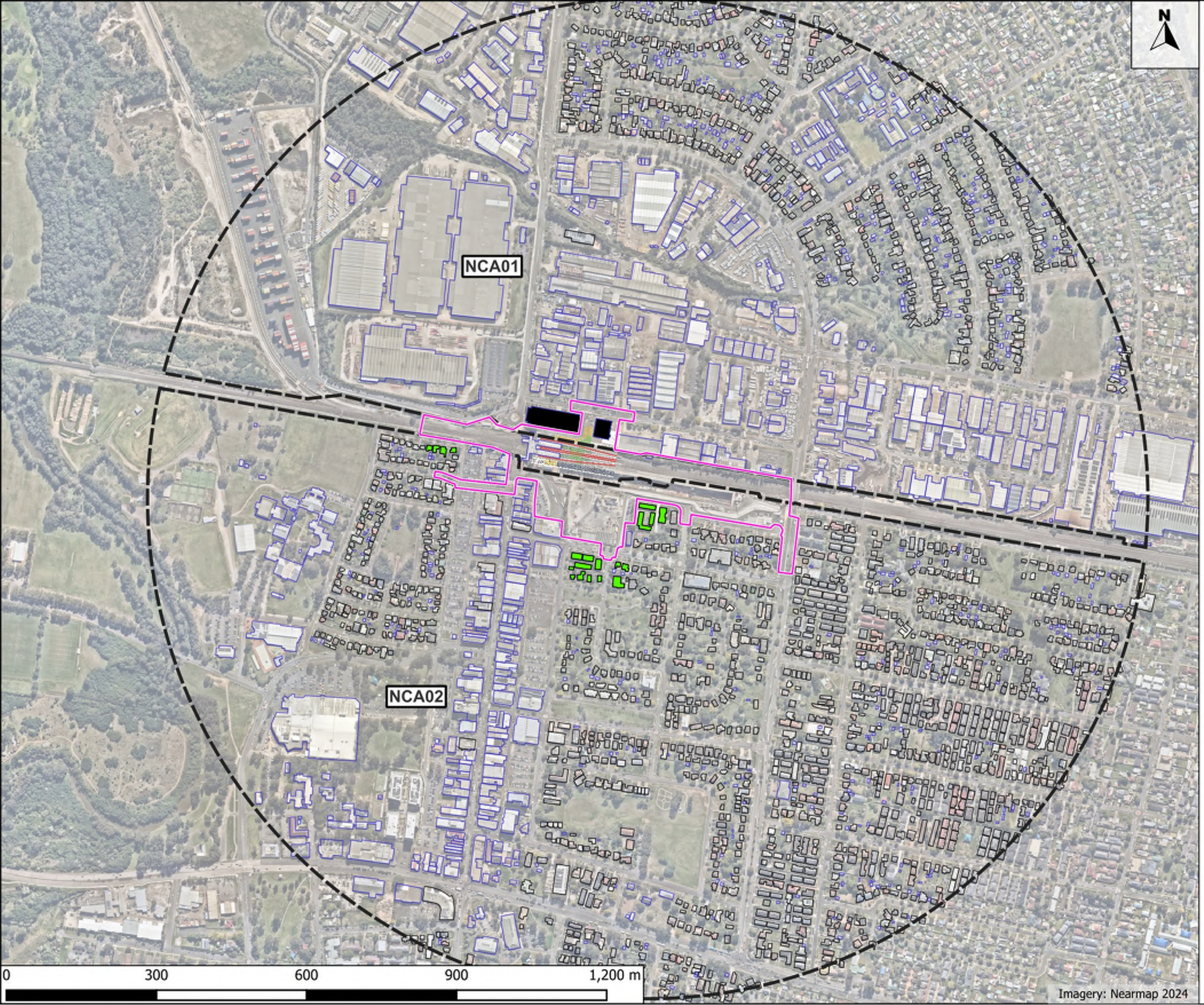
PREPARED FOR:

Laing O'Rouke Australia Construction Pty Ltd

TITLE:

w011
Northern/Harris St work
OOHW 3

PROJECT No.:	REVISION:
2305915.03	A
PREPARED:	APPROVED:
PT	RML
EXPORTED:	SHEET SIZE:
4/10/2024	A3



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PROJECT:

Footbridge at St Marys Station
DNVIS

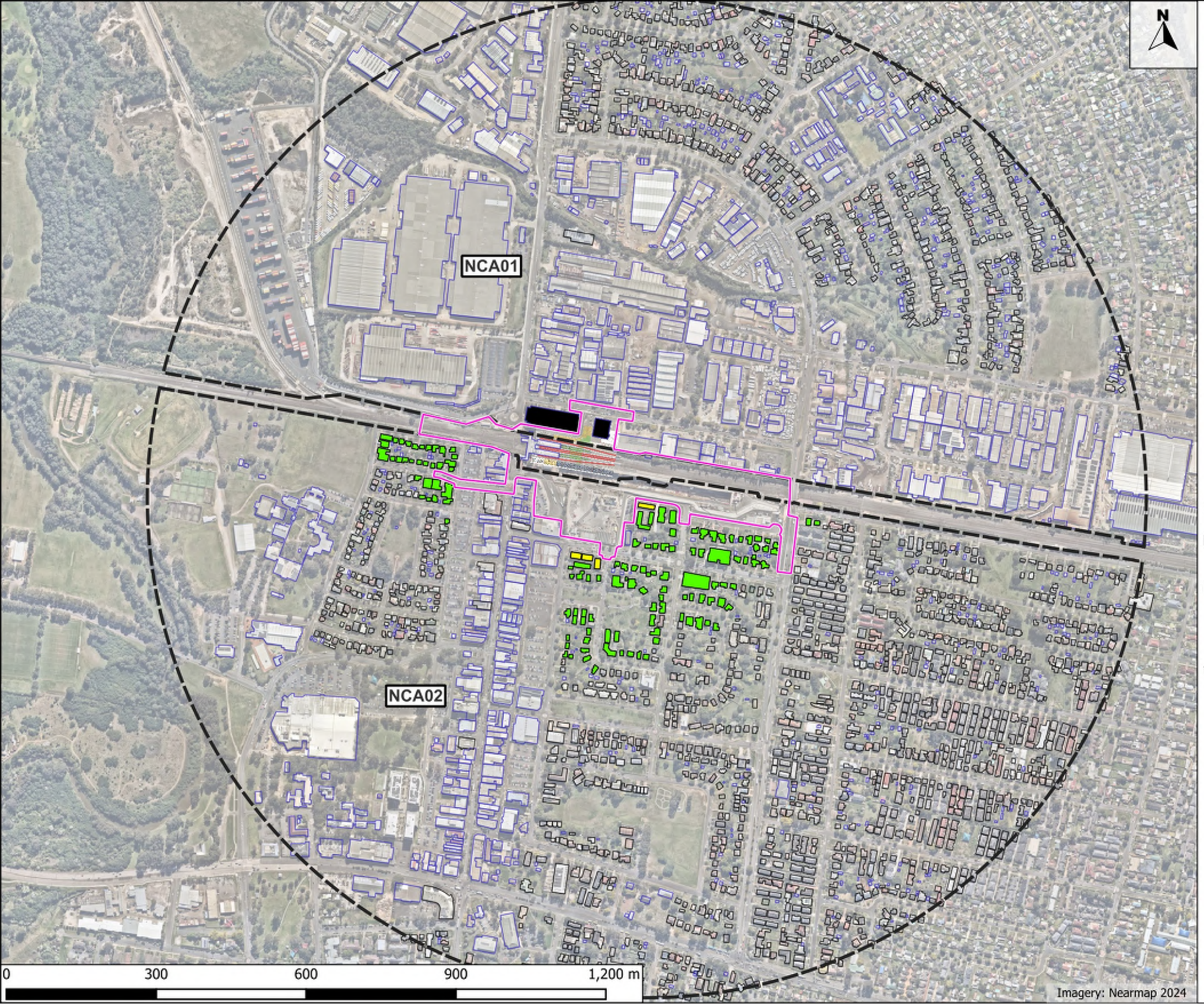
PREPARED FOR:

Laing O'Rouke Australia Construction Pty Ltd

TITLE:

w012
Demobilisation
Day

PROJECT No.:	REVISION:
2305915.03	A
PREPARED:	APPROVED:
PTT	RML
EXPORTED:	SHEET SIZE:
4/10/2024	A3



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PROJECT:

Footbridge at St Marys Station
DNVIS

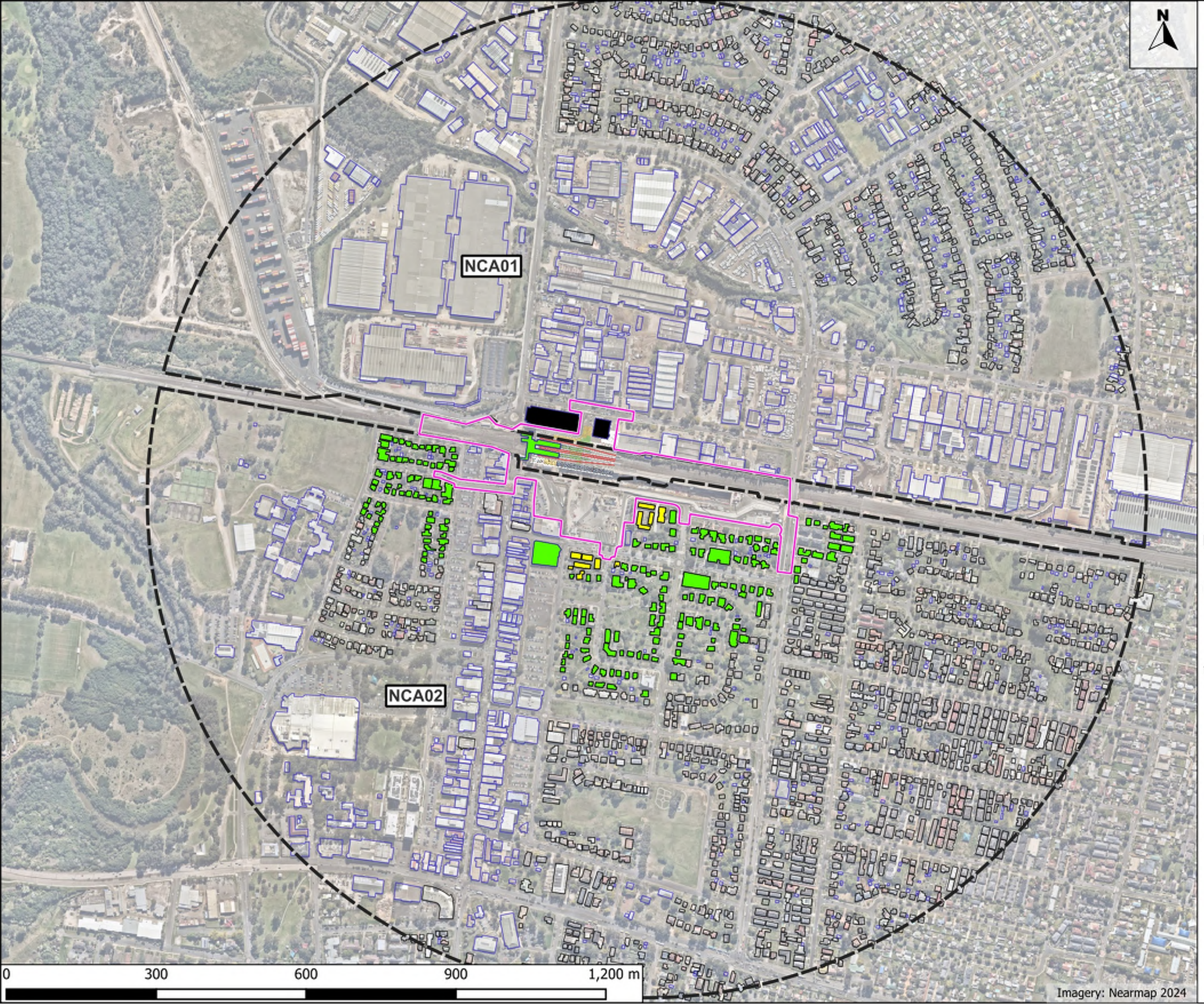
PREPARED FOR:

Laing O'Rouke Australia Construction Pty Ltd

TITLE:

w012
Demobilisation
OOHW 3

PROJECT No.:	REVISION:
2305915.03	A
PREPARED:	APPROVED:
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PROJECT:

Footbridge at St Marys Station
DNVIS

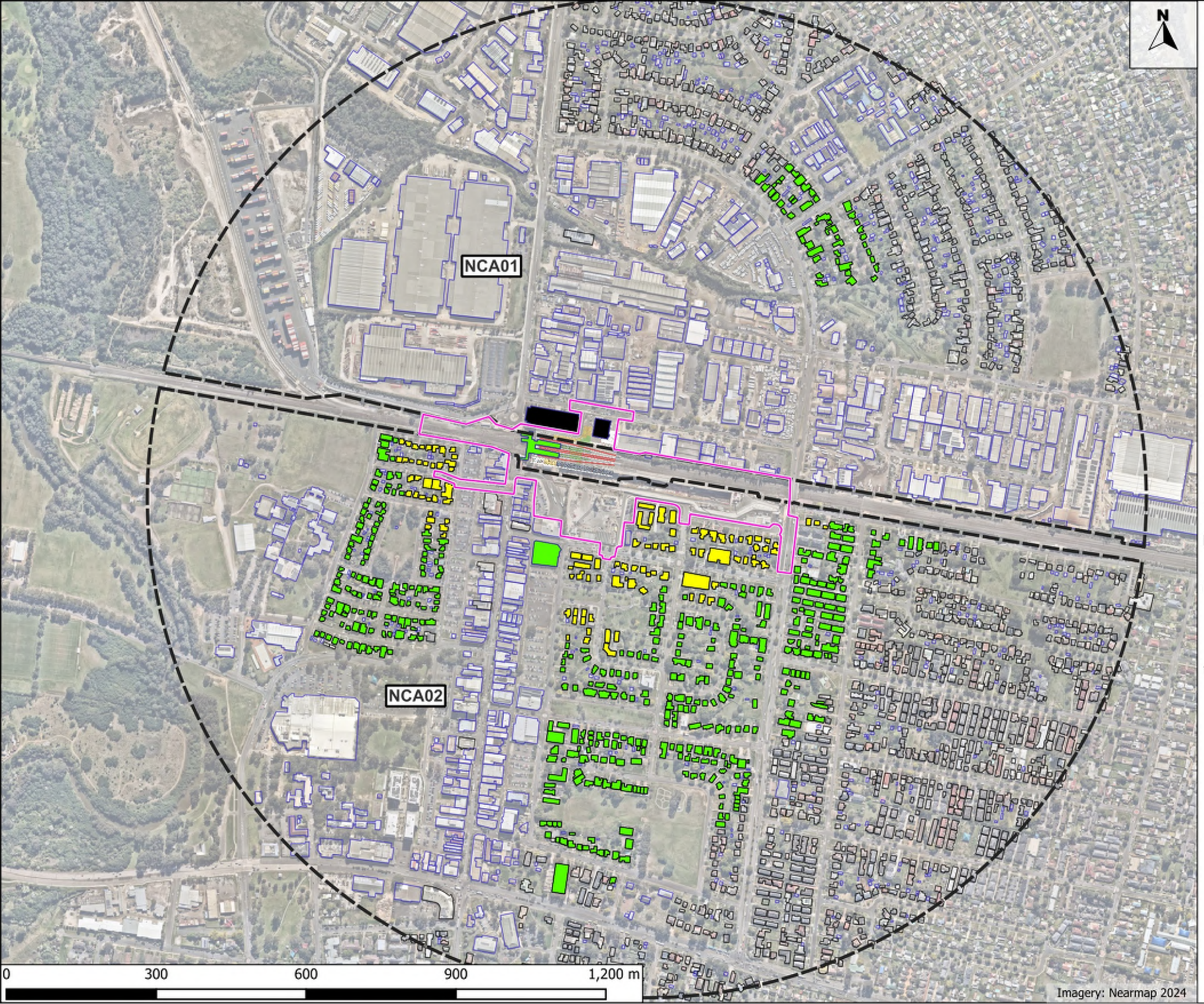
PREPARED FOR:

Laing O'Rouke Australia Construction Pty Ltd

TITLE:

w013
w003+w004
Day

PROJECT No.:	REVISION:
2305915.03	A
PREPARED:	APPROVED:
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PROJECT:

Footbridge at St Marys Station
DNVIS

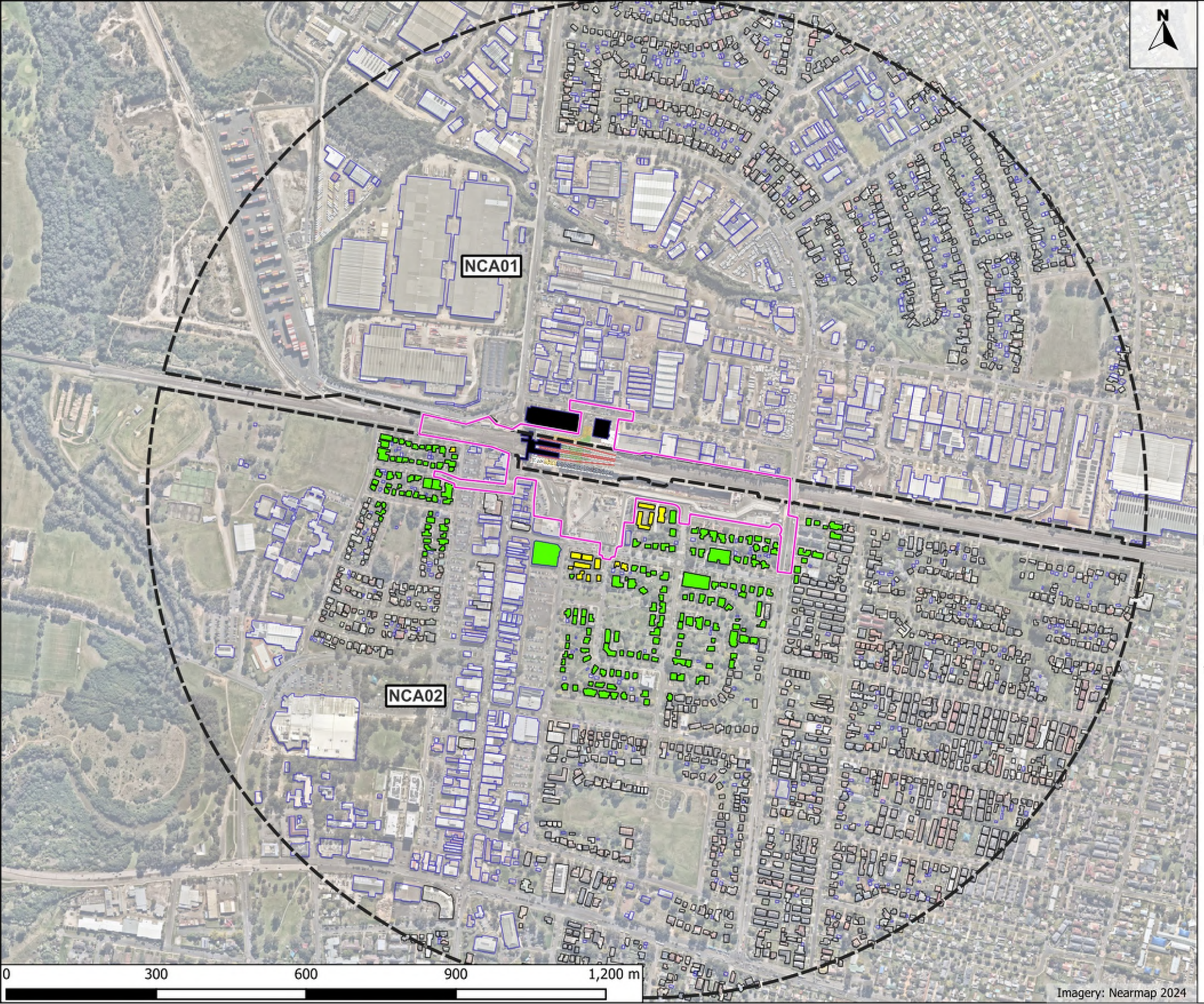
PREPARED FOR:

Laing O'Rouke Australia Construction Pty Ltd

TITLE:

w013
w003+w004
OOHW 3

PROJECT No.:	REVISION:
2305915.03	A
PREPARED:	APPROVED:
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Footbridge at St Marys Station
DNVIS

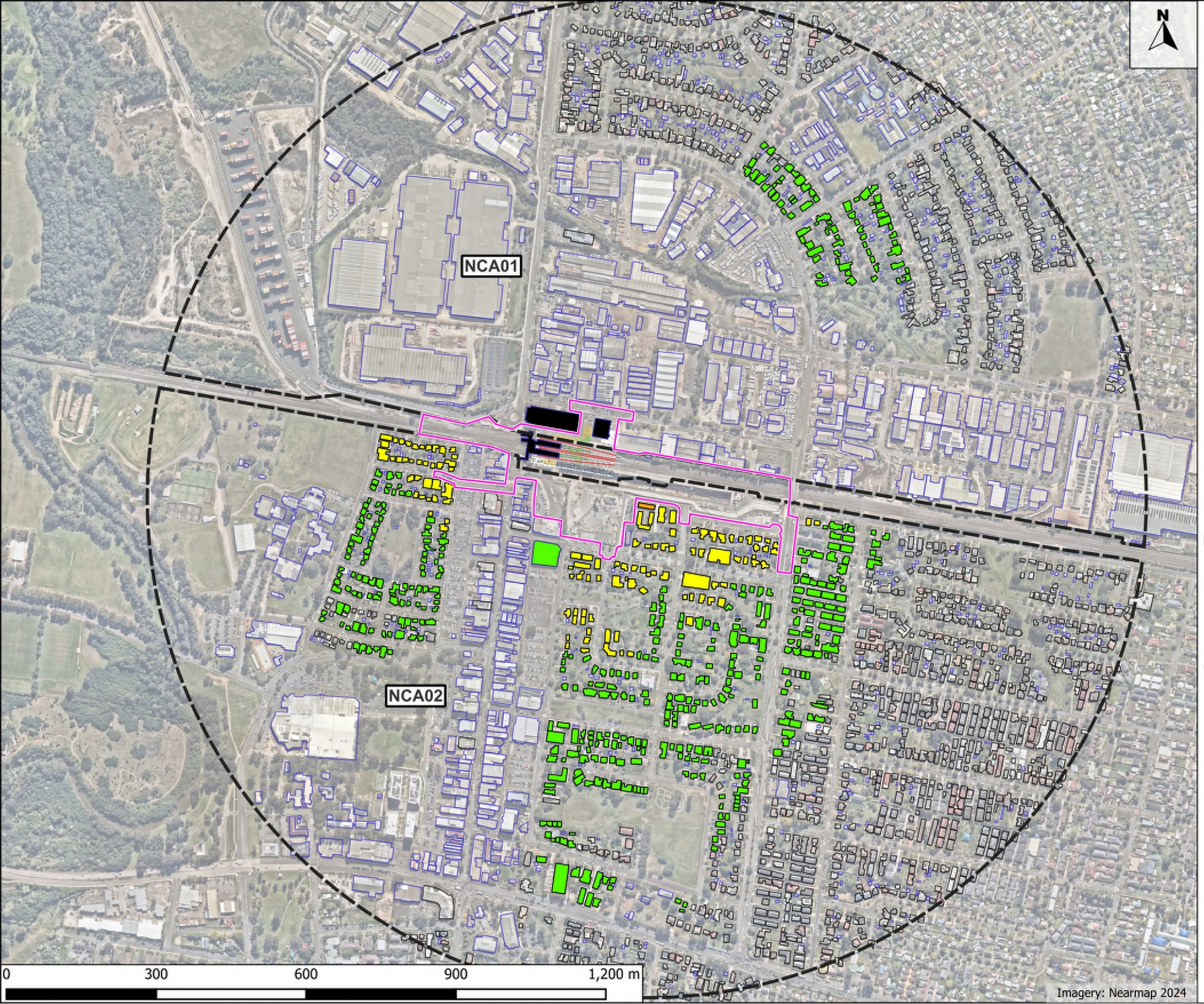
PREPARED FOR:

Laing O'Rouke Australia Construction Pty Ltd

TITLE:

w014
w003+w011
Day

PROJECT No.:	REVISION:
2305915.03	A
PREPARED:	APPROVED:
PTT	RML
EXPORTED:	SHEET SIZE:
4/10/2024	A3



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PROJECT:

Footbridge at St Marys Station
DNVIS

PREPARED FOR:

Laing O'Rouke Australia Construction Pty Ltd

TITLE:

w014
w003+w011
OOHW 3

PROJECT No.:	REVISION:
2305915.03	A
PREPARED:	APPROVED:
PTT	RML
EXPORTED:	SHEET SIZE:
4/10/2024	A3

APPENDIX B

PREDICTED NOISE LEVELS

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																					
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
2 Acacia Avenue	St Marys	Residential	47	42	42	41	52	42	46	43	47	44	47	45	48	45	48	45	48	38	45	44	47	40	45	<30	44	<30	44	47	49	46	48
4 Acacia Avenue	St Marys	Residential	47	42	42	41	52	43	47	44	47	44	47	46	48	46	48	46	48	39	45	45	48	41	46	43	47	37	45	47	49	47	49
6 Acacia Avenue	St Marys	Residential	47	42	42	41	52	44	48	45	48	45	48	48	50	47	49	47	49	40	46	46	49	41	46	44	48	38	46	48	50	47	49
8 Acacia Avenue	St Marys	Residential	47	42	42	41	52	44	48	45	49	46	49	48	50	48	50	48	50	40	47	47	50	43	48	45	49	39	47	49	51	48	50
10 Acacia Avenue	St Marys	Residential	47	42	42	41	52	46	50	46	50	47	50	50	52	50	52	49	51	41	48	49	51	44	49	45	49	39	48	50	52	49	51
12 Acacia Avenue	St Marys	Residential	47	42	42	41	52	46	50	47	50	47	50	50	52	50	52	49	51	42	48	49	51	44	49	46	50	40	48	50	52	49	51
14 Acacia Avenue	St Marys	Residential	47	42	42	41	52	46	50	47	50	48	51	50	52	50	52	49	51	42	48	49	51	45	49	46	50	40	48	50	52	50	52
16 Acacia Avenue	St Marys	Residential	47	42	42	41	52	46	50	47	50	48	51	50	52	50	52	49	51	42	48	49	51	45	49	46	50	40	48	51	52	50	52
18 Acacia Avenue	St Marys	Residential	47	42	42	41	52	47	51	48	51	48	51	51	53	51	53	50	52	43	49	50	52	45	50	47	51	41	49	51	53	50	52
20 Acacia Avenue	St Marys	Residential	47	42	42	41	52	47	51	48	51	49	52	52	53	51	53	51	53	43	49	50	52	45	50	47	51	41	49	51	53	51	53
147 Adelaide Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	30	30
151 Adelaide Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	30	30
153 Adelaide Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31
154 Adelaide Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
156 Adelaide Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31
158 Adelaide Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31
160 Adelaide Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31
161 Adelaide Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31
162 Adelaide Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31
163 Adelaide Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32
164 Adelaide Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32
165 Adelaide Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	30	30	<30	<30	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33
166 Adelaide Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32
168 Adelaide Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32
169 Adelaide Street	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	31	31	31	31	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33
170 Adelaide Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32
171 Adelaide Street	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	31	31	31	31	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33
172 Adelaide Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32
173 Adelaide Street	St Marys	Residential	47	42	42	41	52	<30	<30	30	33	31	33	31	33	31	33	31	33	<30	<30	30	33	<30	<30	33	34	<30	<30	33	34	33	34
174 Adelaide Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	30	30	31	31	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32
175 Adelaide Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	31	31	31	31	<30	<30	30	30	<30	<30	33	33	<30	<30	<30	<30	<30	<30
176 Adelaide Street	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	30	30	31	31	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	33	33
177 Adelaide Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	31	31	31	31	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30
179 Adelaide Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	37	37
180 Adelaide Street	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	31	31	31	31	31	31	31	31	<30	<30	30	30	<30	<30	<30	<30	<30	<30	33	33	33	33
182 Adelaide Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	31	31	31	31	<30	<30	30	30	<30	<30	33	33	<30	<30	<30	<30	<30	<30
186-188 Adelaide Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	30	30	35	35	<30	<30	36	36	30	30	<30	<30	38	38
187-189 Adelaide Street	St Marys	Residential	47	42	42	41	52	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	30	30	<30	<30	<30	<30	36	36	30	30	39	39	39	39
190 Adelaide Street	St Marys	Residential	47	42	42	41	52	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	30	36	<30	35	<30	35	36	39	30	36	<30	35	38	40
191 Adelaide Street	St Marys	Residential	47	42	42	41	52	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	35	35	<30	<30	36	36	30	30	39	39	39	39

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																					
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
193 Adelaide Street	St Marys	Residential	47	42	42	41	52	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	35	35	<30	<30	36	36	30	30	39	39	39	39
1 Anzac Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	36	36	36	36	30	30	<30	<30	38	38
2 Anzac Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	35	35	36	36	36	36	30	30	<30	<30	38	38
3 Anzac Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	36	36	36	36	30	30	<30	<30	38	38
4 Anzac Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	<30	35	<30	35	36	39	36	39	30	36	<30	35	39	40
5 Anzac Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	<30	35	<30	35	36	39	36	39	30	36	<30	35	39	40
6 Anzac Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	36	36	36	36	30	30	<30	<30	39	39
7 Anzac Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	<30	35	<30	35	<30	35	<30	35	<30	35	<30	35	36	39	<30	35	<30	35	<30	35	39	40
11 Anzac Street	North St Marys	Residential	48	43	43	43	53	35	35	<30	<30	37	37	<30	<30	38	38	38	38	30	30	<30	<30	37	37	<30	<30	<30	<30	39	39	40	40
1 Araluen Avenue	St Marys	Residential	47	42	42	41	52	42	45	43	46	43	46	46	47	45	47	45	47	38	43	44	46	41	45	<30	42	<30	42	46	47	45	47
3 Araluen Avenue	St Marys	Residential	47	42	42	41	52	42	45	43	46	44	46	46	47	46	47	45	47	38	43	45	47	41	45	<30	42	<30	42	46	47	46	47
5 Araluen Avenue	St Marys	Residential	47	42	42	41	52	42	45	43	46	44	46	46	47	46	47	45	47	38	43	45	47	41	45	43	46	37	43	47	48	46	47
7 Araluen Avenue	St Marys	Residential	47	42	42	41	52	43	43	44	44	44	44	46	46	46	46	46	46	38	38	45	45	41	41	43	43	37	37	47	47	46	46
9 Araluen Avenue	St Marys	Residential	47	42	42	41	52	43	43	44	44	44	44	47	47	47	47	46	46	39	39	46	46	41	41	43	43	37	37	47	47	46	46
11 Araluen Avenue	St Marys	Residential	47	42	42	41	52	43	47	44	47	45	48	48	49	47	49	47	49	39	45	46	48	<30	44	43	47	37	45	48	49	47	49
13 Araluen Avenue	St Marys	Residential	47	42	42	41	52	44	47	45	48	45	48	48	49	48	49	47	49	40	45	47	49	<30	44	44	47	38	45	48	49	47	49
15 Araluen Avenue	St Marys	Residential	47	42	42	41	52	44	48	45	48	46	49	49	50	48	50	48	50	40	46	47	49	<30	45	44	48	38	46	48	50	48	50
17 Araluen Avenue	St Marys	Residential	47	42	42	41	52	44	47	45	48	46	48	49	50	49	50	48	49	40	45	48	49	43	47	44	47	38	45	49	50	48	49
19 Araluen Avenue	St Marys	Residential	47	42	42	41	52	44	47	45	48	46	48	49	50	48	49	48	49	40	45	48	49	43	47	44	47	38	45	48	49	48	49
5 Ash Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
7 Ash Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
9 Ash Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	36	36	36	36	30	30	<30	<30	39	39
11 Ash Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	35	35	36	36	36	36	30	30	<30	<30	39	39
1 Australia Street	St Marys	Residential	47	42	42	41	52	43	47	44	48	45	48	45	48	45	48	44	48	39	46	44	48	39	46	41	46	35	45	47	49	46	49
2 Australia Street	St Marys	Residential	47	42	42	41	52	42	45	43	46	43	46	43	46	43	46	42	45	38	43	42	45	37	43	40	44	34	43	46	47	44	46
3 Australia Street	St Marys	Residential	47	42	42	41	52	43	47	44	48	45	48	45	48	45	48	45	48	39	46	44	48	41	46	41	46	35	45	48	50	47	49
4 Australia Street	St Marys	Residential	47	42	42	41	52	40	44	41	44	42	45	42	45	41	44	41	44	36	42	40	44	36	42	38	43	32	42	44	46	42	45
5 Australia Street	St Marys	Residential	47	42	42	41	52	43	47	44	48	45	48	45	48	45	48	45	48	39	46	44	48	41	46	43	47	37	46	48	50	47	49
6 Australia Street	St Marys	Residential	47	42	42	41	52	39	39	40	40	41	41	<30	<30	40	40	39	39	35	35	39	39	37	37	38	38	32	32	43	43	42	42
7 Australia Street	St Marys	Residential	47	42	42	41	52	41	44	42	45	42	45	42	45	42	45	41	44	37	42	41	44	39	43	40	44	34	42	45	46	44	46
7A Australia Street	St Marys	Residential	47	42	42	41	52	43	47	44	48	45	48	45	48	45	48	45	48	39	46	44	48	43	47	43	47	37	46	48	50	47	49
8 Australia Street	St Marys	Residential	47	42	42	41	52	38	41	40	42	40	42	39	42	40	42	39	42	34	39	39	42	37	41	38	41	32	39	43	44	42	43
9 Australia Street	St Marys	Residential	47	42	42	41	52	40	44	41	45	42	45	42	45	42	45	42	45	36	43	41	45	40	44	41	45	35	43	45	47	44	46
10 Australia Street	St Marys	Residential	47	42	42	41	52	38	41	39	42	38	41	39	42	38	41	38	41	33	39	<30	38	35	40	36	40	30	39	42	43	41	43
11 Australia Street	St Marys	Residential	47	42	42	41	52	40	44	41	45	42	45	43	46	42	45	42	45	36	43	41	45	41	45	41	45	35	43	45	47	44	46
12 Australia Street	St Marys	Residential	47	42	42	41	52	37	41	38	41	38	41	<30	38	38	41	38	41	33	39	<30	38	36	40	36	40	30	39	41	43	40	42
13 Australia Street	St Marys	Residential	47	42	42	41	52	41	45	42	45	43	46	43	46	43	46	43	46	37	43	42	45	41	45	41	45	35	43	46	47	45	47

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																					
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
15 Australia Street	St Marys	Residential	47	42	42	41	52	40	44	41	44	42	45	42	45	42	45	42	45	36	42	41	44	41	44	41	44	35	42	45	46	44	46
16 Australia Street	St Marys	Residential	47	42	42	41	52	37	40	38	41	38	41	<30	37	38	41	38	41	33	38	<30	37	37	40	36	40	30	38	41	42	41	42
17 Australia Street	St Marys	Residential	47	42	42	41	52	42	45	43	46	43	46	44	46	43	46	43	46	37	43	42	45	43	46	44	46	38	43	46	47	46	47
19 Australia Street	St Marys	Residential	47	42	42	41	52	38	41	39	42	40	42	39	42	39	42	39	42	34	39	<30	38	39	42	40	42	34	39	43	44	42	43
20B Australia Street	St Marys	Residential	47	42	42	41	52	37	40	38	41	38	41	<30	37	<30	37	<30	37	32	38	<30	37	37	40	38	41	32	38	41	42	41	42
21 Australia Street	St Marys	Residential	47	42	42	41	52	38	41	39	42	40	42	39	42	39	42	39	42	34	39	<30	38	39	42	40	42	34	39	43	44	42	43
23 Australia Street	St Marys	Residential	47	42	42	41	52	37	41	38	41	38	41	39	42	38	41	38	41	33	39	<30	38	37	41	38	41	32	39	42	43	42	43
24 Australia Street	St Marys	Residential	47	42	42	41	52	35	38	<30	35	37	39	<30	35	<30	35	<30	35	31	36	35	38	35	38	36	39	30	36	39	40	39	40
25 Australia Street	St Marys	Residential	47	42	42	41	52	38	41	39	42	38	41	39	42	39	42	39	42	34	39	<30	38	37	41	38	41	32	39	42	43	42	43
26 Australia Street	St Marys	Residential	47	42	42	41	52	36	39	37	39	37	39	<30	35	<30	35	<30	35	31	36	35	38	36	39	38	40	32	37	39	40	40	41
27 Australia Street	St Marys	Residential	47	42	42	41	52	37	40	38	41	38	41	<30	37	38	41	38	41	33	38	<30	37	37	40	38	41	32	38	41	42	41	42
28 Australia Street	St Marys	Residential	47	42	42	41	52	35	38	<30	35	<30	35	<30	35	<30	35	<30	35	30	36	<30	35	35	38	36	39	30	36	39	40	39	40
30 Australia Street	St Marys	Residential	47	42	42	41	52	35	35	<30	<30	37	37	<30	<30	<30	<30	<30	<30	31	31	35	35	35	35	36	36	30	30	39	39	39	39
34 Australia Street	St Marys	Residential	47	42	42	41	52	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	<30	<30	<30	<30	36	36	30	30	39	39	39	39
35 Australia Street	St Marys	Residential	47	42	42	41	52	36	39	37	39	38	40	<30	35	<30	35	<30	35	32	37	35	38	36	39	38	40	32	37	41	42	41	42
36 Australia Street	St Marys	Residential	47	42	42	41	52	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	30	30	<30	<30	<30	<30	36	36	30	30	39	39	39	39
37 Australia Street	St Marys	Residential	47	42	42	41	52	36	39	37	39	38	40	<30	35	<30	35	<30	35	32	37	35	38	36	39	38	40	32	37	41	42	41	42
38 Australia Street	St Marys	Residential	47	42	42	41	52	35	35	<30	<30	37	37	<30	<30	<30	<30	<30	<30	31	31	35	35	35	35	<30	<30	<30	<30	39	39	39	39
39 Australia Street	St Marys	Residential	47	42	42	41	52	37	39	38	40	38	40	39	40	38	40	38	40	33	37	<30	35	37	39	38	40	32	37	42	43	42	43
40 Australia Street	St Marys	Residential	47	42	42	41	52	35	35	<30	<30	37	37	<30	<30	<30	<30	<30	<30	31	31	<30	<30	35	35	36	36	30	30	39	39	40	40
41 Australia Street	St Marys	Residential	47	42	42	41	52	37	39	37	39	38	40	<30	35	<30	35	<30	35	32	37	<30	35	36	39	38	40	32	37	41	42	41	42
42 Australia Street	St Marys	Residential	47	42	42	41	52	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	<30	<30	35	35	36	36	30	30	39	39	39	39
43 Australia Street	St Marys	Residential	47	42	42	41	52	37	39	38	40	38	40	<30	35	38	40	<30	35	32	37	<30	35	36	39	38	40	32	37	41	42	41	42
44 Australia Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	30	30	<30	<30	<30	<30	36	36	30	30	<30	<30	38	38
45 Australia Street	St Marys	Residential	47	42	42	41	52	36	39	37	39	38	40	<30	35	<30	35	<30	35	32	37	35	38	36	39	38	40	32	37	39	40	41	42
46 Australia Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	38	38
47 Australia Street	St Marys	Residential	47	42	42	41	52	36	39	37	39	37	39	<30	35	<30	35	<30	35	31	36	35	38	35	38	38	40	32	37	39	40	40	41
48 Australia Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	36	36	30	30	<30	<30	38	38
49 Australia Street	St Marys	Residential	47	42	42	41	52	36	39	37	39	37	39	<30	35	<30	35	<30	35	32	37	35	38	35	38	38	40	32	37	39	40	40	41
50 Australia Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	30	30	<30	<30	<30	<30	36	36	30	30	<30	<30	39	39
51 Australia Street	St Marys	Residential	47	42	42	41	52	35	38	<30	35	37	39	<30	35	<30	35	<30	35	31	36	35	38	<30	35	38	40	32	37	39	40	40	41
52 Australia Street	St Marys	Residential	47	42	42	41	52	35	35	<30	<30	35	35	<30	<30	<30	<30	<30	<30	30	30	<30	<30	<30	<30	36	36	30	30	39	39	39	39
53 Australia Street	St Marys	Residential	47	42	42	41	52	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	30	30	<30	<30	<30	<30	36	36	30	30	39	39	39	39
54 Australia Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	36	36	30	30	<30	<30	38	38
55 Australia Street	St Marys	Residential	47	42	42	41	52	35	38	<30	35	35	38	<30	35	<30	35	<30	35	30	36	<30	35	<30	35	36	39	30	36	39	40	39	40
56 Australia Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	38	38
57 Australia Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	33	33	30	30	<30	<30	<30	<30	36	36	30	30	<30	<30	39	39
58 Australia Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	37	37
59 Australia Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	33	33	30	30	<30	<30	<30	<30	36	36	30	30	<30	<30	39	39
62 Australia Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	37	37

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																							
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
64 Australia Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	37	37
65 Australia Street	St Marys	Residential	47	42	42	41	52	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	<30	35	<30	35	<30	35	<30	35	<30	35	<30	35	38	40
66 Australia Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30
67 Australia Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	37	37
68 Australia Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	34	<30	<30	<30	<30	<30	<30
69 Australia Street	St Marys	Residential	47	42	42	41	52	<30	35	<30	35	35	38	<30	35	<30	35	33	37	<30	35	<30	35	<30	35	<30	35	<30	35	<30	35	38	40
70 Australia Street	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	31	31	<30	<30	31	31	31	31	<30	<30	<30	<30	<30	<30	32	32	<30	<30	33	33	<30	<30
71A Australia Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	35	<30	<30	<30	<30	33	34	<30	<30	<30	<30	<30	<30	33	34	<30	<30	<30	<30	<30	<30
71 Australia Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	38	38
72 Australia Street	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	31	31	<30	<30	31	31	31	31	<30	<30	30	30	<30	<30	32	32	<30	<30	33	33	<30	<30
73 Australia Street	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	31	31	<30	<30	<30	<30	31	31	<30	<30	<30	<30	<30	<30	32	32	<30	<30	<30	<30	<30	<30
74-76 Australia Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	30	30	31	31	31	31	31	31	<30	<30	30	30	<30	<30	<30	<30	<30	<30	33	33	33	33
75 Australia Street	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	31	31	<30	<30	<30	<30	31	31	<30	<30	<30	<30	<30	<30	32	32	<30	<30	33	33	<30	<30
77 Australia Street	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	31	31	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32	<30	<30	<30	<30	<30	<30
78 Australia Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	30	30	31	31	31	31	30	30	<30	<30	30	30	<30	<30	<30	<30	<30	<30	33	33	33	33
79 Australia Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30
80 Australia Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	30	30	31	31	31	31	30	30	<30	<30	30	30	<30	<30	<30	<30	<30	<30	33	33	33	33
81 Australia Street	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	31	31	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	32	32	<30	<30	<30	<30	<30	<30
82 Australia Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	30	30	31	31	31	31	30	30	<30	<30	30	30	<30	<30	<30	<30	<30	<30	32	32	33	33
83 Australia Street	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	31	31	<30	<30	31	31	31	31	<30	<30	<30	<30	<30	<30	32	32	<30	<30	33	33	<30	<30
84 Australia Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
85 Australia Street	St Marys	Residential	47	42	42	41	52	<30	<30	30	33	31	33	<30	<30	31	33	33	34	<30	<30	<30	<30	<30	<30	32	34	<30	<30	33	34	<30	<30
87 Australia Street	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	31	31	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	32	32	<30	<30	33	33	<30	<30
1 Benalong Street	St Marys	Residential	47	42	42	41	52	41	44	42	45	43	45	44	46	43	45	43	45	37	42	42	45	39	43	41	44	35	42	45	46	45	46
2 Benalong Street	St Marys	Residential	47	42	42	41	52	42	45	43	46	43	46	44	46	44	46	44	46	37	43	43	46	40	44	41	45	35	43	46	47	45	47
3 Benalong Street	St Marys	Residential	47	42	42	41	52	40	43	41	44	42	44	43	45	43	45	42	44	36	41	42	44	39	43	41	44	35	41	45	46	44	45
4 Benalong Street	St Marys	Residential	47	42	42	41	52	41	45	42	45	43	46	44	46	44	46	44	46	37	43	43	46	40	44	41	45	35	43	46	47	45	47
5 Benalong Street	St Marys	Residential	47	42	42	41	52	41	44	42	45	42	45	43	45	43	45	43	45	36	42	42	45	39	43	41	44	35	42	45	46	44	46
6 Benalong Street	St Marys	Residential	47	42	42	41	52	41	45	42	45	42	45	43	46	43	46	43	46	37	43	42	45	39	44	41	45	35	43	45	47	44	46
7 Benalong Street	St Marys	Residential	47	42	42	41	52	40	44	41	44	42	45	43	45	43	45	42	45	36	42	42	45	39	43	40	44	34	42	44	46	44	46
8 Benalong Street	St Marys	Residential	47	42	42	41	52	41	45	42	45	42	45	43	46	43	46	42	45	36	43	42	45	<30	42	41	45	35	43	45	47	44	46
9 Benalong Street	St Marys	Residential	47	42	42	41	52	40	44	41	44	41	44	43	45	42	45	42	45	36	42	41	44	37	42	40	44	34	42	44	46	<30	41
10 Benalong Street	St Marys	Residential	47	42	42	41	52	41	44	42	45	42	45	44	46	44	46	43	45	36	42	43	45	<30	41	41	44	35	42	45	46	44	46
11 Benalong Street	St Marys	Residential	47	42	42	41	52	39	43	40	43	41	44	42	44	42	44	41	44	35	41	41	44	37	42	<30	40	<30	40	44	45	<30	40
12 Benalong Street	St Marys	Residential	47	42	42	41	52	41	45	42	45	42	45	44	46	44	46	43	46	36	43	43	46	39	44	41	45	35	43	45	47	44	46
13 Benalong Street	St Marys	Residential	47	42	42	41	52	40	43	41	44	41	44	43	45	42	44	42	44	35	41	42	44	37	42	40	43	34	41	44	45	<30	40
14 Benalong Street	St Marys	Residential	47	42	42	41	52	41	45	42	45	42	45	44	46	44	46	44	46	37	43	43	46	40	44	41	45	35	43	45	47	45	47
15 Benalong Street	St Marys	Residential	47	42	42	41	52	40	43	41	44	41	44	43	45	43	45	42	44	35	41	42	44	37	42	40	43	34	41	44	45	<30	40
16 Benalong Street	St Marys	Residential	47	42	42	41	52	41	44	42	45	42	45	45	46	44	46	44	46	37	42	43	45	40	44	41	44	35	42	45	46	44	46
17 Benalong Street	St Marys	Residential	47	42	42	41	52	40	43	41	44	41	44	43	45	42	44	42	44	35	41	42	44	37	42	40	43	34	41	44	45	<30	40

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																					
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
18 Benalong Street	St Marys	Residential	47	42	42	41	52	41	44	42	45	42	45	45	46	44	46	44	46	37	42	44	46	40	44	41	44	35	42	45	46	44	46
19 Benalong Street	St Marys	Residential	47	42	42	41	52	40	44	41	44	41	44	43	45	43	45	42	45	35	42	42	45	<30	41	40	44	34	42	44	46	<30	41
20 Benalong Street	St Marys	Residential	47	42	42	41	52	41	44	42	45	42	45	45	46	44	46	44	46	37	42	44	46	40	44	41	44	35	42	45	46	44	46
21 Benalong Street	St Marys	Residential	47	42	42	41	52	40	44	41	44	41	44	44	46	43	45	43	45	36	42	42	45	39	43	40	44	34	42	44	46	44	46
23 Benalong Street	St Marys	Residential	47	42	42	41	52	40	43	41	44	41	44	44	45	43	45	43	45	36	41	42	44	39	43	40	43	34	41	44	45	44	45
1 Birch Street	North St Marys	Residential	48	43	43	43	53	37	40	38	41	38	41	39	41	39	41	39	41	32	38	<30	37	<30	37	40	42	34	39	41	42	42	43
2 Birch Street	North St Marys	Residential	48	43	43	43	53	36	39	37	39	38	40	<30	35	38	40	38	40	31	36	<30	35	37	39	38	40	32	37	<30	35	41	42
3 Birch Street	North St Marys	Residential	48	43	43	43	53	37	40	38	41	38	41	39	41	39	41	39	41	32	38	<30	37	39	41	40	42	34	39	41	42	42	43
4 Birch Street	North St Marys	Residential	48	43	43	43	53	36	39	37	39	38	40	39	40	38	40	38	40	32	37	<30	35	37	39	<30	35	<30	35	<30	35	41	42
5 Birch Street	North St Marys	Residential	48	43	43	43	53	37	40	38	41	<30	37	39	41	39	41	39	41	33	38	<30	37	39	41	40	42	34	39	42	43	42	43
6 Birch Street	North St Marys	Residential	48	43	43	43	53	36	39	37	39	38	40	39	40	38	40	38	40	32	37	<30	35	<30	35	<30	35	<30	35	41	42	41	42
7 Birch Street	North St Marys	Residential	48	43	43	43	53	37	40	38	41	38	41	39	41	40	42	39	41	33	38	39	41	39	41	40	42	34	39	42	43	42	43
8 Birch Street	North St Marys	Residential	48	43	43	43	53	36	39	37	39	38	40	39	40	38	40	38	40	32	37	<30	35	<30	35	<30	35	<30	35	41	42	41	42
9 Birch Street	North St Marys	Residential	48	43	43	43	53	37	37	38	38	<30	<30	39	39	39	39	39	39	32	32	<30	<30	<30	<30	40	40	34	34	41	41	42	42
10 Birch Street	North St Marys	Residential	48	43	43	43	53	36	39	37	39	38	40	39	40	38	40	38	40	32	37	<30	35	37	39	<30	35	<30	35	41	42	41	42
11 Birch Street	North St Marys	Residential	48	43	43	43	53	37	37	38	38	38	38	39	39	38	38	39	39	32	32	<30	<30	<30	<30	40	40	34	34	41	41	42	42
12 Birch Street	North St Marys	Residential	48	43	43	43	53	36	36	37	37	38	38	<30	<30	<30	<30	38	38	32	32	<30	<30	37	37	<30	<30	<30	<30	<30	<30	41	41
13 Birch Street	North St Marys	Residential	48	43	43	43	53	37	39	38	40	<30	35	39	40	39	40	39	40	33	37	<30	35	39	40	40	41	34	38	41	42	42	43
14 Birch Street	North St Marys	Residential	48	43	43	43	53	36	39	37	39	38	40	39	40	38	40	38	40	32	37	<30	35	<30	35	40	41	34	38	41	42	42	43
15 Birch Street	North St Marys	Residential	48	43	43	43	53	37	37	38	38	<30	<30	39	39	39	39	39	39	33	33	<30	<30	39	39	41	41	35	35	42	42	42	42
16 Birch Street	North St Marys	Residential	48	43	43	43	53	36	39	37	39	38	40	39	40	38	40	38	40	32	37	<30	35	<30	35	40	41	34	38	41	42	42	43
17 Birch Street	North St Marys	Residential	48	43	43	43	53	37	37	38	38	<30	<30	<30	<30	39	39	39	39	33	33	<30	<30	39	39	41	41	35	35	42	42	42	42
18 Birch Street	North St Marys	Residential	48	43	43	43	53	37	39	38	40	38	40	39	40	38	40	38	40	32	37	<30	35	<30	35	40	41	34	38	41	42	42	43
19 Birch Street	North St Marys	Residential	48	43	43	43	53	37	37	38	38	<30	<30	39	39	39	39	39	39	33	33	<30	<30	39	39	41	41	35	35	42	42	42	42
20 Birch Street	North St Marys	Residential	48	43	43	43	53	36	39	37	39	38	40	39	40	38	40	38	40	32	37	<30	35	<30	35	40	41	34	38	41	42	42	43
21 Birch Street	North St Marys	Residential	48	43	43	43	53	37	37	38	38	<30	<30	39	39	39	39	39	39	33	33	<30	<30	39	39	41	41	35	35	42	42	42	42
22 Birch Street	North St Marys	Residential	48	43	43	43	53	36	39	37	39	38	40	39	40	38	40	38	40	32	37	<30	35	<30	35	40	41	34	38	41	42	42	43
23 Birch Street	North St Marys	Residential	48	43	43	43	53	37	37	38	38	<30	<30	39	39	38	38	39	39	32	32	<30	<30	39	39	41	41	35	35	41	41	42	42
24 Birch Street	North St Marys	Residential	48	43	43	43	53	35	35	<30	<30	37	37	<30	<30	<30	<30	<30	<30	31	31	35	35	<30	<30	40	40	34	34	39	39	42	42
25 Birch Street	North St Marys	Residential	48	43	43	43	53	37	37	38	38	38	38	39	39	38	38	38	38	32	32	<30	<30	39	39	41	41	35	35	41	41	42	42
26 Birch Street	North St Marys	Residential	48	43	43	43	53	35	35	<30	<30	38	38	<30	<30	<30	<30	38	38	31	31	35	35	37	37	40	40	34	34	39	39	41	41
27 Birch Street	North St Marys	Residential	48	43	43	43	53	36	36	37	37	38	38	<30	<30	<30	<30	38	38	32	32	<30	<30	<30	<30	40	40	34	34	41	41	42	42
28 Birch Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	37	39	<30	35	<30	35	<30	35	30	36	35	38	37	39	40	41	34	38	39	40	41	42

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																					
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
29 Birch Street	North St Marys	Residential	48	43	43	43	53	36	36	37	37	38	38	39	39	38	38	38	38	32	32	<30	<30	39	39	40	40	34	34	41	41	42	42
30 Birch Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	37	37	40	40	34	34	39	39	41	41
31 Birch Street	North St Marys	Residential	48	43	43	43	53	36	40	37	40	38	41	<30	37	<30	37	38	41	31	38	<30	37	39	41	41	42	35	39	<30	37	42	43
32 Birch Street	North St Marys	Residential	48	43	43	43	53	35	39	<30	37	37	40	<30	37	<30	37	<30	37	<30	37	35	39	39	41	41	42	35	39	39	41	42	43
33 Birch Street	North St Marys	Residential	48	43	43	43	53	36	40	<30	37	38	41	<30	37	<30	37	38	41	31	38	<30	37	39	41	41	42	35	39	<30	37	42	43
34 Birch Street	North St Marys	Residential	48	43	43	43	53	<30	37	<30	37	35	39	<30	37	<30	37	<30	37	<30	37	35	39	37	40	40	42	34	39	<30	37	41	42
35 Birch Street	North St Marys	Residential	48	43	43	43	53	35	39	<30	37	37	40	<30	37	<30	37	<30	37	30	38	35	39	<30	37	40	42	34	39	39	41	42	43
36 Birch Street	North St Marys	Residential	48	43	43	43	53	<30	37	<30	37	35	39	<30	37	<30	37	<30	37	<30	37	<30	37	37	40	40	42	34	39	<30	37	41	42
37 Birch Street	North St Marys	Residential	48	43	43	43	53	35	39	<30	37	37	40	<30	37	<30	37	<30	37	30	38	35	39	<30	37	40	42	34	39	39	41	41	42
38 Birch Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	40	40
39 Birch Street	North St Marys	Residential	48	43	43	43	53	<30	38	<30	38	37	41	<30	38	<30	38	<30	38	<30	38	35	40	37	41	41	43	35	40	39	42	42	43
40 Birch Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	40	40
41 Birch Street	North St Marys	Residential	48	43	43	43	53	<30	37	<30	37	35	39	<30	37	<30	37	<30	37	<30	37	35	39	37	40	40	42	34	39	<30	37	41	42
42 Birch Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	39	39
43 Birch Street	North St Marys	Residential	48	43	43	43	53	<30	37	<30	37	35	39	<30	37	<30	37	<30	37	<30	37	<30	37	36	40	<30	37	<30	37	<30	37	40	42
44 Birch Street	North St Marys	Residential	48	43	43	43	53	<30	37	<30	37	31	38	31	38	31	38	31	38	<30	37	30	38	<30	37	38	41	32	38	<30	37	40	42
45 Birch Street	North St Marys	Residential	48	43	43	43	53	<30	38	<30	38	35	40	<30	38	<30	38	<30	38	<30	38	<30	38	35	40	40	42	34	39	<30	38	41	43
46 Birch Street	North St Marys	Residential	48	43	43	43	53	<30	37	30	38	31	38	31	38	<30	37	31	38	<30	37	30	38	<30	37	38	41	32	38	<30	37	39	41
47 Birch Street	North St Marys	Residential	48	43	43	43	53	<30	38	<30	38	34	39	<30	38	<30	38	33	39	<30	38	<30	38	<30	38	40	42	34	39	<30	38	41	43
5 Blair Avenue	St Marys	Residential	47	42	42	41	52	47	51	48	52	49	52	52	54	52	54	52	54	43	50	51	53	48	52	50	53	44	50	52	54	52	54
6-10 Blair Avenue	St Marys	Residential	47	42	42	41	52	47	51	48	51	49	52	51	53	51	53	51	53	43	49	50	52	48	51	50	52	44	49	51	53	52	53
7 Blair Avenue	St Marys	Residential	47	42	42	41	52	47	51	47	51	48	51	51	53	51	53	51	53	42	49	50	52	48	51	49	52	43	49	51	53	52	53
9 Blair Avenue	St Marys	Residential	47	42	42	41	52	46	50	47	50	47	50	50	52	50	52	50	52	41	48	49	51	47	50	49	51	43	48	50	52	51	52
10 Blair Avenue	St Marys	Residential	47	42	42	41	52	46	50	47	51	48	51	51	53	50	52	50	52	42	49	49	52	47	51	49	52	43	49	51	53	51	53
11 Blair Avenue	St Marys	Residential	47	42	42	41	52	45	49	46	49	47	50	50	51	49	51	49	51	41	47	48	50	46	49	48	50	42	47	50	51	50	51
12 Blair Avenue	St Marys	Residential	47	42	42	41	52	46	49	47	50	48	50	51	52	51	52	50	51	42	47	50	51	47	50	49	51	43	48	50	51	51	52
13 Blair Avenue	St Marys	Residential	47	42	42	41	52	45	49	45	49	46	49	49	51	48	50	48	50	40	47	47	50	46	49	48	50	42	47	49	51	50	51
14 Blair Avenue	St Marys	Residential	47	42	42	41	52	46	50	47	50	48	51	50	52	50	52	49	51	41	48	49	51	46	50	49	51	43	48	50	52	51	52
15 Blair Avenue	St Marys	Residential	47	42	42	41	52	44	48	45	48	46	49	48	50	48	50	47	49	40	46	47	49	45	48	47	49	41	46	49	50	49	50
16 Blair Avenue	St Marys	Residential	47	42	42	41	52	46	49	47	50	47	50	50	51	49	51	49	51	41	47	48	50	45	49	48	50	42	47	50	51	50	51
17 Blair Avenue	St Marys	Residential	47	42	42	41	52	44	48	45	48	46	49	48	50	48	50	48	50	40	46	47	49	45	48	47	49	41	46	49	50	49	50
18 Blair Avenue	St Marys	Residential	47	42	42	41	52	45	48	46	49	47	49	49	50	49	50	49	50	41	46	48	50	45	48	48	50	42	47	50	51	50	51
19 Blair Avenue	St Marys	Residential	47	42	42	41	52	44	47	45	48	46	48	49	50	48	49	48	49	40	45	47	49	45	48	47	49	41	46	49	50	49	50
20 Blair Avenue	St Marys	Residential	47	42	42	41	52	45	49	46	49	47	50	49	51	49	51	48	50	41	47	48	50	44	48	47	50	41	47	49	51	50	51
21 Blair Avenue	St Marys	Residential	47	42	42	41	52	44	47	45	48	46	48	48	49	48	49	47	49	40	45	47	49	45	48	47	49	41	46	49	50	49	50

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																							
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
23 Blair Avenue	St Marys	Residential	47	42	42	41	52	44	48	45	48	46	49	48	50	48	50	47	49	40	46	47	49	45	48	47	49	41	46	49	50	49	50
109 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
111 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	31	31
113 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	31	31
114 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	31	31
115 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	31	31
116 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	31	31
117 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32	32	32
118 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	31	31
120 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	31	31
121 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32	32	32
122 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	31	31
123 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	30	30	<30	<30	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	32	32
124 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	32	32
125 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	31	31	31	31	31	31	31	31	<30	<30	30	30	<30	<30	<30	<30	<30	<30	33	33	33	33
126 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32	32	32
127 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	30	33	31	33	31	33	31	33	31	33	<30	<30	30	33	<30	<30	<30	<30	<30	<30	33	34	33	34
129 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	31	31	31	31	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
130 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32	32	32
130A Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	32	32
132 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	30	30	<30	<30	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	33	33
133 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	31	31	31	31	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
134 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	30	33	31	33	31	33	<30	<30	31	33	<30	<30	30	33	<30	<30	<30	<30	<30	<30	33	34	33	34
135 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	31	31	31	31	<30	<30	30	30	<30	<30	32	32	<30	<30	<30	<30	<30	<30
137 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	31	31	31	31	<30	<30	30	30	<30	<30	33	33	<30	<30	<30	<30	<30	<30
137A Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32	<30	<30	<30	<30	<30	<30
139 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30
140 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	31	33	31	33	31	33	31	33	<30	<30	30	33	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
141 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30
142 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	31	33	31	33	31	33	31	33	<30	<30	30	33	<30	<30	32	34	<30	<30	<30	<30	<30	<30
143 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30
144 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	31	33	31	33	31	33	<30	<30	30	33	<30	<30	32	34	<30	<30	<30	<30	<30	<30
145 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	37	37
146 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	31	33	<30	<30	31	33	<30	<30	30	33	<30	<30	32	34	<30	<30	<30	<30	<30	<30
148 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	31	31	31	31	<30	<30	30	30	<30	<30	33	33	<30	<30	<30	<30	<30	<30
150 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	31	31	31	31	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30
151 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	37	37
152 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	31	31	<30	<30	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30
153 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	37	37
154 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																							
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
155 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	38	38
156 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	37	37
157 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	38	38
158 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	37	37
159 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	30	30	<30	<30	35	35	36	36	30	30	39	39	39	39
160 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	38	38
160A Brisbane Street	St Marys	Residential	47	42	42	41	52	35	35	<30	<30	35	35	<30	<30	<30	<30	<30	<30	30	30	<30	<30	<30	<30	36	36	30	30	39	39	38	38
161 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	30	30	<30	<30	35	35	36	36	30	30	39	39	39	39
163 Brisbane Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	30	30	<30	<30	35	35	36	36	30	30	39	39	39	39
167 Brisbane Street	St Marys	Residential	47	42	42	41	52	38	41	39	42	<30	38	39	42	38	41	38	41	33	39	<30	38	37	41	38	41	32	39	42	43	42	43
169 Brisbane Street	St Marys	Residential	47	42	42	41	52	39	42	40	42	41	43	41	43	40	42	39	42	35	40	39	42	39	42	41	43	35	40	44	45	44	45
171-173 Brisbane Street	St Marys	Residential	47	42	42	41	52	40	43	41	44	42	44	42	44	41	44	41	44	36	41	41	44	40	43	<30	40	<30	40	45	46	45	46
1 Brock Avenue	St Marys	Residential	47	42	42	41	52	40	43	41	44	41	44	43	45	43	45	43	45	35	41	42	44	41	44	43	45	37	42	44	45	45	46
2 Brock Avenue	St Marys	Residential	47	42	42	41	52	40	43	41	44	42	44	44	45	43	45	43	45	35	41	42	44	41	44	43	45	37	42	44	45	45	46
3 Brock Avenue	St Marys	Residential	47	42	42	41	52	40	43	41	44	42	44	44	45	43	45	43	45	35	41	42	44	41	44	43	45	37	42	44	45	45	46
4 Brock Avenue	St Marys	Residential	47	42	42	41	52	40	43	41	44	42	44	44	45	43	45	43	45	35	41	43	45	41	44	43	45	37	42	44	45	45	46
5 Brock Avenue	St Marys	Residential	47	42	42	41	52	40	43	41	44	42	44	44	45	43	45	43	45	35	41	43	45	41	44	43	45	37	42	44	45	45	46
6 Brock Avenue	St Marys	Residential	47	42	42	41	52	39	39	40	40	41	41	44	44	43	43	43	43	35	35	42	42	41	41	43	43	37	37	44	44	45	45
7 Brock Avenue	St Marys	Residential	47	42	42	41	52	40	42	41	43	41	43	44	45	43	44	43	44	35	40	43	44	41	43	43	44	37	41	44	45	45	46
8 Brock Avenue	St Marys	Residential	47	42	42	41	52	40	43	41	44	42	44	44	45	44	45	43	45	35	41	43	45	41	44	43	45	37	42	44	45	45	46
9 Brock Avenue	St Marys	Residential	47	42	42	41	52	40	43	41	44	42	44	45	46	44	45	44	45	36	41	43	45	41	44	43	45	37	42	45	46	45	46
10 Brock Avenue	St Marys	Residential	47	42	42	41	52	41	44	42	45	42	45	45	46	44	46	44	46	36	42	44	46	<30	41	44	46	38	43	45	46	46	47
11 Brock Avenue	St Marys	Residential	47	42	42	41	52	40	44	41	44	42	45	45	46	44	46	44	46	36	42	43	45	<30	41	44	46	38	43	45	46	46	47
12 Brock Avenue	St Marys	Residential	47	42	42	41	52	41	44	42	45	43	45	45	46	44	46	44	46	36	42	43	45	<30	41	44	46	38	43	45	46	46	47
13 Brock Avenue	St Marys	Residential	47	42	42	41	52	41	44	42	45	43	45	45	46	44	46	44	46	36	42	43	45	<30	41	44	46	38	43	45	46	46	47
1 Camira Street	St Marys	Residential	47	42	42	41	52	50	54	51	55	52	55	55	57	55	57	54	56	46	53	54	56	50	54	54	56	48	53	54	56	56	57
3 Camira Street	St Marys	Residential	47	42	42	41	52	49	53	50	54	51	54	55	56	54	56	54	56	45	52	53	55	49	53	54	56	48	53	53	55	56	57
5 Camira Street	St Marys	Residential	47	42	42	41	52	49	53	49	53	50	53	54	55	54	55	53	55	44	51	53	55	49	53	54	55	48	52	53	55	55	56
7 Camira Street	St Marys	Residential	47	42	42	41	52	48	52	49	53	49	53	53	55	53	55	52	54	43	51	52	54	48	52	53	55	47	52	52	54	55	56
9 Camira Street	St Marys	Residential	47	42	42	41	52	48	52	48	52	49	52	53	54	52	54	52	54	43	50	52	54	48	52	53	54	47	51	52	54	54	55
11 Camira Street	St Marys	Residential	47	42	42	41	52	47	52	47	52	49	53	52	54	52	54	51	54	42	51	51	54	49	53	53	55	47	52	51	54	54	55
13 Camira Street	St Marys	Residential	47	42	42	41	52	46	53	47	53	48	53	51	55	51	55	51	55	41	52	50	54	50	54	52	55	46	53	51	55	53	56
15 Camira Street	St Marys	Residential	47	42	42	41	52	45	53	46	53	48	53	51	55	50	54	50	54	40	52	49	54	49	54	52	55	46	53	50	54	53	56
139 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
141 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	30	30
143 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31
144 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	30	30
145 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31
146A Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	30	30
147 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																							
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
148 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	30	30
149 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31
150 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	30	30
151 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31
152 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31
153 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31
154 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31
155 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31
156 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	31	31
157 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	32	32
158-160 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	31	31
159 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	32	32
161 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	32	32
162 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	32	32
163 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32	32	32
164-166 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	33	33
165 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	33	33
167 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	30	33	31	33	31	33	<30	<30	30	33	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	34	33	34
168 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	31	31	<30	<30	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	33	33
169 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	31	33	31	33	31	33	<30	<30	30	33	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
170 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	31	31	31	31	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	33	33
171 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	31	31	31	31	31	31	<30	<30	30	30	<30	<30	32	32	<30	<30	<30	<30	<30	<30
172 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	30	33	31	33	31	33	<30	<30	30	33	<30	<30	30	33	<30	<30	32	34	<30	<30	33	34	<30	<30
173 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	31	33	31	33	31	33	<30	<30	30	33	<30	<30	32	34	<30	<30	<30	<30	<30	<30
174 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	31	33	31	33	31	33	<30	<30	30	33	<30	<30	33	34	<30	<30	<30	<30	<30	<30
175 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	31	33	31	33	<30	<30	30	33	<30	<30	33	34	<30	<30	<30	<30	<30	<30
176 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	31	33	31	33	<30	<30	30	33	<30	<30	33	34	<30	<30	<30	<30	<30	<30
177 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	31	33	31	33	<30	<30	30	33	<30	<30	33	34	<30	<30	<30	<30	<30	<30
178 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	31	33	31	33	<30	<30	30	33	<30	<30	33	34	<30	<30	<30	<30	<30	<30
179 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	31	31	31	31	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30
180 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	31	31	31	31	<30	<30	30	30	<30	<30	33	33	<30	<30	<30	<30	<30	<30
180A Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	31	31	31	31	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30
181 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30
182 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	37	37
183 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	37	37
184 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	37	37
185 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	37	37
186 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	37	37
187 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	37	37
188 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	37	37

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																							
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
189 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	38	38
190 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	38	38
191 Canberra Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	38	38
2-10 Carinya Avenue	St Marys	Commercial	70	70	70	70	0	38	41	38	41	<30	37	<30	37	40	42	39	41	33	38	39	41	36	40	38	41	32	38	42	43	41	42
29 Carinya Avenue	St Marys	Medical	65	65	65	65	0	41	44	42	44	42	44	43	45	43	45	42	44	36	41	42	44	39	43	41	44	35	41	45	46	44	45
32-52 Carinya Avenue	St Marys	Commercial	70	70	70	70	0	41	44	42	45	42	45	43	45	43	45	42	45	36	42	42	45	39	43	41	44	35	42	45	46	44	46
33 Carinya Avenue	St Marys	Residential	47	42	42	41	52	41	44	42	45	43	45	44	46	44	46	43	45	37	42	43	45	40	44	41	44	35	42	46	47	45	46
35 Carinya Avenue	St Marys	Residential	47	42	42	41	52	42	45	43	46	44	46	45	47	45	47	44	46	38	43	44	46	41	45	<30	42	<30	42	46	47	46	47
37 Carinya Avenue	St Marys	Residential	47	42	42	41	52	42	42	43	43	44	44	45	45	45	45	45	45	38	38	44	44	41	41	<30	<30	<30	<30	47	47	46	46
39 Carinya Avenue	St Marys	Residential	47	42	42	41	52	43	47	44	47	44	47	46	48	45	48	45	48	39	45	44	47	41	46	43	47	37	45	47	49	46	48
41 Carinya Avenue	St Marys	Residential	47	42	42	41	52	43	47	44	47	44	47	46	48	45	48	45	48	39	45	44	47	41	46	43	47	37	45	47	49	46	48
43 Carinya Avenue	St Marys	Residential	47	42	42	41	52	43	47	44	47	44	47	46	48	45	48	45	48	39	45	44	47	41	46	43	47	37	45	47	49	46	48
45 Carinya Avenue	St Marys	Residential	47	42	42	41	52	43	47	44	48	44	48	45	48	45	48	45	48	39	46	44	48	41	46	43	47	37	46	47	49	46	49
47 Carinya Avenue	St Marys	Residential	47	42	42	41	52	43	47	44	48	45	48	46	49	46	49	45	48	39	46	45	48	41	46	43	47	37	46	47	49	47	49
49 Carinya Avenue	St Marys	Residential	47	42	42	41	52	44	48	45	49	45	49	47	50	46	49	46	49	40	47	45	49	41	47	44	48	38	47	48	50	47	50
51 Carinya Avenue	St Marys	Residential	47	42	42	41	52	45	49	46	50	46	50	48	51	48	51	47	50	41	48	47	50	<30	47	45	49	39	48	49	51	49	51
53 Carinya Avenue	St Marys	Residential	47	42	42	41	52	46	50	47	51	47	51	50	52	50	52	49	52	42	49	49	52	44	49	46	50	40	49	50	52	49	52
55 Carinya Avenue	St Marys	Residential	47	42	42	41	52	47	51	48	51	48	51	51	53	51	53	50	52	43	49	50	52	45	50	47	51	41	49	51	53	50	52
57 Carinya Avenue	St Marys	Residential	47	42	42	41	52	47	51	48	52	49	52	52	54	51	53	51	53	43	50	50	53	46	51	47	51	41	50	52	54	51	53
59 Carinya Avenue	St Marys	Residential	47	42	42	41	52	48	52	49	52	49	52	52	54	52	54	51	53	44	50	51	53	46	51	48	52	42	50	52	54	51	53
63 Carinya Avenue	St Marys	Residential	47	42	42	41	52	50	53	51	54	51	54	54	55	54	55	54	55	45	51	53	55	48	52	50	53	44	51	54	55	53	55
69 Carinya Avenue	St Marys	Residential	47	42	42	41	52	51	54	52	55	52	55	55	56	55	56	54	56	46	52	54	56	49	53	51	54	45	52	55	56	54	56
71 Carinya Avenue	St Marys	Residential	47	42	42	41	52	51	55	52	55	52	55	55	57	55	57	55	57	47	53	54	56	50	54	51	55	45	53	55	57	55	57
73 Carinya Avenue	St Marys	Residential	47	42	42	41	52	51	55	52	56	53	56	56	58	55	57	55	57	47	54	54	57	50	55	52	56	46	54	55	57	55	57
75 Carinya Avenue	St Marys	Residential	47	42	42	41	52	51	55	52	55	52	55	56	57	56	57	55	57	47	53	55	57	50	54	55	57	49	54	55	57	57	58
78 Carinya Avenue	St Marys	Commercial	70	70	70	70	0	54	58	55	59	55	59	59	61	59	61	58	60	50	57	58	60	53	58	56	59	50	57	58	60	58	60
31 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
32 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
33 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	35	35	35	35	36	36	30	30	<30	<30	38	38
34 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	35	35	35	35	36	36	30	30	<30	<30	38	38
35 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	35	35	35	35	36	36	30	30	<30	<30	38	38
36 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	35	35	35	35	36	36	30	30	<30	<30	38	38
37 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	35	35	35	35	36	36	30	30	<30	<30	38	38
38 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	36	36	30	30	<30	<30	38	38
39 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	35	35	35	35	36	36	30	30	<30	<30	38	38
40-42 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	36	36	36	36	30	30	<30	<30	39	39
41 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	35	35	35	35	36	36	30	30	<30	<30	38	38

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																							
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
43 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	35	35	35	35	36	36	30	30	<30	<30	38	38
44 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	36	36	36	36	30	30	<30	<30	39	39
45 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	35	35	36	36	36	36	30	30	<30	<30	38	38
46 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	36	36	36	36	30	30	<30	<30	39	39
47 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	35	35	36	36	36	36	30	30	<30	<30	38	38
48 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	36	36	<30	<30	<30	<30	<30	<30	39	39
49 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	<30	35	35	38	36	39	36	39	30	36	<30	35	38	40
50 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	36	36	<30	<30	<30	<30	<30	<30	39	39
51 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	<30	35	35	38	36	39	36	39	30	36	<30	35	38	40
52 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	<30	35	<30	35	36	39	<30	35	<30	35	<30	35	39	40
53 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	<30	35	35	38	37	39	<30	35	<30	35	<30	35	38	40
54 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	<30	35	<30	35	37	39	<30	35	<30	35	<30	35	39	40
55 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	<30	35	35	38	37	39	<30	35	<30	35	<30	35	39	40
56 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	<30	35	<30	35	37	39	38	40	32	37	<30	35	39	40
57 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	<30	35	35	38	37	39	<30	35	<30	35	<30	35	39	40
58 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	<30	35	<30	35	37	39	38	40	32	37	<30	35	39	40
59 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	<30	35	35	38	37	39	<30	35	<30	35	<30	35	38	40
60 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	<30	35	35	38	37	39	38	40	32	37	<30	35	39	40
61 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	<30	35	<30	35	37	39	36	39	30	36	<30	35	38	40
62 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	<30	35	<30	35	<30	35	<30	35	<30	35	35	38	37	39	38	40	32	37	<30	35	39	40
63 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	36	36	36	36	30	30	<30	<30	38	38
64 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	<30	35	35	38	37	39	38	40	32	37	<30	35	39	40
65 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	36	36	<30	<30	<30	<30	<30	<30	37	37
66 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	<30	35	35	38	37	39	<30	35	<30	35	<30	35	39	40
67 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	37	37
68 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	<30	35	35	38	37	39	<30	35	<30	35	<30	35	39	40
69 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	37	37
70A Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	37	37	36	36	30	30	<30	<30	38	38
70 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	37	37	36	36	30	30	<30	<30	38	38
72 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	37	37	36	36	30	30	<30	<30	38	38
74 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	36	36	36	36	30	30	<30	<30	38	38
76 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	36	36	36	36	30	30	<30	<30	37	37

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																					
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
78 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	36	36	36	36	30	30	<30	<30	37	37
80 Catalina Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	36	36	<30	<30	<30	<30	<30	<30	37	37
1 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	39	39	40	40	41	41	42	42	41	41	41	41	34	34	40	40	41	41	41	41	35	35	43	43	44	44
2 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	38	41	39	42	40	42	41	43	40	42	<30	38	33	39	39	42	40	42	41	43	35	40	42	43	42	43
3 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	39	39	40	40	41	41	42	42	41	41	41	41	34	34	40	40	41	41	<30	<30	<30	<30	43	43	44	44
4 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	38	41	39	42	40	42	41	43	40	42	<30	38	33	39	40	42	40	42	41	43	35	40	42	43	<30	38
5 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	39	42	40	42	41	43	42	43	41	43	41	43	34	39	40	42	41	43	<30	38	<30	38	43	44	44	45
6 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	38	41	39	42	40	42	41	43	40	42	<30	38	33	39	40	42	40	42	41	43	35	40	42	43	<30	38
7 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	39	42	40	42	41	43	42	43	41	43	41	43	34	39	40	42	41	43	<30	38	<30	38	43	44	44	45
8 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	38	41	39	42	40	42	41	43	40	42	<30	38	33	39	39	42	40	42	41	43	35	40	42	43	<30	38
9 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	39	42	39	42	41	43	41	43	41	43	41	43	34	39	40	42	40	42	<30	38	<30	38	43	44	44	45
10 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	38	41	39	42	40	42	41	43	40	42	39	42	34	39	39	42	40	42	41	43	35	40	43	44	42	43
11 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	39	42	40	42	41	43	41	43	41	43	41	43	34	39	40	42	40	42	<30	38	<30	38	43	44	44	45
12 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	38	41	39	41	40	42	41	42	40	42	39	41	33	38	39	41	40	42	41	42	35	39	42	43	42	43
13 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	39	42	39	42	40	42	41	43	40	42	41	43	34	39	40	42	40	42	<30	38	<30	38	43	44	44	45
14 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	38	41	39	41	40	42	41	42	40	42	39	41	34	39	39	41	40	42	41	42	35	39	42	43	42	43
15 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	39	42	40	42	41	43	41	43	41	43	41	43	34	39	40	42	40	42	<30	38	<30	38	43	44	44	45
16 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	38	41	39	41	40	42	41	42	40	42	<30	37	34	39	39	41	40	42	41	42	35	39	42	43	<30	37
18 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	38	41	39	41	40	42	<30	37	40	42	39	41	33	38	39	41	40	42	41	42	35	39	42	43	<30	37
19 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	39	42	40	42	41	43	41	43	41	43	41	43	34	39	40	42	41	43	43	44	37	41	43	44	44	45
20 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	38	41	39	41	40	42	<30	37	40	42	39	41	33	38	39	41	40	42	41	42	35	39	42	43	<30	37
21 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	38	41	39	42	40	42	41	43	40	42	39	42	34	39	39	42	40	42	<30	38	<30	38	43	44	44	45
22 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	38	41	39	41	40	42	<30	37	39	41	39	41	33	38	39	41	40	42	41	42	35	39	42	43	<30	37
23 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	39	43	40	43	41	44	42	44	41	44	41	44	34	41	40	43	41	44	43	45	37	42	43	45	45	46
24 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	38	41	38	41	<30	37	39	41	39	41	39	41	33	38	<30	37	39	41	41	42	35	39	42	43	<30	37
25 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	37	41	38	41	<30	38	39	42	39	42	39	42	33	39	<30	38	39	42	41	43	35	40	42	43	<30	38
26 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	37	40	38	41	<30	37	39	41	38	41	39	41	33	38	<30	37	39	41	41	42	35	39	42	43	42	43
27 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	37	40	38	41	<30	37	39	41	38	41	39	41	33	38	<30	37	39	41	41	42	35	39	42	43	42	43
28 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	37	40	38	41	38	41	39	41	38	41	38	41	32	38	<30	37	39	41	41	42	35	39	41	42	42	43
29 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	36	40	37	40	38	41	39	41	38	41	38	41	32	38	<30	37	39	41	41	42	35	39	41	42	42	43
30 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	36	40	37	40	38	41	39	41	38	41	38	41	32	38	<30	37	39	41	41	42	35	39	41	42	42	43
31 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	36	40	37	40	38	41	<30	37	<30	37	38	41	32	38	<30	37	39	41	40	42	34	39	41	42	42	43

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																					
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
32 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	36	40	37	40	38	41	39	41	38	41	38	41	31	38	<30	37	39	41	41	42	35	39	41	42	42	43
33 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	36	40	<30	37	38	41	<30	37	<30	37	<30	37	31	38	35	39	<30	37	40	42	34	39	<30	37	42	43
34 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	36	40	<30	37	38	41	<30	37	<30	37	<30	37	31	38	<30	37	39	41	41	42	35	39	<30	37	42	43
35 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	35	40	<30	38	37	41	<30	38	<30	38	<30	38	30	39	35	40	37	41	40	42	34	39	39	42	42	43
36B Cedar Crescent	North St Marys	Residential	48	43	43	43	53	35	39	<30	37	37	40	<30	37	<30	37	<30	37	30	38	35	39	<30	37	40	42	34	39	39	41	42	43
38 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	35	39	<30	37	37	40	<30	37	<30	37	<30	37	30	38	35	39	37	40	40	42	34	39	39	41	41	42
40 Cedar Crescent	North St Marys	Residential	48	43	43	43	53	35	39	<30	37	37	40	<30	37	<30	37	<30	37	30	38	35	39	37	40	40	42	34	39	39	41	41	42
1 Champness Crescent	St Marys	Residential	47	42	42	41	52	45	50	46	50	47	51	48	51	47	51	47	51	41	49	46	50	44	49	47	51	41	49	49	52	50	52
2 Champness Crescent	St Marys	Residential	47	42	42	41	52	46	50	47	51	48	51	48	51	48	51	48	51	42	49	47	51	46	50	48	51	42	49	50	52	51	53
3 Champness Crescent	St Marys	Residential	47	42	42	41	52	46	51	47	51	47	51	48	52	48	52	47	51	41	50	47	51	45	50	48	52	42	50	50	53	51	53
4 Champness Crescent	St Marys	Residential	47	42	42	41	52	46	51	47	51	48	52	49	52	48	52	48	52	42	50	47	51	46	51	48	52	42	50	51	53	51	53
5 Champness Crescent	St Marys	Residential	47	42	42	41	52	46	51	47	52	47	52	48	52	48	52	47	52	41	51	47	52	46	51	48	52	42	51	50	53	50	53
6 Champness Crescent	St Marys	Residential	47	42	42	41	52	47	51	48	51	48	51	49	52	49	52	49	52	42	49	48	51	47	51	49	52	43	49	51	53	52	53
7 Champness Crescent	St Marys	Residential	47	42	42	41	52	46	51	46	51	47	52	48	52	48	52	47	52	41	51	47	52	46	51	48	52	42	51	50	53	50	53
8 Champness Crescent	St Marys	Residential	47	42	42	41	52	46	50	47	50	48	51	49	51	49	51	48	51	42	48	48	51	47	50	49	51	43	48	51	52	51	52
9 Champness Crescent	St Marys	Residential	47	42	42	41	52	45	50	46	51	47	51	48	52	47	51	47	51	41	50	46	51	45	50	48	52	42	50	49	52	50	53
10 Champness Crescent	St Marys	Residential	47	42	42	41	52	46	50	47	50	48	51	49	51	48	51	48	51	42	48	47	50	46	50	49	51	43	48	50	52	51	52
11 Champness Crescent	St Marys	Residential	47	42	42	41	52	44	49	45	50	46	50	47	51	46	50	46	50	40	49	45	50	44	49	47	51	41	49	49	52	49	52
12 Champness Crescent	St Marys	Residential	47	42	42	41	52	46	50	46	50	47	50	48	51	47	50	47	50	41	48	47	50	46	50	48	51	42	48	50	52	50	52
13 Champness Crescent	St Marys	Residential	47	42	42	41	52	44	49	45	49	46	50	46	50	46	50	46	50	40	48	45	49	44	49	47	50	41	48	48	51	49	51
14 Champness Crescent	St Marys	Residential	47	42	42	41	52	45	48	46	49	46	49	47	49	47	49	47	49	40	46	46	49	45	48	47	49	41	46	49	50	50	51
16 Champness Crescent	St Marys	Residential	47	42	42	41	52	44	47	45	48	45	48	46	48	45	48	45	48	39	45	44	47	44	47	46	48	40	45	48	49	48	49
17 Champness Crescent	St Marys	Residential	47	42	42	41	52	43	48	44	48	45	49	46	49	45	49	45	49	39	47	44	48	<30	46	46	49	40	47	47	50	48	50
18-20 Champness Crescent	St Marys	Residential	47	42	42	41	52	44	48	44	48	45	48	46	49	45	48	45	48	39	46	44	48	44	48	46	49	40	46	48	50	48	50
19 Champness Crescent	St Marys	Residential	47	42	42	41	52	43	47	43	47	44	47	45	48	44	47	44	47	38	45	44	47	41	46	45	48	39	45	47	49	47	49
21 Champness Crescent	St Marys	Residential	47	42	42	41	52	43	48	44	48	44	48	45	49	45	49	44	48	38	47	44	48	41	47	45	49	39	47	47	50	48	50
22 Champness Crescent	St Marys	Residential	47	42	42	41	52	43	48	44	49	45	49	45	49	45	49	45	49	39	48	44	49	43	48	46	50	40	48	47	50	48	51
24 Champness Crescent	St Marys	Residential	47	42	42	41	52	43	48	44	48	44	48	45	49	45	49	44	48	38	47	44	48	43	48	46	49	40	47	47	50	48	50
25 Champness Crescent	St Marys	Residential	47	42	42	41	52	43	48	44	49	44	49	46	50	45	49	45	49	39	48	45	49	<30	47	45	49	39	48	47	50	48	51
26 Champness Crescent	St Marys	Residential	47	42	42	41	52	42	47	43	47	44	48	44	48	44	48	44	48	38	46	43	47	41	46	45	48	39	46	46	49	47	49
27 Champness Crescent	St Marys	Residential	47	42	42	41	52	44	49	44	49	45	49	47	50	46	50	46	50	39	48	45	49	<30	47	46	50	40	48	48	51	48	51
28 Champness Crescent	St Marys	Residential	47	42	42	41	52	42	46	43	47	43	47	44	47	44	47	43	47	38	45	43	47	41	46	45	48	39	45	46	48	47	49

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																					
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
30 Champness Crescent	St Marys	Residential	47	42	42	41	52	41	45	42	45	42	45	43	46	43	46	42	45	37	43	42	45	40	44	43	46	37	43	45	47	46	47
32 Champness Crescent	St Marys	Residential	47	42	42	41	52	41	45	42	45	43	46	43	46	43	46	42	45	37	43	42	45	40	44	44	46	38	43	45	47	46	47
34 Champness Crescent	St Marys	Residential	47	42	42	41	52	41	45	42	45	42	45	43	46	42	45	42	45	36	43	41	45	39	44	43	46	37	43	45	47	46	47
36 Champness Crescent	St Marys	Residential	47	42	42	41	52	41	46	42	47	43	47	43	47	43	47	42	47	37	46	42	47	40	46	44	48	38	46	45	48	46	49
38 Champness Crescent	St Marys	Residential	47	42	42	41	52	42	47	42	47	43	48	43	48	43	48	42	47	37	47	42	47	40	47	44	48	38	47	46	49	46	49
40 Champness Crescent	St Marys	Residential	47	42	42	41	52	42	47	43	47	43	47	45	48	44	48	44	48	38	46	43	47	41	46	44	48	38	46	46	49	47	49
42 Champness Crescent	St Marys	Residential	47	42	42	41	52	43	47	43	47	44	47	46	48	46	48	45	48	38	45	45	48	41	46	45	48	39	45	47	49	47	49
44 Champness Crescent	St Marys	Residential	47	42	42	41	52	43	46	43	46	44	46	46	47	46	47	45	47	38	43	45	47	41	45	45	47	39	44	47	48	47	48
1 Chapel Street	St Marys	Residential	47	42	42	41	52	38	41	39	42	<30	38	39	42	39	42	38	41	34	39	<30	38	36	40	40	42	34	39	42	43	42	43
2 Chapel Street	St Marys	Residential	47	42	42	41	52	38	41	38	41	<30	37	39	41	38	41	38	41	33	38	<30	37	36	40	40	42	34	39	42	43	42	43
3 Chapel Street	St Marys	Residential	47	42	42	41	52	38	41	39	42	<30	38	39	42	39	42	38	41	34	39	<30	38	36	40	40	42	34	39	42	43	42	43
4 Chapel Street	St Marys	Residential	47	42	42	41	52	38	43	39	43	<30	41	39	43	39	43	38	43	34	42	<30	41	36	42	40	44	34	42	42	45	42	45
5 Chapel Street	St Marys	Residential	47	42	42	41	52	38	41	39	41	<30	37	39	41	39	41	38	41	33	38	<30	37	36	40	40	42	34	39	42	43	42	43
6 Chapel Street	St Marys	Residential	47	42	42	41	52	38	43	39	44	40	44	39	44	39	44	39	44	34	43	<30	42	36	43	41	45	35	43	42	45	<30	42
7 Chapel Street	St Marys	Residential	47	42	42	41	52	39	42	39	42	40	42	41	43	40	42	39	42	34	39	39	42	37	41	40	42	34	39	43	44	42	43
8 Chapel Street	St Marys	Residential	47	42	42	41	52	39	44	39	44	40	44	39	44	39	44	39	44	34	43	<30	42	36	43	40	44	34	43	43	46	<30	42
9 Chapel Street	St Marys	Residential	47	42	42	41	52	40	44	40	44	41	45	42	45	42	45	42	45	35	43	41	45	37	43	41	45	35	43	44	46	44	46
10-16 Chapel Street	St Marys	Residential	47	42	42	41	52	39	43	40	44	41	44	41	44	41	44	39	43	35	42	40	44	37	42	41	44	35	42	43	45	<30	41
11 Chapel Street	St Marys	Residential	47	42	42	41	52	41	45	42	45	43	46	44	46	44	46	43	46	37	43	43	46	39	44	43	46	37	43	45	47	46	47
12 Chapel Street	St Marys	Residential	47	42	42	41	52	40	43	41	44	41	44	42	44	42	44	41	44	35	41	41	44	37	42	41	44	35	41	44	45	44	45
14 Chapel Street	St Marys	Residential	47	42	42	41	52	40	44	41	45	42	45	43	46	43	46	42	45	36	43	42	45	<30	42	41	45	35	43	44	46	45	47
16 Chapel Street	St Marys	Residential	47	42	42	41	52	40	44	41	45	42	45	43	46	43	46	42	45	36	43	42	45	<30	42	<30	42	<30	42	44	46	45	47
18 Chapel Street	St Marys	Residential	47	42	42	41	52	41	44	42	45	42	45	44	46	44	46	43	45	37	42	43	45	39	43	43	45	37	42	45	46	45	46
19-21 Chapel Street	St Marys	Residential	47	42	42	41	52	42	45	42	45	43	46	45	47	44	46	44	46	37	43	44	46	40	44	43	46	37	43	46	47	46	47
20 Chapel Street	St Marys	Residential	47	42	42	41	52	41	44	42	45	42	45	44	46	44	46	43	45	37	42	43	45	40	44	43	45	37	42	45	46	45	46
22 Chapel Street	St Marys	Residential	47	42	42	41	52	41	45	42	45	43	46	44	46	44	46	43	46	37	43	43	46	41	45	44	46	38	43	45	47	46	47
24 Chapel Street	St Marys	Residential	47	42	42	41	52	41	44	42	45	43	45	44	46	44	46	44	46	36	42	43	45	41	44	44	46	38	43	45	46	46	47
26 Chapel Street	St Marys	Residential	47	42	42	41	52	41	44	42	45	43	45	45	46	44	46	44	46	36	42	43	45	41	44	44	46	38	43	45	46	46	47
28 Chapel Street	St Marys	Residential	47	42	42	41	52	42	45	43	46	44	46	46	47	46	47	46	47	37	43	45	47	43	46	45	47	39	44	46	47	47	48
30 Chapel Street	St Marys	Residential	47	42	42	41	52	41	45	42	45	43	46	45	47	45	47	44	46	37	43	44	46	43	46	44	46	38	43	46	47	46	47
32 Chapel Street	St Marys	Residential	47	42	42	41	52	41	45	42	45	43	46	45	47	45	47	44	46	37	43	44	46	43	46	44	46	38	43	46	47	46	47
36 Chapel Street	St Marys	Residential	47	42	42	41	52	41	44	42	45	43	45	45	46	45	46	44	46	37	42	44	46	<30	41	44	46	38	43	45	46	46	47
38-40 Chapel Street	St Marys	Residential	47	42	42	41	52	41	44	42	45	43	45	45	46	45	46	44	46	36	42	44	46	<30	41	44	46	38	43	45	46	46	47
42 Chapel Street	St Marys	Residential	47	42	42	41	52	41	44	42	45	43	45	45	46	45	46	45	46	37	42	44	46	<30	41	44	46	38	43	45	46	46	47
44 Chapel Street	St Marys	Commercial	70	70	70	70	0	40	43	41	44	42	44	45	46	44	45	44	45	36	41	43	45	41	44	43	45	37	42	45	46	45	46
47 Chapel Street	St Marys	Commercial	70	70	70	70	0	42	45	42	45	43	46	46	47	45	47	45	47	37	43	44	46	43	46	44	46	38	43	46	47	46	47
50-52 Chapel Street	St Marys	Commercial	70	70	70	70	0	39	42	40	42	41	43	42	43	41	43	41	43	35	40	41	43	39	42	41	43	35	40	44	45	42	43
1 Charles Hackett Drive	St Marys	Active Recreation	65	65	65	65	0	38	41	39	42	38	41	41	43	40	42	39	42	33	39	39	42	36	40	38	41	32	39	42	43	41	43

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																					
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
10 Charles Hackett Drive	St Marys	Commercial	70	70	70	70	0	36	39	37	39	38	40	39	40	39	40	38	40	32	37	35	38	36	39	36	39	30	36	41	42	40	41
22 Charles Hackett Drive	St Marys	Public Building	60	60	60	60	0	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30
1 Chesham Street	St Marys	Residential	47	42	42	41	52	48	53	49	53	50	54	50	54	50	54	49	53	44	52	49	53	48	53	49	53	43	52	52	55	52	55
2 Chesham Street	St Marys	Residential	47	42	42	41	52	48	53	49	53	50	54	50	54	50	54	50	54	44	52	49	53	49	53	50	54	44	52	52	55	53	55
3 Chesham Street	St Marys	Residential	47	42	42	41	52	49	54	50	54	51	55	52	55	51	55	51	55	44	53	50	54	50	54	51	55	45	53	53	56	53	56
4 Chesham Street	St Marys	Residential	47	42	42	41	52	49	54	50	55	51	55	52	56	51	55	51	55	44	54	50	55	50	55	51	55	45	54	53	56	53	56
5 Chesham Street	St Marys	Residential	47	42	42	41	52	49	54	50	55	51	55	52	56	51	55	51	55	45	54	50	55	50	55	51	55	45	54	53	56	53	56
6 Chesham Street	St Marys	Residential	47	42	42	41	52	49	54	50	54	51	55	51	55	51	55	51	55	44	53	50	54	49	54	50	54	44	53	53	56	53	56
7 Chesham Street	St Marys	Residential	47	42	42	41	52	49	55	50	55	51	56	52	56	51	56	51	56	44	54	51	56	50	55	51	56	45	55	53	57	53	57
8 Chesham Street	St Marys	Residential	47	42	42	41	52	48	56	49	56	51	56	53	57	52	57	52	57	44	55	51	56	52	57	52	57	46	56	53	57	54	58
9 Chesham Street	St Marys	Residential	47	42	42	41	52	48	54	49	54	50	55	52	56	52	56	51	55	44	54	51	55	50	55	50	55	44	54	53	56	53	56
10A Chesham Street	St Marys	Residential	47	42	42	41	52	47	54	48	54	49	54	51	55	50	55	50	55	43	53	49	54	49	54	49	54	43	53	52	56	52	56
10 Chesham Street	St Marys	Residential	47	42	42	41	52	47	52	48	52	48	52	49	53	49	53	49	53	42	51	48	52	47	52	48	52	42	51	51	54	51	54
2A Collins Street	St Marys	Residential	47	42	42	41	52	36	39	37	39	38	40	<30	35	39	40	39	40	31	36	39	40	37	39	<30	35	<30	35	<30	35	41	42
2 Collins Street	St Marys	Residential	47	42	42	41	52	35	35	<30	<30	37	37	39	39	39	39	38	38	31	31	<30	<30	36	36	38	38	32	32	39	39	40	40
4 Collins Street	St Marys	Residential	47	42	42	41	52	35	35	<30	<30	35	35	39	39	38	38	38	38	30	30	<30	<30	<30	<30	36	36	30	30	39	39	39	39
10 Collins Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
3 Coorlong Place	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
4 Coorlong Place	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
5 Coorlong Place	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	36	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
8 Coorlong Place	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	<30	<30	36	36	30	30	<30	<30	37	37
9 Coorlong Place	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	<30	<30	36	36	30	30	<30	<30	37	37
10 Coorlong Place	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	<30	<30	36	36	30	30	<30	<30	37	37
11 Coorlong Place	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	36	<30	<30	<30	<30	<30	<30	<30	<30	37	38
12 Coorlong Place	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	36	<30	<30	<30	<30	<30	<30	<30	<30	37	38
13 Coorlong Place	St Marys	Residential	47	42	42	41	52	<30	<30	30	33	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
15 Coorlong Place	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
18 Coorlong Place	St Marys	Residential	47	42	42	41	52	<30	<30	30	33	31	33	<30	<30	<30	<30	33	34	<30	<30	<30	<30	<30	<30	33	34	<30	<30	<30	<30	<30	<30
19 Coorlong Place	St Marys	Residential	47	42	42	41	52	<30	<30	30	33	31	33	<30	<30	<30	<30	33	34	<30	<30	<30	<30	<30	<30	33	34	<30	<30	<30	<30	<30	<30
20 Coorlong Place	St Marys	Residential	47	42	42	41	52	<30	<30	30	33	31	33	<30	<30	<30	<30	33	34	<30	<30	<30	<30	<30	<30	33	34	<30	<30	<30	<30	<30	<30
21 Coorlong Place	St Marys	Residential	47	42	42	41	52	<30	<30	30	33	31	33	<30	<30	<30	<30	33	34	<30	<30	<30	<30	<30	<30	33	34	<30	<30	<30	<30	<30	<30
6 Crana Street	St Marys	Commercial	70	70	70	70	0	38	41	39	42	38	41	39	42	40	42	39	42	33	39	39	42	36	40	38	41	32	39	42	43	42	43
31 Cutler Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	31
33 Cutler Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	32
35 Cutler Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	32
44 Cutler Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	32
46 Cutler Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32	32
48 Cutler Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32	32
50 Cutler Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32	32
2 Debrincat Avenue	North St Marys	Residential	48	43	43	43	53	39	43	40	44	41	44	42	45	42	45	42	45	35	42	41	44	41	44	<30	41	<30	41	44	46	45	46

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																							
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
4 Debrincat Avenue	North St Marys	Residential	48	43	43	43	53	39	43	40	43	41	44	42	44	41	44	41	44	34	41	41	44	41	44	<30	40	<30	40	43	45	44	45
6 Debrincat Avenue	North St Marys	Residential	48	43	43	43	53	39	43	40	43	41	44	42	44	41	44	41	44	34	41	40	43	41	44	<30	40	<30	40	43	45	44	45
8 Debrincat Avenue	North St Marys	Residential	48	43	43	43	53	38	42	39	43	40	43	42	44	41	44	41	44	34	41	40	43	41	44	41	44	35	41	43	45	44	45
10 Debrincat Avenue	North St Marys	Residential	48	43	43	43	53	38	41	39	42	40	42	41	43	40	42	<30	38	33	39	39	42	40	42	41	43	35	40	42	43	42	43
14 Debrincat Avenue	North St Marys	Residential	48	43	43	43	53	37	40	38	41	38	41	39	41	39	41	39	41	32	38	<30	37	<30	37	40	42	34	39	41	42	42	43
15 Debrincat Avenue	North St Marys	Residential	48	43	43	43	53	36	39	37	39	38	40	<30	35	38	40	38	40	31	36	<30	35	37	39	38	40	32	37	<30	35	41	42
16 Debrincat Avenue	North St Marys	Residential	48	43	43	43	53	36	40	37	40	38	41	39	41	38	41	38	41	32	38	<30	37	<30	37	<30	37	<30	37	41	42	41	42
17 Debrincat Avenue	North St Marys	Residential	48	43	43	43	53	35	38	<30	35	37	39	<30	35	<30	35	<30	35	31	36	<30	35	37	39	38	40	32	37	39	40	40	41
18 Debrincat Avenue	North St Marys	Residential	48	43	43	43	53	36	39	37	39	38	40	<30	35	38	40	38	40	31	36	<30	35	37	39	38	40	32	37	<30	35	41	42
19 Debrincat Avenue	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	37	39	<30	35	<30	35	<30	35	30	36	35	38	37	39	38	40	32	37	39	40	40	41
20 Debrincat Avenue	North St Marys	Residential	48	43	43	43	53	35	38	<30	35	37	39	<30	35	<30	35	<30	35	31	36	<30	35	37	39	38	40	32	37	39	40	40	41
21 Debrincat Avenue	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	<30	35	35	38	36	39	<30	35	<30	35	<30	35	39	40
22 Debrincat Avenue	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	30	30	35	35	37	37	38	38	32	32	39	39	40	40
23 Debrincat Avenue	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	35	35	36	36	36	36	30	30	<30	<30	38	38
24 Debrincat Avenue	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	35	35	36	36	36	36	30	30	<30	<30	38	38
25 Debrincat Avenue	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	35	35	35	35	<30	<30	<30	<30	<30	<30	37	37
28 Edmondson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
30 Edmondson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31
32 Edmondson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	31	31
33 Edmondson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31
34 Edmondson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	32	32
35 Edmondson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31
36 Edmondson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	32	32
37 Edmondson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	31	31
39 Edmondson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	31	31
41 Edmondson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	32	32
43 Edmondson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	32	32
45 Edmondson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32	32	32
47 Edmondson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32	32	32
49 Edmondson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	30	30	31	31	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32	33	33
51 Edmondson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	30	30	31	31	31	31	30	30	<30	<30	30	30	<30	<30	<30	<30	<30	<30	33	33	33	33
1 Elm Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	<30	35	<30	35	<30	35	<30	35	<30	35	<30	35	<30	35	38	40	32	37	<30	35	40	41

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																					
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
2 Elm Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	<30	35	35	38	37	39	38	40	32	37	<30	35	39	40
3 Elm Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	<30	35	<30	35	<30	35	<30	35	<30	35	35	38	37	39	<30	35	<30	35	<30	35	39	40
4 Elm Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	<30	35	35	38	37	39	<30	35	<30	35	<30	35	39	40
5 Elm Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	<30	35	35	38	37	39	<30	35	<30	35	<30	35	39	40
6 Elm Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	<30	35	35	38	37	39	<30	35	<30	35	<30	35	39	40
7 Elm Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	37	37	36	36	30	30	<30	<30	38	38
8 Elm Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	<30	35	<30	35	37	39	<30	35	<30	35	<30	35	38	40
9 Elm Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	<30	35	35	38	37	39	38	40	32	37	<30	35	39	40
10 Elm Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	<30	<30	38	38	32	32	39	39	40	40
11 Elm Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	39	39	38	38	32	32	39	39	40	40
12 Elm Street	North St Marys	Residential	48	43	43	43	53	<30	37	<30	37	37	40	<30	37	<30	37	38	41	<30	37	<30	37	39	41	38	41	32	38	39	41	40	42
13 Elm Street	North St Marys	Residential	48	43	43	43	53	<30	37	<30	37	37	40	<30	37	<30	37	<30	37	<30	37	<30	37	<30	37	38	41	32	38	39	41	40	42
14 Elm Street	North St Marys	Residential	48	43	43	43	53	<30	38	<30	38	38	41	39	42	38	41	38	41	30	39	<30	38	40	42	<30	38	<30	38	39	42	41	43
10 Forrester Road	St Marys	Industrial	75	75	75	75	0	51	61	51	61	54	62	56	62	55	62	56	62	45	61	55	62	57	62	59	63	53	62	56	62	60	64
40 Forrester Road	St Marys	Industrial	75	75	75	75	0	40	46	40	46	41	46	43	47	43	47	42	47	35	45	42	47	39	46	45	48	39	46	44	48	46	49
59 Forrester Road	North St Marys	Industrial	75	75	75	75	0	48	51	49	51	49	51	52	53	51	52	51	52	43	48	51	52	46	50	47	50	41	48	52	53	51	52
61 Forrester Road	North St Marys	Industrial	75	75	75	75	0	45	48	46	49	47	49	47	49	47	49	46	49	41	46	46	49	45	48	48	50	42	47	49	50	50	51
65 Forrester Road	North St Marys	Industrial	75	75	75	75	0	45	52	46	52	47	52	48	53	47	52	47	52	40	51	46	52	48	53	50	54	44	52	50	54	51	54
69 Forrester Road	North St Marys	Industrial	75	75	75	75	0	42	46	43	47	44	47	44	47	43	47	44	47	37	45	43	47	45	48	45	48	39	45	46	48	47	49
73 Forrester Road	North St Marys	Industrial	75	75	75	75	0	45	50	46	51	47	51	49	52	48	52	48	52	40	50	47	51	50	53	50	53	44	50	50	53	51	53
75-77 Forrester Road	North St Marys	Industrial	75	75	75	75	0	47	51	48	52	49	52	50	53	50	53	50	53	42	50	49	52	49	52	50	53	44	50	51	53	52	54
81 Forrester Road	North St Marys	Hotel	70	70	70	60	0	37	42	39	43	40	44	42	45	41	44	41	44	33	42	40	44	41	44	41	44	35	42	42	45	44	46
90-96 Forrester Road	St Marys	Industrial	75	75	75	75	0	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	36	36	36	36	30	30	<30	<30	39	39
91 Forrester Road	North St Marys	Industrial	75	75	75	75	0	38	43	39	44	41	45	43	46	42	45	42	45	34	43	41	45	43	46	43	46	37	43	43	46	44	46
101-103 Forrester Road	North St Marys	Industrial	75	75	75	75	0	37	41	38	41	38	41	39	42	38	41	39	42	32	39	35	40	41	43	41	43	35	40	42	43	42	43
102-114 Forrester Road	St Marys	Industrial	75	75	75	75	0	<30	<30	<30	<30	34	34	<30	<30	31	31	33	33	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	37	37
105 Forrester Road	North St Marys	Industrial	75	75	75	75	0	35	40	30	39	38	41	39	42	31	39	38	41	31	39	35	40	39	42	40	42	34	39	39	42	41	43
107 Forrester Road	North St Marys	Industrial	75	75	75	75	0	<30	35	30	36	37	39	31	36	31	36	33	37	30	36	35	38	37	39	38	40	32	37	39	40	40	41
111 Forrester Road	North St Marys	Industrial	75	75	75	75	0	<30	37	<30	37	37	40	<30	37	<30	37	33	38	30	38	35	39	39	41	38	41	32	38	39	41	41	42
116-118 Forrester Road	St Marys	Industrial	75	75	75	75	0	<30	<30	<30	<30	34	34	<30	<30	31	31	33	33	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	37	37
117 Forrester Road	North St Marys	Residential	48	43	43	43	53	<30	37	<30	37	35	39	<30	37	<30	37	<30	37	<30	37	35	39	37	40	38	41	32	38	<30	37	39	41
119 Forrester Road	North St Marys	Residential	48	43	43	43	53	<30	37	<30	37	<30	37	<30	37	<30	37	<30	37	<30	37	35	39	37	40	38	41	32	38	<30	37	39	41

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																							
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
120-128 Forrester Road	St Marys	Industrial	75	75	75	75	0	<30	<30	<30	<30	<30	<30	<30	<30	31	31	<30	<30	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	37	37
121 Forrester Road	North St Marys	Residential	48	43	43	43	53	<30	37	<30	37	35	39	<30	37	<30	37	<30	37	<30	37	35	39	37	40	<30	37	<30	37	<30	37	39	41
123 Forrester Road	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	<30	35	<30	35	36	39	36	39	30	36	<30	35	39	40
125 Forrester Road	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	<30	35	<30	35	37	39	36	39	30	36	<30	35	38	40
127 Forrester Road	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	<30	35	<30	35	36	39	36	39	30	36	<30	35	38	40
129 Forrester Road	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	<30	35	35	38	37	39	36	39	30	36	<30	35	38	40
130-142 Forrester Road	St Marys	Industrial	75	75	75	75	0	<30	<30	<30	<30	<30	<30	31	31	31	31	31	31	<30	<30	30	30	<30	<30	33	33	<30	<30	<30	<30	<30	<30
131 Forrester Road	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	<30	35	<30	35	36	39	36	39	30	36	<30	35	38	40
133 Forrester Road	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	<30	35	<30	35	36	39	36	39	30	36	<30	35	38	40
135 Forrester Road	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	34	38	<30	35	<30	35	<30	35	<30	35	<30	35	36	39	36	39	30	36	<30	35	38	40
137 Forrester Road	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	35	35	36	36	36	36	30	30	<30	<30	38	38
139 Forrester Road	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	34	38	<30	35	<30	35	<30	35	<30	35	<30	35	36	39	36	39	30	36	<30	35	37	39
8 Forthorn Place	North St Marys	Industrial	75	75	75	75	0	41	46	42	46	43	47	44	47	43	47	43	47	37	45	42	46	44	47	46	48	40	45	46	48	47	49
10 Forthorn Place	North St Marys	Industrial	75	75	75	75	0	43	47	43	47	44	48	45	48	44	48	44	48	38	46	43	47	44	48	46	49	40	46	47	49	48	50
12 Forthorn Place	North St Marys	Industrial	75	75	75	75	0	43	48	44	48	45	49	45	49	44	48	45	49	39	47	44	48	45	49	47	50	41	47	48	50	49	51
14 Forthorn Place	North St Marys	Industrial	75	75	75	75	0	45	49	46	50	47	50	48	51	48	51	48	51	41	48	47	50	47	50	49	51	43	48	50	52	51	52
16 Forthorn Place	North St Marys	Industrial	75	75	75	75	0	47	51	47	51	48	51	50	52	49	52	49	52	42	49	49	52	48	51	50	52	44	49	51	53	52	53
18 Forthorn Place	North St Marys	Industrial	75	75	75	75	0	47	51	48	52	49	52	50	53	50	53	50	53	42	50	49	52	49	52	50	53	44	50	51	53	52	54
20 Forthorn Place	North St Marys	Industrial	75	75	75	75	0	46	50	47	51	48	51	50	52	49	52	49	52	42	49	48	51	48	51	50	52	44	49	51	53	52	53
22 Forthorn Place	North St Marys	Industrial	75	75	75	75	0	44	48	45	49	46	49	47	50	46	49	46	49	40	47	45	49	46	49	47	50	41	47	49	51	49	51
27 Forthorn Place	North St Marys	Industrial	75	75	75	75	0	42	45	43	46	44	46	45	47	44	46	44	46	38	43	43	46	44	46	45	47	39	44	47	48	47	48
32 Forthorn Place	North St Marys	Industrial	75	75	75	75	0	43	47	44	47	45	48	46	48	45	48	45	48	39	45	44	47	45	48	46	48	40	45	47	49	48	49
4 Gidley Street	St Marys	Residential	47	42	42	41	52	53	59	54	59	55	60	59	62	59	62	59	62	49	59	58	61	54	59	56	60	50	59	58	61	58	61
12 Gidley Street	St Marys	Residential	47	42	42	41	52	46	50	47	51	48	51	51	53	51	53	50	52	42	49	50	52	47	51	49	52	43	49	51	53	51	53
14 Gidley Street	St Marys	Residential	47	42	42	41	52	46	50	47	50	48	51	51	52	50	52	50	52	41	48	49	51	47	50	49	51	43	48	50	52	51	52
16 Gidley Street	St Marys	Residential	47	42	42	41	52	45	49	46	49	47	50	50	51	50	51	49	51	41	47	49	51	46	49	48	50	42	47	50	51	50	51
18 Gidley Street	St Marys	Residential	47	42	42	41	52	44	48	45	49	46	49	49	51	49	51	48	50	40	47	48	50	46	49	47	50	41	47	49	51	49	51
20 Gidley Street	St Marys	Residential	47	42	42	41	52	44	48	45	48	46	49	49	50	48	50	48	50	39	46	47	49	45	48	47	49	41	46	48	50	49	50
26 Gidley Street	St Marys	Residential	47	42	42	41	52	42	45	42	45	43	46	46	47	46	47	46	47	37	43	45	47	43	46	44	46	38	43	46	47	47	48
28 Gidley Street	St Marys	Residential	47	42	42	41	52	41	45	42	45	43	46	46	47	46	47	46	47	37	43	45	47	43	46	45	47	39	44	46	47	47	48
30A Gidley Street	St Marys	Residential	47	42	42	41	52	40	43	41	44	42	44	45	46	44	45	44	45	36	41	43	45	41	44	43	45	37	42	45	46	45	46
30 Gidley Street	St Marys	Residential	47	42	42	41	52	41	44	42	45	43	45	46	47	45	46	45	46	36	42	44	46	41	44	44	46	38	43	45	46	46	47
32 Gidley Street	St Marys	Residential	47	42	42	41	52	40	43	41	44	42	44	44	45	44	45	44	45	35	41	43	45	41	44	43	45	37	42	44	45	45	46
34 Gidley Street	St Marys	Residential	47	42	42	41	52	40	42	40	42	41	43	44	45	43	44	43	44	35	40	43	44	41	43	<30	38	<30	38	44	45	45	46

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																					
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
38 Gidley Street	St Marys	Residential	47	42	42	41	52	39	42	40	42	41	43	43	44	43	44	43	44	34	39	42	43	40	42	<30	38	<30	38	43	44	44	45
39-41 Gidley Street	St Marys	Commercial	70	70	70	70	0	37	39	38	40	38	40	39	40	39	40	39	40	33	37	35	38	37	39	38	40	32	37	41	42	42	43
40 Gidley Street	St Marys	Residential	47	42	42	41	52	39	42	40	42	40	42	43	44	43	44	42	43	34	39	42	43	40	42	41	43	35	40	43	44	44	45
42 Gidley Street	St Marys	Residential	47	42	42	41	52	38	41	39	42	40	42	43	44	42	43	42	43	34	39	41	43	40	42	41	43	35	40	43	44	<30	38
48 Gidley Street	St Marys	Residential	47	42	42	41	52	38	41	38	41	<30	37	42	43	41	42	41	42	33	38	40	42	39	41	40	42	34	39	42	43	42	43
48-48A Gidley Street	St Marys	Residential	47	42	42	41	52	37	40	38	41	<30	37	42	43	41	42	41	42	33	38	40	42	39	41	40	42	34	39	42	43	42	43
50 Gidley Street	St Marys	Residential	47	42	42	41	52	37	37	38	38	<30	<30	41	41	41	41	41	41	33	33	40	40	<30	<30	40	40	34	34	42	42	42	42
2 Glossop Street	North St Marys	Residential	48	43	43	43	53	<30	38	<30	38	<30	38	<30	38	<30	38	<30	38	<30	38	35	40	<30	38	38	41	32	39	39	42	40	42
3-13 Glossop Street	North St Marys	Industrial	75	75	75	75	0	37	42	38	43	40	44	41	44	40	44	39	43	32	42	39	43	41	44	41	44	35	42	42	45	42	45
4 Glossop Street	North St Marys	Residential	48	43	43	43	53	<30	37	<30	37	37	40	<30	37	<30	37	38	41	<30	37	<30	37	<30	37	38	41	32	38	39	41	40	42
6 Glossop Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	37	37	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	38	38	32	32	39	39	40	40
8 Glossop Street	North St Marys	Residential	48	43	43	43	53	<30	37	<30	37	37	40	<30	37	<30	37	38	41	30	38	<30	37	39	41	38	41	32	38	39	41	40	42
8A Glossop Street	North St Marys	Residential	48	43	43	43	53	35	40	<30	38	37	41	39	42	38	41	38	41	30	39	<30	38	39	42	<30	38	<30	38	39	42	41	43
10 Glossop Street	North St Marys	Residential	48	43	43	43	53	35	40	37	41	38	41	39	42	39	42	39	42	31	39	<30	38	40	42	40	42	34	39	<30	38	42	43
12 Glossop Street	North St Marys	Residential	48	43	43	43	53	36	40	37	41	38	41	41	43	40	42	41	43	32	39	40	42	41	43	41	43	35	40	41	43	42	43
14 Glossop Street	North St Marys	Residential	48	43	43	43	53	36	40	37	41	38	41	41	43	40	42	39	42	31	39	39	42	41	43	41	43	35	40	41	43	42	43
15-33 Glossop Street	North St Marys	Industrial	75	75	75	75	0	37	41	38	41	38	41	41	43	41	43	39	42	32	39	40	42	39	42	40	42	34	39	42	43	42	43
16 Glossop Street	North St Marys	Residential	48	43	43	43	53	36	40	37	41	38	41	39	42	39	42	39	42	31	39	<30	38	39	42	40	42	34	39	<30	38	42	43
18A Glossop Street	North St Marys	Residential	48	43	43	43	53	36	40	37	41	38	41	39	42	40	42	39	42	31	39	39	42	39	42	40	42	34	39	<30	38	41	43
20 Glossop Street	North St Marys	Residential	48	43	43	43	53	36	40	37	41	38	41	41	43	40	42	<30	38	32	39	39	42	39	42	40	42	34	39	41	43	42	43
22 Glossop Street	North St Marys	Residential	48	43	43	43	53	36	40	37	41	38	41	<30	38	40	42	39	42	31	39	39	42	39	42	40	42	34	39	41	43	41	43
24 Glossop Street	North St Marys	Residential	48	43	43	43	53	36	40	37	40	38	41	<30	37	40	42	39	41	31	38	39	41	<30	37	<30	37	<30	37	<30	37	41	42
26 Glossop Street	North St Marys	Residential	48	43	43	43	53	36	40	37	40	38	41	<30	37	40	42	39	41	31	38	39	41	<30	37	<30	37	<30	37	41	42	41	42
28 Glossop Street	North St Marys	Residential	48	43	43	43	53	36	40	37	40	38	41	41	42	40	42	<30	37	32	38	39	41	39	41	<30	37	<30	37	41	42	41	42
30 Glossop Street	North St Marys	Residential	48	43	43	43	53	36	40	38	41	38	41	41	43	40	42	<30	38	32	39	40	42	39	42	40	42	34	39	41	43	42	43
32 Glossop Street	North St Marys	Residential	48	43	43	43	53	37	41	38	41	38	41	41	43	40	42	<30	38	32	39	40	42	39	42	40	42	34	39	41	43	42	43
34 Glossop Street	North St Marys	Residential	48	43	43	43	53	37	41	38	41	<30	38	41	43	40	42	<30	38	32	39	40	42	39	42	40	42	34	39	42	43	42	43
36 Glossop Street	North St Marys	Residential	48	43	43	43	53	37	41	38	41	<30	38	41	43	40	42	<30	38	33	39	40	42	39	42	40	42	34	39	42	43	42	43
38 Glossop Street	North St Marys	Residential	48	43	43	43	53	37	41	38	41	<30	38	41	43	41	43	<30	38	33	39	40	42	40	42	40	42	34	39	42	43	42	43
39 Glossop Street	North St Marys	Industrial	75	75	75	75	0	39	43	40	44	41	44	43	45	42	45	42	45	34	42	41	44	41	44	41	44	35	42	43	45	44	46
40 Glossop Street	North St Marys	Residential	48	43	43	43	53	38	41	39	42	40	42	41	43	41	43	41	43	33	39	40	42	40	42	40	42	34	39	42	43	42	43
42 Glossop Street	North St Marys	Residential	48	43	43	43	53	39	43	40	43	41	44	42	44	42	44	42	44	34	41	41	44	41	44	41	44	35	41	43	45	44	45
43 Glossop Street	North St Marys	Industrial	75	75	75	75	0	40	44	41	45	42	45	44	46	43	46	43	46	36	43	42	45	43	46	43	46	37	43	45	47	45	47

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																					
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
44 Glossop Street	North St Marys	Residential	48	43	43	43	53	39	43	40	43	41	44	43	45	42	44	42	44	34	41	41	44	41	44	<30	40	<30	40	43	45	44	45
46 Glossop Street	North St Marys	Residential	48	43	43	43	53	39	43	40	43	41	44	43	45	42	44	42	44	34	41	41	44	41	44	<30	40	<30	40	44	45	44	45
47 Glossop Street	North St Marys	Industrial	75	75	75	75	0	41	45	42	45	43	46	44	46	43	46	43	46	36	43	42	45	43	46	44	46	38	43	45	47	46	47
48 Glossop Street	North St Marys	Residential	48	43	43	43	53	40	44	41	44	42	45	44	46	43	45	43	45	35	42	42	45	41	44	43	45	37	42	44	46	45	46
50 Glossop Street	North St Marys	Residential	48	43	43	43	53	40	44	41	45	43	46	45	47	44	46	44	46	36	43	43	46	43	46	43	46	37	43	45	47	46	47
51-53 Glossop Street	North St Marys	Industrial	75	75	75	75	0	42	45	43	46	44	46	46	47	45	47	45	47	37	43	44	46	44	46	45	47	39	44	46	47	47	48
52 Glossop Street	North St Marys	Residential	48	43	43	43	53	41	45	42	45	43	46	46	47	45	47	45	47	37	43	45	47	44	46	44	46	38	43	46	47	46	47
54 Glossop Street	North St Marys	Residential	48	43	43	43	53	41	45	42	45	43	46	45	47	45	47	44	46	36	43	44	46	44	46	44	46	38	43	45	47	46	47
56 Glossop Street	North St Marys	Residential	48	43	43	43	53	41	45	42	45	43	46	45	47	44	46	44	46	36	43	43	46	43	46	44	46	38	43	45	47	46	47
58 Glossop Street	North St Marys	Residential	48	43	43	43	53	40	44	42	45	43	46	45	47	44	46	44	46	36	43	43	46	43	46	44	46	38	43	45	47	46	47
60 Glossop Street	North St Marys	Residential	48	43	43	43	53	41	45	42	45	43	46	45	47	44	46	44	46	37	43	44	46	43	46	44	46	38	43	46	47	46	47
62 Glossop Street	North St Marys	Residential	48	43	43	43	53	41	45	42	45	43	46	45	47	44	46	44	46	36	43	43	46	43	46	44	46	38	43	45	47	46	47
64 Glossop Street	North St Marys	Residential	48	43	43	43	53	40	44	41	44	42	45	43	45	43	45	43	45	36	42	42	45	41	44	43	45	37	42	45	46	45	46
66 Glossop Street	North St Marys	Residential	48	43	43	43	53	41	45	42	45	43	46	44	46	44	46	44	46	37	43	43	46	43	46	44	46	38	43	45	47	46	47
67 Glossop Street	North St Marys	Industrial	75	75	75	75	0	41	41	42	42	44	44	45	45	44	44	44	44	37	37	43	43	44	44	44	44	38	38	46	46	47	47
68 Glossop Street	North St Marys	Residential	48	43	43	43	53	40	44	41	44	42	45	43	45	43	45	43	45	36	42	42	45	41	44	43	45	37	42	45	46	45	46
72 Glossop Street	North St Marys	Residential	48	43	43	43	53	40	43	41	44	42	44	43	45	42	44	42	44	36	41	42	44	<30	40	43	45	37	42	45	46	45	46
74 Glossop Street	North St Marys	Residential	48	43	43	43	53	40	43	41	44	42	44	43	45	42	44	42	44	36	41	41	44	41	44	43	45	37	42	45	46	45	46
77 Glossop Street	North St Marys	Industrial	75	75	75	75	0	41	44	42	45	43	45	43	45	42	45	42	45	36	42	41	44	41	44	44	46	38	43	45	46	46	47
80A Glossop Street	North St Marys	Industrial	75	75	75	75	0	39	45	39	45	41	46	41	46	40	45	41	46	34	44	39	45	41	46	45	48	39	45	43	47	46	48
81 Glossop Street	North St Marys	Industrial	75	75	75	75	0	42	45	43	46	44	46	44	46	44	46	44	46	37	43	43	46	43	46	45	47	39	44	46	47	47	48
82 Glossop Street	North St Marys	Industrial	75	75	75	75	0	38	47	37	47	38	47	39	47	38	47	39	47	32	46	35	46	39	47	46	49	40	47	41	47	46	49
84 Glossop Street	North St Marys	Industrial	75	75	75	75	0	36	43	<30	42	<30	42	<30	42	<30	42	<30	42	30	42	35	43	<30	42	41	45	35	43	39	44	42	45
86 Glossop Street	North St Marys	Industrial	75	75	75	75	0	36	42	37	42	37	42	<30	41	<30	41	33	42	32	42	35	42	<30	41	40	44	34	42	39	43	41	44
87 Glossop Street	North St Marys	Industrial	75	75	75	75	0	41	46	42	46	43	47	43	47	42	46	43	47	36	45	41	46	43	47	46	48	40	45	45	48	47	49
88 Glossop Street	North St Marys	Industrial	75	75	75	75	0	38	47	38	47	38	47	<30	46	38	47	38	47	33	46	35	46	35	46	41	47	35	46	42	47	42	47
90 Glossop Street	North St Marys	Industrial	75	75	75	75	0	37	41	38	41	38	41	<30	38	<30	38	<30	38	33	39	35	40	<30	38	36	40	30	39	41	43	40	42
91 Glossop Street	North St Marys	Industrial	75	75	75	75	0	41	48	42	48	43	48	44	49	43	48	43	48	36	47	42	48	44	49	48	51	42	48	45	49	49	51
92 Glossop Street	North St Marys	Industrial	75	75	75	75	0	40	44	41	45	41	45	39	44	40	44	39	44	36	43	39	44	<30	42	38	43	32	42	44	46	42	45
94 Glossop Street	North St Marys	Industrial	75	75	75	75	0	47	52	48	53	48	53	49	53	49	53	48	53	43	52	48	53	35	51	38	51	32	51	51	54	49	53
96 Glossop Street	St Marys	Residential	47	42	42	41	52	48	55	49	55	50	55	53	57	53	57	53	57	44	54	52	56	49	55	50	55	44	54	52	56	53	57
97 Glossop Street	North St Marys	Industrial	75	75	75	75	0	44	61	42	61	43	61	43	61	43	61	43	61	37	61	42	61	43	61	53	62	47	61	45	61	53	62

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																							
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
102A Glossop Street	St Marys	Residential	47	42	42	41	52	46	50	47	51	47	51	48	51	48	51	47	51	42	49	47	51	45	50	46	50	40	49	50	52	49	52
104 Glossop Street	St Marys	Residential	47	42	42	41	52	43	48	45	49	45	49	46	49	46	49	46	49	39	47	45	49	45	49	45	49	39	47	48	50	48	50
106 Glossop Street	St Marys	Residential	47	42	42	41	52	43	47	44	47	44	47	45	48	45	48	44	47	39	45	44	47	43	47	44	47	38	45	47	49	47	49
109 Glossop Street	St Marys	Residential	47	42	42	41	52	44	48	45	49	45	49	46	49	45	49	45	49	39	47	45	49	44	48	46	49	40	47	48	50	48	50
110 Glossop Street	St Marys	Residential	47	42	42	41	52	41	45	42	45	43	46	44	46	43	46	43	46	37	43	42	45	41	45	43	46	37	43	46	47	46	47
111-113 Glossop Street	St Marys	Residential	47	42	42	41	52	44	48	45	49	45	49	46	49	45	49	45	49	39	47	45	49	44	48	46	49	40	47	48	50	48	50
112 Glossop Street	St Marys	Residential	47	42	42	41	52	40	43	41	44	42	44	42	44	41	44	41	44	36	41	40	43	41	44	41	44	35	41	44	45	44	45
114 Glossop Street	St Marys	Residential	47	42	42	41	52	41	45	42	45	43	46	43	46	43	46	43	46	37	43	42	45	41	45	43	46	37	43	45	47	46	47
115 Glossop Street	St Marys	Residential	47	42	42	41	52	43	47	44	47	44	47	45	48	44	47	44	47	38	45	44	47	43	47	45	48	39	45	47	49	48	49
116 Glossop Street	St Marys	Residential	47	42	42	41	52	40	44	41	44	41	44	41	44	41	44	41	44	35	42	40	44	40	44	41	44	35	42	44	46	44	46
118 Glossop Street	St Marys	Residential	47	42	42	41	52	40	44	41	44	42	45	42	45	41	44	41	44	35	42	40	44	41	44	41	44	35	42	44	46	44	46
119-121 Glossop Street	St Marys	Residential	47	42	42	41	52	42	45	43	46	44	46	44	46	44	46	44	46	38	43	43	46	41	45	45	47	39	44	47	48	47	48
120 Glossop Street	St Marys	Residential	47	42	42	41	52	40	43	41	44	42	44	42	44	42	44	42	44	36	41	41	44	40	43	<30	40	<30	40	45	46	45	46
123 Glossop Street	St Marys	Residential	47	42	42	41	52	42	45	43	46	43	46	44	46	43	46	43	46	37	43	42	45	41	45	44	46	38	43	46	47	47	48
124 Glossop Street	St Marys	Residential	47	42	42	41	52	38	41	39	42	40	42	<30	38	39	42	39	42	34	39	<30	38	39	42	41	43	35	40	43	44	<30	38
125 Glossop Street	St Marys	Residential	47	42	42	41	52	42	46	42	46	43	47	44	47	43	47	43	47	37	45	42	46	41	46	44	47	38	45	46	48	46	48
126 Glossop Street	St Marys	Residential	47	42	42	41	52	39	42	40	42	41	43	41	43	40	42	<30	38	35	40	39	42	39	42	41	43	35	40	44	45	44	45
127 Glossop Street	St Marys	Residential	47	42	42	41	52	41	41	42	42	43	43	43	43	43	43	42	42	37	37	42	42	41	41	44	44	38	38	45	45	46	46
128 Glossop Street	St Marys	Residential	47	42	42	41	52	39	43	40	43	41	44	41	44	40	43	<30	40	35	41	39	43	39	43	41	44	35	41	44	45	44	45
130 Glossop Street	St Marys	Residential	47	42	42	41	52	39	42	39	42	40	42	39	42	39	42	39	42	34	39	39	42	<30	38	41	43	35	40	43	44	<30	38
132 Glossop Street	St Marys	Residential	47	42	42	41	52	38	41	39	42	40	42	39	42	39	42	39	42	34	39	<30	38	<30	38	41	43	35	40	43	44	42	43
133 Glossop Street	St Marys	Residential	47	42	42	41	52	40	44	41	44	41	44	42	45	41	44	41	44	35	42	40	44	39	43	41	44	35	42	44	46	44	46
134 Glossop Street	St Marys	Residential	47	42	42	41	52	38	41	39	42	40	42	39	42	39	42	39	42	34	39	<30	38	37	41	41	43	35	40	42	43	42	43
136 Glossop Street	St Marys	Residential	47	42	42	41	52	38	41	39	42	<30	38	39	42	38	41	38	41	33	39	<30	38	37	41	40	42	34	39	42	43	42	43
138 Glossop Street	St Marys	Residential	47	42	42	41	52	37	40	38	41	38	41	<30	37	38	41	38	41	33	38	<30	37	36	40	<30	37	<30	37	41	42	42	43
140 Glossop Street	St Marys	Residential	47	42	42	41	52	37	40	37	40	38	41	<30	37	<30	37	<30	37	32	38	<30	37	35	39	38	41	32	38	41	42	41	42
142-144 Glossop Street	St Marys	Residential	47	42	42	41	52	37	40	38	41	38	41	<30	37	<30	37	<30	37	32	38	<30	37	35	39	<30	37	<30	37	41	42	41	42
145 Glossop Street	St Marys	Residential	47	42	42	41	52	38	43	39	43	<30	41	39	43	39	43	39	43	34	42	<30	41	36	42	40	44	34	42	42	45	42	45
146-148 Glossop Street	St Marys	Residential	47	42	42	41	52	35	38	<30	35	<30	35	<30	35	<30	35	<30	35	31	36	35	38	<30	35	<30	35	<30	35	39	40	40	41
146-148 Glossop Street	St Marys	Child Care	50	50	50	50	0	36	39	37	39	37	39	<30	35	<30	35	<30	35	32	37	35	38	<30	35	38	40	32	37	39	40	41	42
147 Glossop Street	St Marys	Residential	47	42	42	41	52	38	43	39	44	38	43	39	44	40	44	39	44	34	43	39	44	36	43	40	44	34	43	42	45	42	45
149 Glossop Street	St Marys	Residential	47	42	42	41	52	38	43	39	43	38	43	39	43	39	43	39	43	34	42	<30	41	36	42	40	44	34	42	42	45	42	45
150 Glossop Street	St Marys	Residential	47	42	42	41	52	36	39	<30	35	37	39	<30	35	<30	35	<30	35	31	36	35	38	<30	35	<30	35	<30	35	39	40	40	41
151-153 Glossop Street	St Marys	Residential	47	42	42	41	52	38	41	38	41	38	41	39	42	39	42	38	41	33	39	<30	38	35	40	<30	38	<30	38	42	43	42	43
152 Glossop Street	St Marys	Residential	47	42	42	41	52	35	38	<30	35	37	39	<30	35	<30	35	<30	35	31	36	35	38	<30	35	<30	35	<30	35	39	40	40	41
154 Glossop Street	St Marys	Residential	47	42	42	41	52	35	40	<30	38	37	41	<30	38	<30	38	<30	38	31	39	35	40	<30	38	<30	38	<30	38	39	42	40	42
155 Glossop Street	St Marys	Residential	47	42	42	41	52	37	41	38	41	38	41	<30	38	38	41	38	41	33	39	<30	38	35	40	38	41	32	39	41	43	41	43
156 Glossop Street	St Marys	Residential	47	42	42	41	52	35	40	<30	38	<30	38	<30	38	<30	38	<30	38	31	39	35	40	<30	38	<30	38	<30	38	39	42	40	42
157 Glossop Street	St Marys	Residential	47	42	42	41	52	37	40	38	41	38	41	39	41	38	41	38	41	33	38	<30	37	<30	37	38	41	32	38	41	42	41	42

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																					
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
158 Glossop Street	St Marys	Residential	47	42	42	41	52	35	40	<30	38	37	41	<30	38	<30	38	<30	38	31	39	35	40	<30	38	36	40	30	39	39	42	39	42
159 Glossop Street	St Marys	Residential	47	42	42	41	52	37	37	38	38	38	38	<30	<30	38	38	38	38	32	32	<30	<30	<30	<30	38	38	32	32	41	41	41	41
160-162 Glossop Street	St Marys	Residential	47	42	42	41	52	35	39	<30	37	<30	37	<30	37	<30	37	<30	37	30	38	<30	37	<30	37	36	40	30	38	39	41	39	41
161 Glossop Street	St Marys	Residential	47	42	42	41	52	37	37	37	37	38	38	<30	<30	38	38	38	38	32	32	<30	<30	<30	<30	38	38	32	32	41	41	41	41
163 Glossop Street	St Marys	Residential	47	42	42	41	52	36	39	37	39	38	40	<30	35	38	40	<30	35	32	37	<30	35	<30	35	38	40	32	37	<30	35	40	41
164 Glossop Street	St Marys	Residential	47	42	42	41	52	36	39	<30	35	37	39	<30	35	<30	35	<30	35	31	36	35	38	<30	35	36	39	30	36	39	40	39	40
166 Glossop Street	St Marys	Residential	47	42	42	41	52	35	38	<30	35	37	39	<30	35	<30	35	<30	35	31	36	35	38	<30	35	36	39	30	36	39	40	39	40
167 Glossop Street	St Marys	Residential	47	42	42	41	52	36	39	37	39	37	39	<30	35	38	40	<30	35	32	37	<30	35	<30	35	<30	35	<30	35	<30	35	40	41
168 Glossop Street	St Marys	Residential	47	42	42	41	52	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	35	35	<30	<30	36	36	30	30	39	39	39	39
169 Glossop Street	St Marys	Residential	47	42	42	41	52	36	39	37	39	37	39	<30	35	38	40	<30	35	32	37	<30	35	<30	35	<30	35	<30	35	39	40	40	41
170 Glossop Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	30	30	35	35	<30	<30	<30	<30	<30	<30	39	39	38	38
171 Glossop Street	St Marys	Residential	47	42	42	41	52	35	35	<30	<30	37	37	<30	<30	38	38	<30	<30	31	31	<30	<30	<30	<30	36	36	30	30	39	39	39	39
172 Glossop Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	35	<30	<30	<30	<30	<30	<30	<30	<30	35	36	<30	<30	33	34	<30	<30	<30	<30	37	38
173 Glossop Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	38	38
174 Glossop Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30
176 Glossop Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	34	<30	<30	<30	<30	<30	<30
178 Glossop Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	31	33	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	34	<30	<30	<30	<30	<30	<30
182 Glossop Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	34	<30	<30	<30	<30	<30	<30
25 Gordon Street	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	31	31	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30
27 Gordon Street	St Marys	Residential	47	42	42	41	52	<30	<30	30	33	31	33	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	34	<30	<30	<30	<30	<30	<30
29 Gordon Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
259 Great Western Highway	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
263 Great Western Highway	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
269 Great Western Highway	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	31	31	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30
273 Great Western Highway	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	31	31	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30
275A Great Western Highway	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	31	31	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30
275 Great Western Highway	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	31	31	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30
281 Great Western Highway	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	37	37
282 Great Western Highway	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
282A Great Western Highway	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
284 Great Western Highway	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
284A Great Western Highway	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
287 Great Western Highway	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	36	36	30	30	<30	<30	38	38
288 Great Western Highway	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	37	37
289 Great Western Highway	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	38	38	<30	<30	30	30	<30	<30	35	35	36	36	30	30	39	39	39	39
290 Great Western Highway	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	<30	<30	36	36	30	30	<30	<30	37	37

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																					
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
291 Great Western Highway	St Marys	Residential	47	42	42	41	52	35	35	<30	<30	37	37	39	39	38	38	38	38	31	31	<30	<30	36	36	38	38	32	32	39	39	40	40
292 Great Western Highway	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	<30	<30	36	36	30	30	<30	<30	37	37
293 Great Western Highway	St Marys	Residential	47	42	42	41	52	36	36	<30	<30	37	37	39	39	38	38	38	38	31	31	<30	<30	37	37	38	38	32	32	39	39	40	40
294 Great Western Highway	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	35	35	36	36	30	30	<30	<30	38	38
295 Great Western Highway	St Marys	Residential	47	42	42	41	52	36	39	37	39	38	40	39	40	39	40	38	40	31	36	<30	35	37	39	38	40	32	37	<30	35	41	42
296 Great Western Highway	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	35	35	35	35	36	36	30	30	<30	<30	38	38
297 Great Western Highway	St Marys	Residential	47	42	42	41	52	36	39	37	39	38	40	39	40	39	40	39	40	32	37	<30	35	37	39	40	41	34	38	41	42	41	42
298 Great Western Highway	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	36	36	30	30	<30	<30	38	38
299-311 Great Western Highway	St Marys	Commercial	70	70	70	70	0	37	40	38	41	<30	37	41	42	41	42	41	42	33	38	40	42	39	41	41	42	35	39	42	43	<30	37
300 Great Western Highway	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	38	38
302 Great Western Highway	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	39	39	38	38	38	38	30	30	<30	<30	36	36	<30	<30	<30	<30	39	39	39	39
304 Great Western Highway	St Marys	Residential	47	42	42	41	52	35	35	<30	<30	37	37	39	39	39	39	38	38	31	31	<30	<30	36	36	38	38	32	32	39	39	40	40
306 Great Western Highway	St Marys	Residential	47	42	42	41	52	35	35	<30	<30	37	37	39	39	39	39	39	39	31	31	<30	<30	37	37	38	38	32	32	39	39	40	40
308-310 Great Western Highway	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	39	39	38	38	38	38	30	30	<30	<30	36	36	<30	<30	<30	<30	39	39	39	39
312 Great Western Highway	St Marys	Residential	47	42	42	41	52	36	39	37	39	38	40	39	40	39	40	39	40	31	36	<30	35	37	39	38	40	32	37	39	40	41	42
315 Great Western Highway	St Marys	Residential	47	42	42	41	52	37	40	37	40	38	41	41	42	40	42	<30	37	32	38	39	41	<30	37	40	42	34	39	41	42	42	43
316 Great Western Highway	St Marys	Residential	47	42	42	41	52	36	39	37	39	38	40	39	40	39	40	39	40	31	36	<30	35	37	39	38	40	32	37	<30	35	41	42
324 Great Western Highway	St Marys	Residential	47	42	42	41	52	35	38	<30	35	37	39	39	40	39	40	39	40	31	36	<30	35	37	39	38	40	32	37	<30	35	41	42
329 Great Western Highway	St Marys	Residential	47	42	42	41	52	36	39	37	39	38	40	39	40	40	41	39	40	31	36	39	40	37	39	<30	35	<30	35	<30	35	41	42
330 Great Western Highway	St Marys	Residential	47	42	42	41	52	35	35	<30	<30	37	37	39	39	39	39	39	39	31	31	<30	<30	37	37	38	38	32	32	39	39	40	40
335 Great Western Highway	St Marys	Commercial	70	70	70	70	0	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	30	30	35	35	36	36	36	36	30	30	39	39	39	39
339 Great Western Highway	St Marys	Commercial	70	70	70	70	0	<30	<30	<30	<30	<30	<30	31	33	<30	<30	30	33	<30	<30	<30	<30	<30	<30	32	34	<30	<30	<30	<30	<30	<30
341 Great Western Highway	St Marys	Commercial	70	70	70	70	0	<30	<30	<30	<30	35	35	<30	<30	<30	<30	33	33	30	30	35	35	35	35	36	36	30	30	39	39	39	39
343 Great Western Highway	St Marys	Commercial	70	70	70	70	0	35	35	<30	<30	35	35	<30	<30	<30	<30	<30	<30	30	30	35	35	<30	<30	36	36	30	30	39	39	39	39
369 Great Western Highway	St Marys	Commercial	70	70	70	70	0	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30
371 Great Western Highway	St Marys	Commercial	70	70	70	70	0	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30
373 Great Western Highway	St Marys	Commercial	70	70	70	70	0	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	37	37
382-396 Great Western Highway	St Marys	Commercial	70	70	70	70	0	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30
389-441 Great Western Highway	St Marys	Commercial	70	70	70	70	0	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	30	30	35	35	<30	<30	33	33	<30	<30	<30	<30	38	38
410-422 Great Western Highway	St Marys	Commercial	70	70	70	70	0	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	37	37
449 Great Western Highway	St Marys	Commercial	70	70	70	70	0	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30
2 Harris Street	North St Marys	Industrial	75	75	75	75	0	45	50	46	51	46	51	46	51	46	51	45	50	41	50	45	50	37	49	41	50	35	49	49	52	47	51

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																							
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
6-8 Harris Street	North St Marys	Industrial	75	75	75	75	0	53	62	54	62	55	62	59	63	59	63	58	63	49	61	58	63	45	61	46	61	40	61	57	62	55	62
7-11 Harris Street	North St Marys	Industrial	75	75	75	75	0	47	63	47	63	49	63	50	63	49	63	50	63	41	63	48	63	51	63	56	64	50	63	51	63	56	64
12 Harris Street	North St Marys	Industrial	75	75	75	75	0	51	57	52	57	52	57	54	58	54	58	53	58	47	57	53	58	47	57	48	57	42	56	55	59	53	58
14-16 Harris Street	North St Marys	Industrial	75	75	75	75	0	51	69	49	69	49	69	50	69	49	69	49	69	43	69	48	69	48	69	61	70	55	69	52	69	62	70
19 Harris Street	North St Marys	Industrial	75	75	75	75	0	57	67	58	67	60	67	63	68	62	67	62	67	52	66	61	67	61	67	63	68	57	67	62	67	64	68
21 Harris Street	North St Marys	Industrial	75	75	75	75	0	58	71	59	71	61	71	64	72	63	72	63	72	52	71	62	72	64	72	66	72	60	71	63	72	66	72
24 Harris Street	North St Marys	Industrial	75	75	75	75	0	65	77	66	77	68	78	71	78	70	78	70	78	60	77	69	78	71	78	73	78	67	77	70	78	73	78
25 Harris Street	North St Marys	Industrial	75	75	75	75	0	60	73	61	73	64	74	68	74	67	74	67	74	54	73	66	74	68	74	69	74	63	73	66	74	69	74
36-38 Harris Street	North St Marys	Industrial	75	75	75	75	0	73	88	73	88	77	88	79	89	78	88	79	89	65	88	77	88	82	89	83	89	77	88	79	89	84	89
36-38 Harris Street	North St Marys	Commercial	70	70	70	70	0	71	78	72	78	72	78	74	79	74	79	73	78	67	77	73	78	68	78	73	78	67	77	75	79	76	80
37 Harris Street	North St Marys	Industrial	75	75	75	75	0	48	53	49	54	51	55	51	55	50	54	51	55	43	53	49	54	52	55	53	56	47	53	53	56	54	56
41 Harris Street	North St Marys	Industrial	75	75	75	75	0	50	53	51	54	52	54	56	57	56	57	56	57	45	51	55	56	51	54	56	57	50	53	54	55	57	58
45 Harris Street	North St Marys	Industrial	75	75	75	75	0	50	53	51	54	53	55	57	58	57	58	57	58	46	51	56	57	54	55	52	54	46	51	55	56	55	56
49 Harris Street	North St Marys	Industrial	75	75	75	75	0	48	52	49	52	50	53	53	54	53	54	52	54	44	50	52	54	50	53	48	52	42	50	53	54	51	53
46 Hobart Street	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	31	31	31	31	31	31	30	30	<30	<30	30	30	<30	<30	<30	<30	<30	<30	33	33	33	33
48 Hobart Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	31	33	<30	<30	<30	<30	33	34	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
49 Hobart Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
51 Hobart Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	32	32	<30	<30	<30	<30	<30	<30
52 Hobart Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	33	<30	<30	<30	<30	<30	<30	32	34	<30	<30	<30	<30	<30	<30
53 Hobart Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	34	<30	<30	<30	<30	<30	<30	32	34	<30	<30	<30	<30	<30	<30
55 Hobart Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30
56 Hobart Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	30	30	35	35	<30	<30	33	33	<30	<30	<30	<30	38	38
57 Hobart Street	St Marys	Residential	47	42	42	41	52	35	38	<30	35	35	38	<30	35	<30	35	<30	35	31	36	35	38	<30	35	33	37	<30	35	39	40	38	40
58 Hobart Street	St Marys	Residential	47	42	42	41	52	36	39	37	39	37	39	<30	35	<30	35	<30	35	32	37	35	38	<30	35	33	37	<30	35	39	40	39	40
59 Hobart Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	33	33	30	30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	37	37
60 Hobart Street	St Marys	Residential	47	42	42	41	52	35	38	<30	35	<30	35	<30	35	<30	35	<30	35	31	36	<30	35	<30	35	<30	35	<30	35	39	40	38	40
66 Hobart Street	St Marys	Residential	47	42	42	41	52	36	39	<30	35	37	39	<30	35	<30	35	<30	35	31	36	35	38	<30	35	33	37	<30	35	39	40	39	40
67 Hobart Street	St Marys	Residential	47	42	42	41	52	36	39	37	39	37	39	<30	35	<30	35	<30	35	31	36	35	38	<30	35	<30	35	<30	35	39	40	39	40
68 Hobart Street	St Marys	Residential	47	42	42	41	52	35	38	<30	35	<30	35	<30	35	<30	35	<30	35	31	36	35	38	<30	35	<30	35	<30	35	39	40	38	40
69 Hobart Street	St Marys	Residential	47	42	42	41	52	36	36	37	37	37	37	<30	<30	<30	<30	<30	<30	32	32	35	35	<30	<30	<30	<30	<30	<30	39	39	39	39
70 Hobart Street	St Marys	Residential	47	42	42	41	52	37	41	38	41	38	41	<30	38	38	41	<30	38	33	39	35	40	<30	38	36	40	30	39	41	43	40	42
71 Hobart Street	St Marys	Residential	47	42	42	41	52	36	39	37	39	37	39	<30	35	<30	35	<30	35	32	37	35	38	<30	35	<30	35	<30	35	39	40	39	40
72 Hobart Street	St Marys	Residential	47	42	42	41	52	38	41	39	42	38	41	39	42	39	42	38	41	34	39	<30	38	<30	38	36	40	30	39	42	43	41	43
74 Hobart Street	St Marys	Residential	47	42	42	41	52	37	41	38	41	38	41	<30	38	38	41	<30	38	33	39	<30	38	<30	38	36	40	30	39	41	43	40	42
75 Hobart Street	St Marys	Residential	47	42	42	41	52	38	41	39	42	<30	38	39	42	39	42	38	41	34	39	<30	38	<30	38	36	40	30	39	42	43	41	43
76 Hobart Street	St Marys	Residential	47	42	42	41	52	40	43	41	44	41	44	41	44	41	44	39	43	36	41	40	43	35	41	38	42	32	41	44	45	42	44
82 Hobart Street	St Marys	Residential	47	42	42	41	52	46	51	47	52	48	52	48	52	48	52	47	52	42	51	47	52	43	51	44	51	38	50	50	53	49	53

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																							
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
83 Hobart Street	St Marys	Residential	47	42	42	41	52	47	53	48	53	49	54	52	55	52	55	52	55	43	53	51	55	48	53	49	54	43	53	52	55	52	55
95 Jackaranda Road	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	37	37
97 Jackaranda Road	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
99 Jackaranda Road	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	37	37
101 Jackaranda Road	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	36	36	30	30	<30	<30	37	37
103 Jackaranda Road	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	36	36	30	30	<30	<30	37	37
105 Jackaranda Road	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	36	36	30	30	<30	<30	37	37
107 Jackaranda Road	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	35	35	36	36	30	30	<30	<30	37	37
109 Jackaranda Road	North St Marys	Residential	48	43	43	43	53	<30	<30	30	30	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	35	35	36	36	30	30	<30	<30	37	37
1 Kalang Avenue	St Marys	Residential	47	42	42	41	52	39	39	40	40	40	40	42	42	42	42	41	41	34	34	41	41	37	37	<30	<30	<30	<30	43	43	42	42
3 Kalang Avenue	St Marys	Residential	47	42	42	41	52	39	43	40	43	41	44	43	45	43	45	42	44	35	41	42	44	<30	40	40	43	34	41	44	45	<30	40
5 Kalang Avenue	St Marys	Residential	47	42	42	41	52	40	43	41	44	41	44	43	45	43	45	43	45	35	41	42	44	<30	40	40	43	34	41	44	45	<30	40
6-50 Kalang Avenue	St Marys	Educational	55	55	55	55	0	38	41	39	41	<30	37	41	42	41	42	<30	37	34	39	40	42	37	40	38	41	32	38	42	43	42	43
7 Kalang Avenue	St Marys	Residential	47	42	42	41	52	40	43	41	44	41	44	44	45	43	45	43	45	36	41	43	45	39	43	40	43	34	41	44	45	<30	40
9 Kalang Avenue	St Marys	Residential	47	42	42	41	52	40	44	41	44	42	45	44	46	44	46	44	46	36	42	43	45	39	43	41	44	35	42	45	46	44	46
11 Kalang Avenue	St Marys	Residential	47	42	42	41	52	41	44	42	45	42	45	44	46	44	46	44	46	36	42	43	45	39	43	41	44	35	42	45	46	44	46
13 Kalang Avenue	St Marys	Residential	47	42	42	41	52	41	44	42	45	42	45	45	46	44	46	44	46	37	42	43	45	39	43	41	44	35	42	45	46	44	46
15 Kalang Avenue	St Marys	Residential	47	42	42	41	52	41	44	42	45	42	45	45	46	44	46	44	46	37	42	43	45	40	44	41	44	35	42	45	46	45	46
17 Kalang Avenue	St Marys	Residential	47	42	42	41	52	41	44	42	45	43	45	45	46	45	46	44	46	37	42	44	46	40	44	41	44	35	42	46	47	45	46
19 Kalang Avenue	St Marys	Residential	47	42	42	41	52	42	45	43	46	43	46	45	47	45	47	45	47	37	43	44	46	40	44	41	45	35	43	46	47	45	47
21 Kalang Avenue	St Marys	Residential	47	42	42	41	52	42	45	43	46	43	46	46	47	46	47	45	47	38	43	45	47	41	45	41	45	35	43	46	47	45	47
23 Kalang Avenue	St Marys	Residential	47	42	42	41	52	42	45	43	46	44	46	46	47	46	47	46	47	38	43	45	47	41	45	<30	42	<30	42	47	48	46	47
25 Kalang Avenue	St Marys	Residential	47	42	42	41	52	43	46	44	46	44	46	47	48	47	48	46	47	38	43	46	47	41	45	<30	42	<30	42	47	48	46	47
27 Kalang Avenue	St Marys	Residential	47	42	42	41	52	43	46	44	46	44	46	47	48	47	48	46	47	39	44	46	47	41	45	43	46	37	43	47	48	46	47
29 Kalang Avenue	St Marys	Residential	47	42	42	41	52	43	46	44	46	45	47	48	49	47	48	47	48	39	44	46	47	41	45	43	46	37	43	47	48	47	48
31 Kalang Avenue	St Marys	Residential	47	42	42	41	52	43	46	44	46	45	47	48	49	48	49	47	48	39	44	47	48	41	45	43	46	37	43	48	49	47	48
33 Kalang Avenue	St Marys	Residential	47	42	42	41	52	43	46	44	46	45	47	48	49	48	49	47	48	39	44	47	48	<30	42	43	46	37	43	48	49	47	48
35 Kalang Avenue	St Marys	Residential	47	42	42	41	52	44	44	45	45	45	45	48	48	48	48	47	47	40	40	47	47	<30	<30	43	43	37	37	48	48	47	47
37 Kalang Avenue	St Marys	Residential	47	42	42	41	52	44	47	45	48	46	48	49	50	49	50	48	49	40	45	48	49	43	47	44	47	38	45	48	49	48	49
39 Kalang Avenue	St Marys	Residential	47	42	42	41	52	44	47	45	48	46	48	49	50	49	50	48	49	40	45	48	49	43	47	44	47	38	45	49	50	48	49
41 Kalang Avenue	St Marys	Residential	47	42	42	41	52	45	48	46	49	46	49	49	50	49	50	48	50	40	46	48	50	43	47	45	48	39	46	49	50	48	50
43 Kalang Avenue	St Marys	Residential	47	42	42	41	52	46	50	46	50	47	50	50	52	50	52	49	51	41	48	49	51	46	50	49	51	43	48	50	52	51	52
47 Kalang Avenue	St Marys	Residential	47	42	42	41	52	45	50	46	51	47	51	50	53	49	52	49	52	40	50	48	52	48	52	50	53	44	50	49	52	51	53
49 Kalang Avenue	St Marys	Residential	47	42	42	41	52	45	54	46	54	48	54	50	55	49	54	50	55	40	53	48	54	50	55	51	55	45	54	50	55	52	56
2 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	30	30	<30	<30	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	32	32
4 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	30	30	31	31	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	32	32
5 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	30	30	<30	<30	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	33	33
6 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	30	30	31	31	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	32	32

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																							
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
7 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	30	30	31	31	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	33	33
8 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	30	30	31	31	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	33	33
9 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	30	30	31	31	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	33	33
10 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	31	31	31	31	31	31	30	30	<30	<30	30	30	<30	<30	<30	<30	<30	<30	33	33	33	33
11 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	31	31	31	31	31	31	30	30	<30	<30	30	30	<30	<30	<30	<30	<30	<30	33	33	33	33
12 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	31	31	31	31	31	31	30	30	<30	<30	30	30	<30	<30	<30	<30	<30	<30	33	33	33	33
13 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	31	31	31	31	31	31	30	30	<30	<30	30	30	<30	<30	<30	<30	<30	<30	33	33	33	33
14 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	31	31	31	31	31	31	31	31	<30	<30	30	30	<30	<30	<30	<30	<30	<30	33	33	33	33
15 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	31	31	31	31	31	31	31	31	<30	<30	30	30	<30	<30	<30	<30	<30	<30	33	33	33	33
16 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	30	33	31	33	31	33	31	33	31	33	<30	<30	30	33	<30	<30	<30	<30	<30	<30	33	34	33	34
17 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	31	31	31	31	31	31	31	31	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	33	33
18 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	30	33	31	33	31	33	31	33	31	33	<30	<30	30	33	<30	<30	<30	<30	<30	<30	33	34	33	34
19 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	31	31	31	31	31	31	31	31	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	33	33
20 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
21 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	30	33	31	33	<30	<30	31	33	31	33	<30	<30	30	33	<30	<30	<30	<30	<30	<30	<30	<30	33	34
22 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32	<30	<30	<30	<30	<30	<30
23 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	32	32	<30	<30	<30	<30	<30	<30
24 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	32	32	<30	<30	<30	<30	<30	<30
25 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
26 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	32	32	<30	<30	<30	<30	<30	<30
27 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
28 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	32	32	<30	<30	<30	<30	<30	<30
30 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	32	32	<30	<30	<30	<30	<30	<30
32 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	32	32	<30	<30	<30	<30	<30	<30
33 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	30	30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	37	37
34 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	32	32	<30	<30	<30	<30	<30	<30
35 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	30	30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	37	37
36 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	37	37
37 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	30	36	<30	35	<30	35	33	37	<30	35	<30	35	37	39
38 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	37	37
39 Kenny Avenue	St Marys	Residential	47	42	42	41	52	35	38	<30	35	<30	35	<30	35	<30	35	<30	35	30	36	<30	35	<30	35	33	37	<30	35	39	40	38	40
40 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	37	37
41 Kenny Avenue	St Marys	Residential	47	42	42	41	52	35	38	<30	35	<30	35	<30	35	<30	35	<30	35	31	36	35	38	<30	35	33	37	<30	35	39	40	38	40
42 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	30	30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	37	37
43 Kenny Avenue	St Marys	Residential	47	42	42	41	52	36	39	<30	35	37	39	<30	35	<30	35	<30	35	31	36	35	38	<30	35	33	37	<30	35	39	40	38	40
44 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	30	30	<30	<30	<30	<30	33	33	<30	<30	39	39	37	37
45 Kenny Avenue	St Marys	Residential	47	42	42	41	52	36	39	37	39	37	39	<30	35	<30	35	<30	35	31	36	35	38	<30	35	<30	35	<30	35	39	40	38	40
46 Kenny Avenue	St Marys	Residential	47	42	42	41	52	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	30	36	<30	35	<30	35	33	37	<30	35	39	40	38	40
47 Kenny Avenue	St Marys	Residential	47	42	42	41	52	36	40	37	40	37	40	<30	37	<30	37	<30	37	32	38	35	39	<30	37	<30	37	<30	37	<30	37	39	41
49 Kenny Avenue	St Marys	Residential	47	42	42	41	52	36	36	37	37	38	38	<30	<30	<30	<30	<30	<30	32	32	35	35	<30	<30	<30	<30	<30	<30	<30	<30	39	39

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																							
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
1 King Street	St Marys	Residential	47	42	42	41	52	36	39	<30	35	37	39	<30	35	38	40	<30	35	31	36	<30	35	<30	35	<30	35	<30	35	39	40	40	41
3 King Street	St Marys	Residential	47	42	42	41	52	36	39	37	39	37	39	39	40	39	40	38	40	32	37	<30	35	<30	35	38	40	32	37	<30	35	41	42
4 King Street	St Marys	Residential	47	42	42	41	52	35	35	<30	<30	37	37	<30	<30	38	38	<30	<30	31	31	<30	<30	35	35	36	36	30	30	39	39	40	40
5 King Street	St Marys	Residential	47	42	42	41	52	36	39	37	39	37	39	39	40	38	40	38	40	32	37	<30	35	35	38	38	40	32	37	<30	35	40	41
6 King Street	St Marys	Residential	47	42	42	41	52	35	35	<30	<30	37	37	<30	<30	38	38	38	38	31	31	<30	<30	36	36	38	38	32	32	<30	<30	40	40
8 King Street	St Marys	Residential	47	42	42	41	52	36	39	37	39	37	39	39	40	38	40	38	40	31	36	<30	35	36	39	38	40	32	37	<30	35	41	42
10 King Street	St Marys	Residential	47	42	42	41	52	36	39	37	39	38	40	39	40	39	40	39	40	32	37	<30	35	37	39	<30	35	<30	35	<30	35	41	42
12 King Street	St Marys	Residential	47	42	42	41	52	37	40	38	41	38	41	41	42	40	42	39	41	32	38	39	41	39	41	41	42	35	39	41	42	42	43
14 King Street	St Marys	Residential	47	42	42	41	52	37	40	38	41	38	41	41	42	40	42	39	41	32	38	39	41	39	41	41	42	35	39	41	42	42	43
23 King Street	St Marys	Residential	47	42	42	41	52	38	41	38	41	<30	38	42	43	41	43	41	43	33	39	40	42	39	42	41	43	35	40	42	43	<30	38
25 King Street	St Marys	Residential	47	42	42	41	52	38	41	39	42	<30	38	42	43	41	43	41	43	33	39	40	42	39	42	41	43	35	40	42	43	<30	38
26 King Street	St Marys	Residential	47	42	42	41	52	37	40	38	41	<30	37	41	42	41	42	<30	37	33	38	40	42	39	41	41	42	35	39	42	43	42	43
27 King Street	St Marys	Residential	47	42	42	41	52	38	41	39	42	40	42	42	43	42	43	41	43	33	39	41	43	40	42	41	43	35	40	42	43	<30	38
28 King Street	St Marys	Residential	47	42	42	41	52	37	40	38	41	<30	37	41	42	41	42	<30	37	32	38	40	42	39	41	41	42	35	39	41	42	42	43
29 King Street	St Marys	Residential	47	42	42	41	52	38	41	39	42	40	42	42	43	42	43	41	43	33	39	41	43	40	42	41	43	35	40	42	43	<30	38
30 King Street	St Marys	Residential	47	42	42	41	52	37	40	37	40	38	41	41	42	40	42	<30	37	32	38	39	41	<30	37	40	42	34	39	41	42	42	43
31 King Street	St Marys	Residential	47	42	42	41	52	38	41	39	42	40	42	43	44	42	43	42	43	33	39	41	43	40	42	41	43	35	40	42	43	<30	38
32 King Street	St Marys	Residential	47	42	42	41	52	37	40	38	41	38	41	41	42	41	42	39	41	32	38	40	42	39	41	40	42	34	39	41	42	42	43
33 King Street	St Marys	Residential	47	42	42	41	52	38	41	39	42	40	42	43	44	42	43	42	43	33	39	41	43	40	42	41	43	35	40	42	43	<30	38
35 King Street	St Marys	Residential	47	42	42	41	52	38	41	39	42	40	42	43	44	42	43	42	43	34	39	41	43	40	42	41	43	35	40	42	43	<30	38
36 King Street	St Marys	Residential	47	42	42	41	52	37	39	38	40	38	40	41	42	41	42	39	40	32	37	40	41	39	40	40	41	34	38	41	42	42	43
37 King Street	St Marys	Residential	47	42	42	41	52	38	41	39	41	40	42	42	43	42	43	41	42	33	38	41	42	39	41	41	42	35	39	42	43	42	43
38 King Street	St Marys	Residential	47	42	42	41	52	37	40	38	41	38	41	42	43	41	42	41	42	33	38	40	42	39	41	41	42	35	39	42	43	42	43
39 King Street	St Marys	Residential	47	42	42	41	52	37	37	38	38	<30	<30	41	41	41	41	41	41	33	33	40	40	<30	<30	40	40	34	34	42	42	42	42
44 King Street	St Marys	Residential	47	42	42	41	52	36	39	37	39	38	40	41	42	40	41	<30	35	32	37	39	40	<30	35	40	41	34	38	41	42	42	43
46-48 King Street	St Marys	Residential	47	42	42	41	52	36	39	37	39	38	40	39	40	40	41	39	40	32	37	39	40	37	39	38	40	32	37	41	42	41	42
49 King Street	St Marys	Commercial	70	70	70	70	0	35	36	<30	<30	37	38	31	33	31	33	33	34	30	33	35	36	36	37	36	37	30	33	39	39	40	40
50 King Street	St Marys	Commercial	70	70	70	70	0	<30	<30	<30	<30	35	35	<30	<30	<30	<30	33	33	<30	<30	<30	<30	35	35	36	36	30	30	<30	<30	38	38
51 King Street	St Marys	Commercial	70	70	70	70	0	<30	<30	30	33	31	33	31	33	31	33	31	33	<30	<30	30	33	<30	<30	33	34	<30	<30	33	34	33	34
52A King Street	St Marys	Commercial	70	70	70	70	0	<30	<30	30	33	31	33	31	33	31	33	31	33	<30	<30	30	33	<30	<30	33	34	<30	<30	33	34	33	34
54 King Street	St Marys	Commercial	70	70	70	70	0	<30	<30	<30	<30	35	36	31	33	31	33	33	34	30	33	35	36	<30	<30	33	34	<30	<30	<30	<30	38	39
56 King Street	St Marys	Commercial	70	70	70	70	0	35	35	<30	<30	37	37	<30	<30	<30	<30	<30	<30	31	31	35	35	35	35	36	36	30	30	39	39	39	39
2 Kungala Street	St Marys	Residential	47	42	42	41	52	40	43	41	44	42	44	43	45	42	44	42	44	36	41	42	44	39	43	40	43	34	41	45	46	44	45
4 Kungala Street	St Marys	Residential	47	42	42	41	52	40	43	41	44	42	44	43	45	42	44	42	44	36	41	41	44	<30	40	40	43	34	41	44	45	44	45
8 Kungala Street	St Marys	Residential	47	42	42	41	52	40	43	41	44	41	44	42	44	42	44	42	44	36	41	41	44	<30	40	40	43	34	41	44	45	44	45
9 Kungala Street	St Marys	Residential	47	42	42	41	52	39	42	40	42	40	42	41	43	41	43	<30	38	35	40	40	42	37	41	<30	38	<30	38	43	44	42	43
10 Kungala Street	St Marys	Residential	47	42	42	41	52	39	39	40	40	41	41	42	42	42	42	41	41	35	35	41	41	37	37	<30	<30	<30	<30	43	43	42	42
11 Kungala Street	St Marys	Residential	47	42	42	41	52	39	42	40	42	40	42	41	43	41	43	<30	38	34	39	40	42	37	41	38	41	32	39	43	44	42	43
12 Kungala Street	St Marys	Residential	47	42	42	41	52	39	39	40	40	40	40	41	41	41	41	41	41	35	35	40	40	37	37	38	38	32	32	43	43	42	42
13 Kungala Street	St Marys	Residential	47	42	42	41	52	38	41	39	42	40	42	41	43	41	43	<30	38	34	39	40	42	37	41	38	41	32	39	42	43	42	43

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																					
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
14 Kungala Street	St Marys	Residential	47	42	42	41	52	39	39	40	40	40	40	41	41	41	41	<30	<30	35	35	40	40	37	37	38	38	32	32	43	43	42	42
15 Kungala Street	St Marys	Residential	47	42	42	41	52	38	41	39	42	40	42	41	43	41	43	39	42	34	39	40	42	37	41	38	41	32	39	43	44	42	43
16 Kungala Street	St Marys	Residential	47	42	42	41	52	39	42	40	42	40	42	42	43	41	43	41	43	35	40	40	42	37	41	38	41	32	39	43	44	42	43
17 Kungala Street	St Marys	Residential	47	42	42	41	52	38	41	39	42	<30	38	<30	38	40	42	39	42	34	39	39	42	37	41	38	41	32	39	42	43	42	43
18 Kungala Street	St Marys	Residential	47	42	42	41	52	39	42	40	42	40	42	42	43	41	43	41	43	34	39	40	42	37	41	38	41	32	39	43	44	42	43
19 Kungala Street	St Marys	Residential	47	42	42	41	52	38	41	39	42	<30	38	<30	38	40	42	39	42	34	39	39	42	37	41	38	41	32	39	42	43	42	43
20 Kungala Street	St Marys	Residential	47	42	42	41	52	38	41	39	42	40	42	41	43	41	43	39	42	34	39	40	42	36	40	38	41	32	39	42	43	42	43
21 Kungala Street	St Marys	Residential	47	42	42	41	52	37	41	38	41	<30	38	39	42	39	42	39	42	33	39	39	42	35	40	<30	38	<30	38	42	43	41	43
22 Kungala Street	St Marys	Residential	47	42	42	41	52	39	39	40	40	40	40	42	42	41	41	41	41	34	34	41	41	37	37	<30	<30	<30	<30	43	43	42	42
23 Kungala Street	St Marys	Residential	47	42	42	41	52	37	41	38	41	38	41	39	42	40	42	39	42	33	39	39	42	35	40	<30	38	<30	38	42	43	41	43
25 Kungala Street	St Marys	Residential	47	42	42	41	52	37	40	38	41	38	41	39	41	39	41	38	41	33	38	<30	37	35	39	<30	37	<30	37	41	42	40	42
27 Kungala Street	St Marys	Residential	47	42	42	41	52	37	40	38	41	38	41	39	41	39	41	39	41	33	38	<30	37	35	39	<30	37	<30	37	41	42	41	42
29 Kungala Street	St Marys	Residential	47	42	42	41	52	38	41	39	42	<30	38	<30	38	40	42	39	42	33	39	39	42	36	40	38	41	32	39	42	43	41	43
31 Kungala Street	St Marys	Residential	47	42	42	41	52	38	41	39	42	<30	38	41	43	40	42	39	42	33	39	39	42	36	40	38	41	32	39	42	43	41	43
2 Kurrajong Road	North St Marys	Residential	48	43	43	43	53	<30	37	<30	37	34	39	<30	37	31	38	33	38	<30	37	30	38	<30	37	38	41	32	38	<30	37	40	42
2A Kurrajong Road	North St Marys	Industrial	75	75	75	75	0	38	42	39	43	40	43	39	43	39	43	39	43	33	41	<30	40	40	43	<30	40	<30	40	42	44	44	45
2B Kurrajong Road	North St Marys	Industrial	75	75	75	75	0	37	42	38	42	38	42	39	43	39	43	39	43	33	41	<30	40	40	43	41	44	35	41	42	44	44	45
3 Kurrajong Road	North St Marys	Industrial	75	75	75	75	0	36	43	30	42	37	43	31	42	31	42	33	43	31	42	35	43	35	43	43	46	37	43	39	44	44	46
4 Kurrajong Road	North St Marys	Residential	48	43	43	43	53	<30	37	<30	37	<30	37	<30	37	31	38	31	38	<30	37	30	38	<30	37	38	41	32	38	<30	37	39	41
5 Kurrajong Road	North St Marys	Industrial	75	75	75	75	0	<30	37	30	38	31	38	31	38	31	38	31	38	<30	37	30	38	<30	37	38	41	32	38	33	38	39	41
7 Kurrajong Road	North St Marys	Industrial	75	75	75	75	0	<30	38	<30	38	35	40	<30	38	31	39	33	39	<30	38	30	39	<30	38	40	42	34	39	<30	38	41	43
8 Kurrajong Road	North St Marys	Residential	48	43	43	43	53	<30	<30	30	30	31	31	31	31	<30	<30	30	30	<30	<30	<30	<30	<30	<30	38	38	32	32	33	33	39	39
9 Kurrajong Road	North St Marys	Industrial	75	75	75	75	0	<30	38	<30	38	34	39	<30	38	31	39	33	39	<30	38	<30	38	<30	38	38	41	32	39	<30	38	40	42
10 Kurrajong Road	North St Marys	Residential	48	43	43	43	53	<30	<30	30	30	31	31	<30	<30	<30	<30	30	30	<30	<30	<30	<30	<30	<30	38	38	32	32	33	33	38	38
11 Kurrajong Road	North St Marys	Industrial	75	75	75	75	0	<30	37	30	38	34	39	31	38	31	38	33	38	<30	37	30	38	<30	37	36	40	30	38	33	38	38	41
13 Kurrajong Road	North St Marys	Industrial	75	75	75	75	0	<30	35	30	36	31	36	31	36	31	36	31	36	<30	35	30	36	<30	35	36	39	30	36	33	37	37	39
14 Kurrajong Road	North St Marys	Residential	48	43	43	43	53	<30	<30	30	30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	38	38
15 Kurrajong Road	North St Marys	Industrial	75	75	75	75	0	<30	<30	30	33	31	33	31	33	31	33	31	33	<30	<30	30	33	<30	<30	33	34	<30	<30	33	34	33	34
16 Kurrajong Road	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	34
17-19 Kurrajong Road	North St Marys	Industrial	75	75	75	75	0	<30	35	30	36	31	36	31	36	31	36	31	36	<30	35	30	36	<30	35	33	37	<30	35	<30	35	<30	35
21 Kurrajong Road	North St Marys	Industrial	75	75	75	75	0	<30	<30	<30	<30	<30	<30	31	31	31	31	31	31	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
23 Kurrajong Road	North St Marys	Industrial	75	75	75	75	0	<30	<30	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	<30	<30	33	33	<30	<30
25 Kurrajong Road	North St Marys	Industrial	75	75	75	75	0	35	38	30	36	37	39	31	36	31	36	33	37	31	36	35	38	<30	35	<30	35	<30	35	39	40	37	39
31-53 Kurrajong Road	North St Marys	Industrial	75	75	75	75	0	<30	<30	30	30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	31	31
76 Kurrajong Road	North St Marys	Commercial	70	70	70	70	0	35	40	<30	38	37	41	<30	38	<30	38	<30	38	30	39	35	40	37	41	40	42	34	39	39	42	41	43

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																					
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
90-100 Lee Holm Road	St Marys	Industrial	75	75	75	75	0	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
93 Lee Holm Road	St Marys	Industrial	75	75	75	75	0	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30
95-113 Lee Holm Road	St Marys	Industrial	75	75	75	75	0	<30	<30	30	33	31	33	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	34	33	34
5 Lethbridge Street	St Marys	Residential	47	42	42	41	52	50	54	51	55	52	55	53	56	52	55	52	55	46	53	51	55	49	54	51	55	45	53	55	57	54	56
7 Lethbridge Street	St Marys	Residential	47	42	42	41	52	47	51	48	51	48	51	49	52	48	51	48	51	42	49	48	51	47	51	49	52	43	49	51	53	51	53
9 Lethbridge Street	St Marys	Residential	47	42	42	41	52	46	50	47	51	48	51	48	51	48	51	47	51	42	49	47	51	46	50	48	51	42	49	50	52	50	52
11 Lethbridge Street	St Marys	Residential	47	42	42	41	52	46	50	47	50	47	50	48	51	47	50	47	50	41	48	47	50	45	49	48	51	42	48	50	52	50	52
12 Lethbridge Street	St Marys	Residential	47	42	42	41	52	45	49	45	49	46	49	47	50	47	50	46	49	40	47	46	49	43	48	47	50	41	47	49	51	49	51
13 Lethbridge Street	St Marys	Residential	47	42	42	41	52	46	51	47	51	47	51	48	52	48	52	48	52	42	50	47	51	45	50	48	52	42	50	50	53	50	53
14 Lethbridge Street	St Marys	Residential	47	42	42	41	52	44	48	45	49	45	49	46	49	46	49	45	49	40	47	45	49	43	48	46	49	40	47	48	50	49	51
16 Lethbridge Street	St Marys	Residential	47	42	42	41	52	44	50	45	50	45	50	46	51	45	50	45	50	39	49	44	50	<30	49	46	51	40	50	48	52	48	52
17 Lethbridge Street	St Marys	Residential	47	42	42	41	52	45	51	46	51	47	52	47	52	47	52	47	52	41	51	46	51	44	51	47	52	41	51	49	53	50	53
18 Lethbridge Street	St Marys	Residential	47	42	42	41	52	44	50	45	50	45	50	46	51	46	51	45	50	39	49	45	50	<30	49	46	51	40	50	48	52	48	52
19 Lethbridge Street	St Marys	Residential	47	42	42	41	52	46	51	47	52	47	52	49	53	49	53	48	52	41	51	48	52	44	51	48	52	42	51	50	53	50	53
21 Lethbridge Street	St Marys	Residential	47	42	42	41	52	45	50	46	51	47	51	49	52	49	52	48	52	41	50	48	52	44	50	48	52	42	50	50	53	50	53
27 Lethbridge Street	St Marys	Residential	47	42	42	41	52	43	47	44	47	45	48	47	49	47	49	46	48	39	45	46	48	44	47	46	48	40	45	48	49	48	49
29 Lethbridge Street	St Marys	Residential	47	42	42	41	52	43	46	44	46	45	47	46	47	46	47	46	47	39	44	45	47	43	46	45	47	39	44	47	48	48	49
31 Lethbridge Street	St Marys	Residential	47	42	42	41	52	41	44	42	44	42	44	44	45	44	45	44	45	36	41	43	45	41	44	43	45	37	42	45	46	46	47
33 Lethbridge Street	St Marys	Residential	47	42	42	41	52	41	44	41	44	42	44	45	46	44	45	44	45	36	41	43	45	41	44	44	45	38	42	45	46	46	47
27 Little Chapel Street	St Marys	Residential	47	42	42	41	52	43	46	43	46	44	46	46	47	46	47	45	47	38	43	45	47	43	46	45	47	39	44	47	48	47	48
29 Little Chapel Street	St Marys	Residential	47	42	42	41	52	43	46	44	46	45	47	47	48	47	48	46	47	39	44	46	47	44	46	46	47	40	44	47	48	48	49
31 Little Chapel Street	St Marys	Residential	47	42	42	41	52	43	46	44	46	45	47	47	48	47	48	47	48	39	44	46	47	44	46	46	47	40	44	47	48	48	49
31-39 Little Chapel Street	St Marys	Residential	47	42	42	41	52	43	47	44	47	45	48	47	49	47	49	46	48	39	45	46	48	44	47	46	48	40	45	47	49	48	49
33 Little Chapel Street	St Marys	Residential	47	42	42	41	52	43	47	44	47	45	48	47	49	47	49	46	48	39	45	46	48	43	47	46	48	40	45	47	49	48	49
35 Little Chapel Street	St Marys	Residential	47	42	42	41	52	43	47	44	47	45	48	47	49	47	49	47	49	39	45	46	48	44	47	46	48	40	45	48	49	48	49
41 Little Chapel Street	St Marys	Residential	47	42	42	41	52	43	47	44	47	45	48	47	49	47	49	46	48	39	45	46	48	44	47	46	48	40	45	47	49	48	49
43 Little Chapel Street	St Marys	Residential	47	42	42	41	52	43	46	44	46	45	47	47	48	47	48	46	47	38	43	46	47	43	46	45	47	39	44	47	48	48	49
9 Mallee Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
11 Mallee Street	North St Marys	Residential	48	43	43	43	53	<30	<30	30	30	<30	<30	<30	<30	31	31	33	33	<30	<30	<30	<30	35	35	36	36	30	30	<30	<30	37	37
13 Mallee Street	North St Marys	Residential	48	43	43	43	53	<30	<30	30	30	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	35	35	36	36	30	30	<30	<30	38	38
15 Mallee Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	36	36	38	38	32	32	<30	<30	38	38
17 Mallee Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	36	36	38	38	32	32	<30	<30	39	39
19 Mallee Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	37	37	38	38	32	32	<30	<30	39	39
1 Mamre Road	St Marys	Medical	65	65	65	65	0	<30	<30	<30	<30	35	35	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	37	37
2-6 Mamre Road	St Marys	Public Building	60	60	60	60	0	<30	<30	<30	<30	35	36	<30	<30	<30	<30	33	34	<30	<30	35	36	35	36	36	37	30	33	<30	<30	38	39
2-6 Mamre Road	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																					
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
5 Mamre Road	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	34	<30	<30	<30	<30	<30	<30	32	34	<30	<30	<30	<30	<30	<30
7 Mamre Road	St Marys	Residential	47	42	42	41	52	<30	<30	30	33	31	33	<30	<30	<30	<30	33	34	<30	<30	<30	<30	<30	<30	32	34	<30	<30	33	34	<30	<30
8-14 Mamre Road	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	31	31	<30	<30	30	30	<30	<30	30	30	<30	<30	<30	<30	<30	<30	32	32	33	33
9 Mamre Road	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	31	31	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32	<30	<30	33	33	<30	<30
1 Maple Road	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	33
3 Maple Road	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32	<30	<30	<30	<30	33	33
5 Maple Road	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	34	<30	<30	<30	<30	33	34
7 Maple Road	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
9 Maple Road	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	33	33
11 Maple Road	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
2 Merinda Street	St Marys	Residential	47	42	42	41	52	48	52	49	52	50	53	53	54	53	54	52	54	44	50	52	54	47	51	48	52	42	50	53	54	52	54
4 Merinda Street	St Marys	Residential	47	42	42	41	52	48	51	49	52	49	52	53	54	52	53	52	53	44	49	51	53	46	50	48	51	42	49	52	53	51	53
5 Merinda Street	St Marys	Commercial	70	70	70	70	0	44	48	45	48	46	49	48	50	48	50	48	50	40	46	47	49	43	47	44	48	38	46	49	50	48	50
6 Merinda Street	St Marys	Residential	47	42	42	41	52	48	51	48	51	49	51	52	53	52	53	51	52	43	48	51	52	46	50	48	51	42	48	52	53	51	52
8 Merinda Street	St Marys	Residential	47	42	42	41	52	47	50	48	50	48	50	52	53	52	53	51	52	43	48	51	52	45	49	47	50	41	47	51	52	51	52
10 Merinda Street	St Marys	Residential	47	42	42	41	52	47	50	47	50	48	50	51	52	51	52	50	51	42	47	50	51	45	49	46	49	40	47	51	52	50	51
12 Merinda Street	St Marys	Residential	47	42	42	41	52	46	49	47	49	47	49	51	52	50	51	50	51	42	47	50	51	44	48	46	49	40	46	50	51	49	50
14 Merinda Street	St Marys	Residential	47	42	42	41	52	45	48	46	49	47	49	50	51	50	51	49	50	41	46	49	50	44	48	45	48	39	46	50	51	49	50
16 Merinda Street	St Marys	Residential	47	42	42	41	52	45	48	46	48	46	48	50	51	49	50	49	50	41	46	48	49	44	47	45	48	39	45	49	50	48	49
1 Monfarville Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	38	38	<30	<30	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	39	39
3 Monfarville Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	36	36	30	30	<30	<30	38	38
5 Monfarville Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	35	35	36	36	30	30	<30	<30	38	38
6 Monfarville Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	36	36	30	30	<30	<30	38	38
7 Monfarville Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	<30	<30	36	36	30	30	<30	<30	37	37
8 Monfarville Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	35	35	36	36	30	30	<30	<30	37	37
10 Monfarville Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	<30	<30	36	36	30	30	<30	<30	37	37
11 Monfarville Street	St Marys	Residential	47	42	42	41	52	<30	<30	30	33	31	33	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
12 Monfarville Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	<30	<30	36	36	30	30	<30	<30	37	37
85 Morris Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
3 Narang Place	St Marys	Industrial	75	75	75	75	0	<30	<30	<30	<30	<30	<30	31	31	31	31	31	31	<30	<30	30	30	<30	<30	33	33	<30	<30	<30	<30	<30	<30
4 Narang Place	St Marys	Industrial	75	75	75	75	0	<30	<30	<30	<30	<30	<30	<30	<30	31	31	31	31	<30	<30	30	30	<30	<30	33	33	<30	<30	<30	<30	<30	<30
5 Narang Place	St Marys	Industrial	75	75	75	75	0	<30	<30	<30	<30	<30	<30	<30	<30	31	31	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
7 Narang Place	St Marys	Industrial	75	75	75	75	0	<30	37	<30	37	35	39	<30	37	<30	37	33	38	<30	37	<30	37	35	39	36	40	30	38	<30	37	38	41
10 Narang Place	St Marys	Industrial	75	75	75	75	0	<30	<30	<30	<30	<30	<30	31	31	31	31	31	31	<30	<30	30	30	<30	<30	33	33	<30	<30	<30	<30	<30	<30
11-14 Narang Place	St Marys	Industrial	75	75	75	75	0	<30	<30	30	30	31	31	31	31	<30	<30	30	30	<30	<30	30	30	<30	<30	32	32	<30	<30	<30	<30	<30	<30
2 Nariel Street	St Marys	Residential	47	42	42	41	52	50	53	51	54	51	54	54	55	54	55	53	55	45	51	53	55	48	52	51	54	45	51	54	55	54	55
3 Nariel Street	St Marys	Residential	47	42	42	41	52	50	54	51	54	52	55	56	57	56	57	55	56	46	52	55	56	49	53	51	54	45	52	55	56	54	56
4 Nariel Street	St Marys	Residential	47	42	42	41	52	49	52	50	53	50	53	54	55	53	54	53	54	45	50	52	54	48	52	50	53	44	50	53	54	53	54
6 Nariel Street	St Marys	Residential	47	42	42	41	52	48	52	49	52	50	53	53	54	53	54	52	54	44	50	52	54	47	51	50	53	44	50	53	54	52	54

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																							
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
7 Nariel Street	St Marys	Residential	47	42	42	41	52	48	51	48	51	49	51	52	53	52	53	51	52	43	48	51	52	46	50	48	51	42	48	52	53	51	52
8 Nariel Street	St Marys	Residential	47	42	42	41	52	48	52	49	52	49	52	53	54	52	54	52	54	44	50	51	53	47	51	49	52	43	50	52	54	52	54
9 Nariel Street	St Marys	Residential	47	42	42	41	52	47	50	48	50	48	50	52	53	51	52	51	52	43	48	50	51	46	49	47	50	41	47	51	52	51	52
10 Nariel Street	St Marys	Residential	47	42	42	41	52	47	51	48	51	49	52	52	53	52	53	51	53	43	49	51	53	46	50	49	52	43	49	52	53	52	53
12 Nariel Street	St Marys	Residential	47	42	42	41	52	47	51	48	51	48	51	52	53	51	53	51	53	43	49	50	52	46	50	49	52	43	49	51	53	52	53
13 Nariel Street	St Marys	Residential	47	42	42	41	52	46	49	47	50	48	50	51	52	51	52	50	51	42	47	50	51	45	49	47	50	41	47	50	51	50	51
14 Nariel Street	St Marys	Residential	47	42	42	41	52	47	51	47	51	48	51	51	53	51	53	50	52	42	49	50	52	45	50	49	52	43	49	51	53	51	53
15 Nariel Street	St Marys	Residential	47	42	42	41	52	45	48	46	49	47	49	50	51	50	51	49	50	41	46	49	50	44	48	46	49	40	46	50	51	49	50
16 Nariel Street	St Marys	Residential	47	42	42	41	52	46	50	47	50	47	50	51	52	51	52	50	52	42	48	50	52	45	49	49	51	43	48	50	52	51	52
14 Oak Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
16 Oak Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	36	36	30	30	<30	<30	38	38
17 Oak Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
18 Oak Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	35	35	36	36	36	36	30	30	<30	<30	39	39
19 Oak Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
20 Oak Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	30	30	35	35	36	36	<30	<30	<30	<30	39	39	39	39
21 Oak Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	35	35	36	36	36	36	30	30	<30	<30	39	39
22 Oak Street	North St Marys	Residential	48	43	43	43	53	35	35	<30	<30	37	37	<30	<30	<30	<30	<30	<30	30	30	35	35	36	36	<30	<30	<30	<30	39	39	40	40
1 Oleander Road	North St Marys	Residential	48	43	43	43	53	<30	37	<30	37	<30	37	<30	37	<30	37	<30	37	<30	37	<30	37	<30	37	38	41	32	38	39	41	40	42
2 Oleander Road	North St Marys	Residential	48	43	43	43	53	<30	37	<30	37	37	40	39	41	38	41	38	41	30	38	<30	37	39	41	<30	37	<30	37	39	41	41	42
3 Oleander Road	North St Marys	Residential	48	43	43	43	53	<30	37	<30	37	<30	37	<30	37	<30	37	38	41	<30	37	<30	37	<30	37	38	41	32	38	39	41	40	42
4 Oleander Road	North St Marys	Residential	48	43	43	43	53	35	40	<30	38	37	41	39	42	38	41	38	41	30	39	<30	38	39	42	<30	38	<30	38	39	42	41	43
5 Oleander Road	North St Marys	Residential	48	43	43	43	53	<30	37	<30	37	<30	37	39	41	38	41	38	41	<30	37	<30	37	37	40	38	41	32	38	39	41	40	42
6 Oleander Road	North St Marys	Residential	48	43	43	43	53	35	40	<30	38	37	41	39	42	38	41	39	42	30	39	<30	38	<30	38	<30	38	<30	38	39	42	41	43
7 Oleander Road	North St Marys	Residential	48	43	43	43	53	<30	37	<30	37	<30	37	39	41	38	41	38	41	<30	37	<30	37	37	40	38	41	32	38	39	41	40	42
8 Oleander Road	North St Marys	Residential	48	43	43	43	53	35	40	<30	38	37	41	39	42	39	42	39	42	30	39	<30	38	<30	38	<30	38	<30	38	39	42	41	43
9 Oleander Road	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	37	39	39	40	38	40	38	40	30	36	<30	35	37	39	38	40	32	37	39	40	40	41
10 Oleander Road	North St Marys	Residential	48	43	43	43	53	35	39	<30	37	37	40	39	41	39	41	39	41	30	38	<30	37	<30	37	<30	37	<30	37	39	41	41	42
11 Oleander Road	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	37	39	39	40	38	40	38	40	30	36	<30	35	37	39	38	40	32	37	39	40	40	41
12 Oleander Road	North St Marys	Residential	48	43	43	43	53	35	35	<30	<30	37	37	<30	<30	39	39	39	39	31	31	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	41	41
13 Oleander Road	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	37	39	39	40	39	40	38	40	30	36	<30	35	37	39	38	40	32	37	39	40	40	41
14 Oleander Road	North St Marys	Residential	48	43	43	43	53	35	35	<30	<30	37	37	<30	<30	39	39	39	39	31	31	39	39	<30	<30	38	38	32	32	<30	<30	41	41
15 Oleander Road	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	37	39	39	40	39	40	39	40	30	36	<30	35	37	39	38	40	32	37	39	40	40	41
16 Oleander Road	North St Marys	Residential	48	43	43	43	53	35	35	<30	<30	37	37	<30	<30	39	39	39	39	31	31	39	39	<30	<30	38	38	32	32	<30	<30	41	41
17 Oleander Road	North St Marys	Residential	48	43	43	43	53	35	38	<30	35	37	39	39	40	39	40	39	40	30	36	<30	35	37	39	38	40	32	37	39	40	40	41

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																					
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
18 Oleander Road	North St Marys	Residential	48	43	43	43	53	35	39	<30	37	38	41	<30	37	40	42	39	41	31	38	39	41	<30	37	38	41	32	38	<30	37	41	42
19 Oleander Road	North St Marys	Residential	48	43	43	43	53	35	38	<30	35	37	39	39	40	39	40	38	40	30	36	<30	35	37	39	38	40	32	37	39	40	40	41
20 Oleander Road	North St Marys	Residential	48	43	43	43	53	35	39	<30	37	38	41	<30	37	39	41	39	41	31	38	<30	37	<30	37	38	41	32	38	<30	37	41	42
21 Oleander Road	North St Marys	Residential	48	43	43	43	53	35	38	<30	35	37	39	39	40	39	40	39	40	30	36	<30	35	37	39	38	40	32	37	39	40	40	41
22 Oleander Road	North St Marys	Residential	48	43	43	43	53	36	40	37	41	38	41	<30	38	40	42	39	42	31	39	39	42	<30	38	38	41	32	39	<30	38	41	43
23 Oleander Road	North St Marys	Residential	48	43	43	43	53	35	39	<30	37	37	40	39	41	39	41	39	41	30	38	<30	37	37	40	38	41	32	38	39	41	40	42
24 Oleander Road	North St Marys	Residential	48	43	43	43	53	36	40	37	41	38	41	<30	38	39	42	39	42	31	39	39	42	<30	38	<30	38	<30	38	<30	38	41	43
25 Oleander Road	North St Marys	Residential	48	43	43	43	53	35	39	<30	37	37	40	39	41	39	41	38	41	30	38	<30	37	37	40	38	41	32	38	39	41	40	42
26 Oleander Road	North St Marys	Residential	48	43	43	43	53	36	40	37	40	38	41	<30	37	39	41	39	41	32	38	39	41	<30	37	<30	37	<30	37	41	42	41	42
27 Oleander Road	North St Marys	Residential	48	43	43	43	53	35	38	<30	35	37	39	39	40	39	40	39	40	31	36	<30	35	37	39	38	40	32	37	39	40	40	41
28 Oleander Road	North St Marys	Residential	48	43	43	43	53	36	36	37	37	38	38	<30	<30	39	39	39	39	32	32	39	39	<30	<30	<30	<30	<30	<30	41	41	41	41
29 Oleander Road	North St Marys	Residential	48	43	43	43	53	35	38	<30	35	38	40	39	40	39	40	39	40	31	36	<30	35	37	39	38	40	32	37	<30	35	41	42
30 Oleander Road	North St Marys	Residential	48	43	43	43	53	36	36	37	37	38	38	<30	<30	40	40	39	39	32	32	39	39	39	39	<30	<30	<30	<30	41	41	41	41
31 Oleander Road	North St Marys	Residential	48	43	43	43	53	36	39	37	39	38	40	39	40	39	40	39	40	31	36	<30	35	37	39	38	40	32	37	<30	35	41	42
32 Oleander Road	North St Marys	Residential	48	43	43	43	53	37	40	38	41	38	41	41	42	40	42	39	41	32	38	39	41	39	41	40	42	34	39	41	42	42	43
33 Oleander Road	North St Marys	Residential	48	43	43	43	53	36	39	37	39	38	40	39	40	39	40	39	40	32	37	<30	35	<30	35	38	40	32	37	41	42	41	42
34 Oleander Road	North St Marys	Residential	48	43	43	43	53	38	38	39	39	41	41	43	43	42	42	42	42	34	34	41	41	41	41	41	41	35	35	43	43	<30	<30
36 Oleander Road	North St Marys	Residential	48	43	43	43	53	38	38	40	40	41	41	43	43	42	42	42	42	34	34	41	41	41	41	41	41	35	35	43	43	44	44
38 Oleander Road	North St Marys	Residential	48	43	43	43	53	38	38	39	39	40	40	42	42	41	41	41	41	34	34	40	40	41	41	41	41	35	35	43	43	<30	<30
40 Oleander Road	North St Marys	Residential	48	43	43	43	53	39	43	40	43	41	44	42	44	42	44	42	44	34	41	41	44	41	44	41	44	35	41	43	45	44	45
42 Oleander Road	North St Marys	Residential	48	43	43	43	53	39	43	40	43	41	44	43	45	43	45	43	45	35	41	42	44	41	44	41	44	35	41	44	45	44	45
44 Oleander Road	North St Marys	Residential	48	43	43	43	53	40	44	41	44	42	45	44	46	43	45	43	45	35	42	42	45	43	45	43	45	37	42	44	46	45	46
46 Oleander Road	North St Marys	Residential	48	43	43	43	53	40	44	41	45	42	45	44	46	44	46	43	46	35	43	43	46	43	46	43	46	37	43	45	47	45	47
47-49 Oleander Road	North St Marys	Passive Recreation	60	60	60	60	0	39	43	40	43	41	44	42	44	41	44	42	44	34	41	41	44	41	44	41	44	35	41	43	45	44	45
48 Oleander Road	North St Marys	Residential	48	43	43	43	53	40	44	41	45	42	45	44	46	44	46	44	46	36	43	43	46	43	46	43	46	37	43	45	47	45	47
50 Oleander Road	North St Marys	Residential	48	43	43	43	53	40	44	41	45	42	45	44	46	44	46	44	46	36	43	43	46	43	46	43	46	37	43	45	47	45	47
52 Oleander Road	North St Marys	Residential	48	43	43	43	53	40	44	41	44	42	45	44	46	44	46	43	45	36	42	43	45	43	45	43	45	37	42	45	46	45	46
53 Oleander Road	North St Marys	Residential	48	43	43	43	53	39	43	40	44	41	44	43	45	42	45	42	45	35	42	41	44	41	44	43	45	37	42	44	46	45	46
54 Oleander Road	North St Marys	Residential	48	43	43	43	53	40	44	41	45	42	45	44	46	43	46	43	46	36	43	42	45	<30	42	43	46	37	43	45	47	45	47
55 Oleander Road	North St Marys	Residential	48	43	43	43	53	39	43	40	43	41	44	42	44	42	44	42	44	35	41	41	44	41	44	43	45	37	42	44	45	45	46
56 Oleander Road	North St Marys	Residential	48	43	43	43	53	40	44	41	44	42	45	43	45	43	45	43	45	36	42	42	45	<30	41	43	45	37	42	45	46	45	46
57 Oleander Road	North St Marys	Residential	48	43	43	43	53	39	43	40	43	41	44	42	44	42	44	42	44	35	41	41	44	41	44	43	45	37	42	44	45	45	46

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																							
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
58 Oleander Road	North St Marys	Residential	48	43	43	43	53	40	44	41	44	42	45	44	46	43	45	43	45	36	42	42	45	<30	41	43	45	37	42	45	46	45	46
59 Oleander Road	North St Marys	Residential	48	43	43	43	53	39	43	40	43	41	44	42	44	42	44	42	44	35	41	41	44	41	44	43	45	37	42	44	45	45	46
60 Oleander Road	North St Marys	Residential	48	43	43	43	53	40	44	41	44	42	45	43	45	42	45	42	45	35	42	42	45	<30	41	43	45	37	42	44	46	45	46
61 Oleander Road	North St Marys	Residential	48	43	43	43	53	39	39	40	40	41	41	42	42	42	42	42	42	35	35	41	41	41	41	43	43	37	37	44	44	45	45
62 Oleander Road	North St Marys	Residential	48	43	43	43	53	40	44	41	44	42	45	43	45	42	45	42	45	36	42	42	45	<30	41	43	45	37	42	44	46	45	46
63 Oleander Road	North St Marys	Residential	48	43	43	43	53	39	39	40	40	41	41	42	42	41	41	41	41	35	35	41	41	41	41	43	43	37	37	44	44	45	45
64 Oleander Road	North St Marys	Residential	48	43	43	43	53	40	44	41	44	42	45	44	46	43	45	43	45	36	42	42	45	<30	41	43	45	37	42	45	46	46	47
65 Oleander Road	North St Marys	Residential	48	43	43	43	53	39	42	40	42	41	43	42	43	41	43	41	43	35	40	40	42	41	43	43	44	37	41	44	45	45	46
66 Oleander Road	North St Marys	Residential	48	43	43	43	53	40	43	41	44	42	44	44	45	43	45	43	45	36	41	42	44	41	44	43	45	37	42	45	46	46	47
67 Oleander Road	North St Marys	Residential	48	43	43	43	53	40	43	41	44	42	44	43	45	43	45	43	45	36	41	42	44	41	44	44	45	38	42	45	46	46	47
68 Oleander Road	North St Marys	Residential	48	43	43	43	53	40	43	41	44	42	44	43	45	42	44	42	44	36	41	41	44	41	44	43	45	37	42	44	45	45	46
69 Oleander Road	North St Marys	Residential	48	43	43	43	53	40	43	41	44	42	44	43	45	42	44	42	44	35	41	41	44	<30	40	44	45	38	42	45	46	45	46
70 Oleander Road	North St Marys	Residential	48	43	43	43	53	40	43	41	44	42	44	43	45	42	44	42	44	35	41	41	44	41	44	43	45	37	42	44	45	45	46
72 Oleander Road	North St Marys	Residential	48	43	43	43	53	40	43	41	44	42	44	43	45	42	44	42	44	35	41	41	44	41	44	43	45	37	42	44	45	45	46
1 Parklawn Place	North St Marys	Commercial	70	70	70	70	0	36	39	37	39	38	40	<30	35	<30	35	38	40	31	36	35	38	37	39	38	40	32	37	39	40	41	42
2 Parklawn Place	North St Marys	Commercial	70	70	70	70	0	38	41	39	42	40	42	41	43	41	43	41	43	33	39	40	42	40	42	41	43	35	40	43	44	42	43
5A Parklawn Place	North St Marys	Commercial	70	70	70	70	0	35	38	<30	35	38	40	<30	35	<30	35	33	37	31	36	35	38	37	39	38	40	32	37	39	40	41	42
7 Parklawn Place	North St Marys	Commercial	70	70	70	70	0	35	38	<30	35	37	39	<30	35	<30	35	33	37	31	36	35	38	37	39	38	40	32	37	39	40	40	41
8 Parklawn Place	North St Marys	Commercial	70	70	70	70	0	38	41	39	42	40	42	41	43	40	42	41	43	33	39	40	42	40	42	41	43	35	40	42	43	42	43
9 Parklawn Place	North St Marys	Commercial	70	70	70	70	0	39	42	40	42	41	43	43	44	43	44	43	44	34	39	42	43	41	43	41	43	35	40	44	45	44	45
12-14 Parklawn Place	North St Marys	Commercial	70	70	70	70	0	38	41	39	42	40	42	42	43	41	43	41	43	34	39	40	42	41	43	41	43	35	40	43	44	42	43
16-18 Parklawn Place	North St Marys	Commercial	70	70	70	70	0	37	41	39	42	40	42	41	43	40	42	39	42	33	39	39	42	40	42	41	43	35	40	42	43	42	43
22 Parklawn Place	North St Marys	Commercial	70	70	70	70	0	39	43	40	43	41	44	43	45	43	45	43	45	34	41	42	44	41	44	41	44	35	41	44	45	44	45
23 Parklawn Place	North St Marys	Commercial	70	70	70	70	0	39	42	40	42	41	43	43	44	43	44	42	43	34	39	42	43	41	43	41	43	35	40	44	45	44	45
2 Phillip Street	St Marys	Residential	47	42	42	41	52	44	49	45	49	46	50	47	50	46	50	46	50	40	48	45	49	45	49	47	50	41	48	49	51	49	51
3 Phillip Street	St Marys	Residential	47	42	42	41	52	46	51	47	51	48	52	49	52	48	52	48	52	42	50	47	51	47	51	48	52	42	50	51	53	51	53
4 Phillip Street	St Marys	Residential	47	42	42	41	52	45	49	46	50	47	50	47	50	47	50	47	50	40	48	46	50	45	49	47	50	41	48	49	51	49	51
5 Phillip Street	St Marys	Residential	47	42	42	41	52	46	51	47	51	48	52	49	52	48	52	48	52	42	50	48	52	48	52	49	52	43	50	51	53	51	53
6 Phillip Street	St Marys	Residential	47	42	42	41	52	45	50	46	50	47	51	48	51	47	51	47	51	41	49	47	51	46	50	47	51	41	49	50	52	50	52
7 Phillip Street	St Marys	Residential	47	42	42	41	52	47	52	48	53	49	53	49	53	49	53	49	53	42	52	48	53	48	53	49	53	43	52	51	54	52	55
8 Phillip Street	St Marys	Residential	47	42	42	41	52	46	51	47	51	48	52	48	52	48	52	48	52	41	50	47	51	46	51	48	52	42	50	50	53	50	53
9 Phillip Street	St Marys	Residential	47	42	42	41	52	47	52	48	53	49	53	50	54	49	53	49	53	43	52	48	53	48	53	50	54	44	52	52	55	52	55
10 Phillip Street	St Marys	Residential	47	42	42	41	52	46	50	47	51	48	51	49	52	48	51	48	51	42	49	47	51	47	51	49	52	43	49	50	52	51	53
11 Phillip Street	St Marys	Residential	47	42	42	41	52	48	53	49	54	50	54	51	55	50	54	50	54	43	53	49	54	49	54	50	54	44	53	52	55	53	56

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																							
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
12 Phillip Street	St Marys	Residential	47	42	42	41	52	46	50	47	50	48	51	49	51	48	51	48	51	42	48	47	50	47	50	49	51	43	48	51	52	51	52
14 Phillip Street	St Marys	Residential	47	42	42	41	52	47	50	47	50	48	51	49	51	49	51	48	51	42	48	48	51	47	50	49	51	43	48	51	52	51	52
17 Phillip Street	St Marys	Residential	47	42	42	41	52	48	52	49	53	50	53	51	54	50	53	50	53	44	51	49	53	48	52	50	53	44	51	52	54	52	54
19 Phillip Street	St Marys	Residential	47	42	42	41	52	48	52	49	53	50	53	51	54	51	54	50	53	44	51	50	53	48	52	50	53	44	51	53	55	53	55
21 Phillip Street	St Marys	Residential	47	42	42	41	52	49	53	50	53	51	54	51	54	51	54	51	54	45	51	50	53	49	53	51	54	45	51	53	55	53	55
23 Phillip Street	St Marys	Residential	47	42	42	41	52	50	54	51	54	52	55	52	55	52	55	52	55	46	52	51	54	50	54	52	55	46	52	54	56	54	56
24 Phillip Street	St Marys	Residential	47	42	42	41	52	47	51	48	51	48	51	48	51	48	51	48	51	42	49	47	51	46	50	48	51	42	49	51	53	51	53
25 Phillip Street	St Marys	Residential	47	42	42	41	52	51	54	52	55	52	55	53	55	52	55	52	55	46	52	52	55	50	54	52	55	46	52	55	56	55	56
26 Phillip Street	St Marys	Residential	47	42	42	41	52	47	51	48	51	49	52	49	52	49	52	48	51	43	49	48	51	47	51	49	52	43	49	51	53	52	53
27 Phillip Street	St Marys	Residential	47	42	42	41	52	51	55	52	55	52	55	53	56	53	56	52	55	47	53	52	55	50	54	52	55	46	53	55	57	55	57
28 Phillip Street	St Marys	Residential	47	42	42	41	52	48	52	49	52	50	53	50	53	49	52	49	52	44	50	49	52	48	52	50	53	44	50	52	54	53	54
29 Phillip Street	St Marys	Residential	47	42	42	41	52	51	55	52	55	52	55	53	56	53	56	53	56	46	53	52	55	50	54	52	55	46	53	55	57	55	57
30 Phillip Street	St Marys	Residential	47	42	42	41	52	52	58	53	58	54	59	57	60	56	60	56	60	47	57	56	60	53	58	55	59	49	58	56	60	57	60
31 Phillip Street	St Marys	Commercial	70	70	70	70	0	51	55	52	55	53	56	56	57	56	57	55	57	47	53	55	57	51	55	53	56	47	53	55	57	55	57
32 Phillip Street	St Marys	Residential	47	42	42	41	52	53	59	54	59	55	60	60	62	59	62	59	62	49	59	58	61	54	59	56	60	50	59	58	61	58	61
34-36 Phillip Street	St Marys	Residential	47	42	42	41	52	54	61	55	61	56	61	62	64	61	64	61	64	50	60	60	63	56	61	57	62	51	61	59	63	59	63
40 Phillip Street	St Marys	Place Of Worship	55	55	55	55	0	52	57	53	57	54	58	57	59	57	59	56	59	48	56	56	59	52	57	54	58	48	56	57	59	57	59
51 Phillip Street	St Marys	Commercial	70	70	70	70	0	57	62	58	63	59	63	64	66	64	66	63	65	53	62	63	65	58	63	60	64	54	62	61	64	62	65
3 Plasser Crescent	North St Marys	Industrial	75	75	75	75	0	<30	35	30	36	31	36	31	36	31	36	31	36	<30	35	30	36	<30	35	33	37	<30	35	33	37	33	37
5 Plasser Crescent	North St Marys	Industrial	75	75	75	75	0	<30	35	<30	35	34	38	31	36	31	36	31	36	<30	35	30	36	<30	35	33	37	<30	35	<30	35	<30	35
7 Plasser Crescent	North St Marys	Industrial	75	75	75	75	0	<30	<30	<30	<30	31	31	31	31	31	31	31	31	<30	<30	30	30	<30	<30	33	33	<30	<30	<30	<30	<30	<30
9 Plasser Crescent	North St Marys	Industrial	75	75	75	75	0	<30	35	<30	35	<30	35	31	36	31	36	31	36	<30	35	30	36	<30	35	33	37	<30	35	<30	35	<30	35
13-15 Plasser Crescent	North St Marys	Industrial	75	75	75	75	0	<30	<30	<30	<30	34	34	31	31	31	31	31	31	<30	<30	30	30	<30	<30	33	33	<30	<30	<30	<30	<30	<30
17-23 Plasser Crescent	North St Marys	Industrial	75	75	75	75	0	<30	38	30	39	34	39	31	39	31	39	33	39	<30	38	30	39	<30	38	36	40	30	39	33	39	38	41
18-20 Plasser Crescent	North St Marys	Industrial	75	75	75	75	0	38	41	39	42	38	41	39	42	39	42	38	41	34	39	35	40	<30	38	<30	38	<30	38	42	43	40	42
22-24 Plasser Crescent	North St Marys	Industrial	75	75	75	75	0	37	40	38	41	38	41	<30	37	38	41	33	38	33	38	35	39	<30	37	32	38	<30	37	41	42	39	41
25-27 Plasser Crescent	North St Marys	Industrial	75	75	75	75	0	<30	38	30	39	34	39	31	39	31	39	33	39	<30	38	30	39	<30	38	36	40	30	39	33	39	39	42
26-28 Plasser Crescent	North St Marys	Industrial	75	75	75	75	0	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	<30	<30	<30	<30	<30	<30	32	32	<30	<30	<30	<30	<30	<30
33-37 Plasser Crescent	North St Marys	Industrial	75	75	75	75	0	<30	35	<30	35	35	38	31	36	31	36	33	37	<30	35	30	36	<30	35	36	39	30	36	<30	35	38	40
34-36 Plasser Crescent	North St Marys	Industrial	75	75	75	75	0	39	43	40	43	40	43	39	43	40	43	39	43	35	41	39	43	<30	40	33	41	<30	40	43	45	41	44
38-40 Plasser Crescent	North St Marys	Industrial	75	75	75	75	0	39	42	40	42	40	42	39	42	40	42	39	42	35	40	39	42	<30	38	33	39	<30	38	43	44	41	43
42-44 Plasser Crescent	North St Marys	Industrial	75	75	75	75	0	39	42	40	42	40	42	39	42	40	42	39	42	35	40	39	42	<30	38	36	40	30	39	43	44	41	43
50-52 Plasser Crescent	North St Marys	Industrial	75	75	75	75	0	37	42	37	42	37	42	<30	40	<30	40	<30	40	32	41	35	41	<30	40	38	42	32	41	39	43	41	44
54-56 Plasser Crescent	North St Marys	Industrial	75	75	75	75	0	36	41	37	42	37	42	<30	40	<30	40	<30	40	32	41	35	41	<30	40	38	42	32	41	39	43	41	44
58-60 Plasser Crescent	North St Marys	Industrial	75	75	75	75	0	<30	38	<30	38	35	40	<30	38	31	39	33	39	<30	38	30	39	<30	38	38	41	32	39	<30	38	40	42

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																					
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
1 Poplar Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	37	37	38	38	32	32	39	39	40	40
3 Poplar Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	37	37	38	38	32	32	39	39	40	40
4 Poplar Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
5 Poplar Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	30	30	<30	<30	37	37	38	38	32	32	39	39	40	40
6 Poplar Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	37	37
7 Poplar Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	30	30	<30	<30	37	37	38	38	32	32	39	39	40	40
8 Poplar Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	35	35	35	35	<30	<30	<30	<30	<30	<30	37	37
9 Poplar Street	North St Marys	Residential	48	43	43	43	53	35	35	<30	<30	37	37	<30	<30	<30	<30	<30	<30	30	30	<30	<30	37	37	38	38	32	32	39	39	40	40
10 Poplar Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	35	35	35	35	36	36	30	30	<30	<30	37	37
11 Poplar Street	North St Marys	Residential	48	43	43	43	53	35	35	<30	<30	37	37	<30	<30	<30	<30	<30	<30	30	30	<30	<30	37	37	38	38	32	32	39	39	40	40
12 Poplar Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	35	35	36	36	36	36	30	30	<30	<30	38	38
13 Poplar Street	North St Marys	Residential	48	43	43	43	53	35	35	<30	<30	37	37	<30	<30	<30	<30	<30	<30	31	31	<30	<30	37	37	38	38	32	32	39	39	41	41
14 Poplar Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	35	35	36	36	36	36	30	30	<30	<30	38	38
15 Poplar Street	North St Marys	Residential	48	43	43	43	53	35	35	<30	<30	37	37	<30	<30	<30	<30	<30	<30	31	31	<30	<30	37	37	<30	<30	<30	<30	39	39	41	41
16 Poplar Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	35	35	36	36	36	36	30	30	<30	<30	38	38
17 Poplar Street	North St Marys	Residential	48	43	43	43	53	36	36	37	37	37	37	<30	<30	<30	<30	<30	<30	31	31	<30	<30	37	37	<30	<30	<30	<30	39	39	41	41
18 Poplar Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	35	35	36	36	36	36	30	30	<30	<30	39	39
19 Poplar Street	North St Marys	Residential	48	43	43	43	53	36	39	37	39	38	40	<30	35	<30	35	38	40	31	36	<30	35	37	39	<30	35	<30	35	<30	35	41	42
20 Poplar Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	35	35	37	37	<30	<30	<30	<30	<30	<30	39	39
21 Poplar Street	North St Marys	Residential	48	43	43	43	53	36	39	37	39	38	40	<30	35	<30	35	<30	35	31	36	<30	35	37	39	<30	35	<30	35	39	40	41	42
22 Poplar Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	35	35	37	37	36	36	30	30	<30	<30	39	39
23 Poplar Street	North St Marys	Residential	48	43	43	43	53	35	35	<30	<30	37	37	<30	<30	<30	<30	<30	<30	31	31	<30	<30	37	37	<30	<30	<30	<30	39	39	41	41
24 Poplar Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	35	35	37	37	<30	<30	<30	<30	<30	<30	39	39
25 Poplar Street	North St Marys	Residential	48	43	43	43	53	35	38	<30	35	37	39	<30	35	<30	35	<30	35	30	36	35	38	37	39	40	41	34	38	39	40	41	42
26 Poplar Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	35	35	37	37	38	38	32	32	<30	<30	39	39
27 Poplar Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	<30	35	<30	35	<30	35	<30	35	<30	35	35	38	37	39	<30	35	<30	35	39	40	40	41
28 Poplar Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	35	35	37	37	38	38	32	32	<30	<30	39	39
29 Poplar Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	<30	35	<30	35	<30	35	<30	35	<30	35	<30	35	37	39	<30	35	<30	35	<30	35	40	41
30 Poplar Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	37	37	38	38	32	32	<30	<30	39	39
31 Poplar Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	<30	35	<30	35	37	39	<30	35	<30	35	<30	35	40	41
32 Poplar Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	37	37	38	38	32	32	<30	<30	39	39
33 Poplar Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	<30	35	<30	35	36	39	<30	35	<30	35	<30	35	40	41

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																					
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
34 Poplar Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	37	37	38	38	32	32	<30	<30	39	39
36 Poplar Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	37	37	38	38	32	32	<30	<30	39	39
37 Poplar Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	34	38	<30	35	<30	35	<30	35	<30	35	<30	35	36	39	<30	35	<30	35	<30	35	40	41
39 Poplar Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	34	38	<30	35	<30	35	<30	35	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	40	41
41 Poplar Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	38	38	32	32	<30	<30	39	39
43 Poplar Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	38	38	32	32	<30	<30	39	39
45 Poplar Street	North St Marys	Residential	48	43	43	43	53	<30	<30	30	30	31	31	<30	<30	31	31	31	31	<30	<30	30	30	<30	<30	38	38	32	32	<30	<30	39	39
47 Poplar Street	North St Marys	Residential	48	43	43	43	53	<30	<30	30	30	31	31	31	31	31	31	31	31	<30	<30	30	30	<30	<30	38	38	32	32	33	33	39	39
49 Poplar Street	North St Marys	Residential	48	43	43	43	53	<30	<30	30	30	31	31	31	31	<30	<30	30	30	<30	<30	<30	<30	<30	<30	38	38	32	32	33	33	39	39
52-54 Power Street	St Marys	Industrial	75	75	75	75	0	<30	<30	30	30	31	31	31	31	31	31	31	31	<30	<30	30	30	<30	<30	33	33	<30	<30	<30	<30	<30	<30
56-58 Power Street	St Marys	Industrial	75	75	75	75	0	<30	35	30	36	31	36	31	36	31	36	31	36	<30	35	30	36	<30	35	33	37	<30	35	<30	35	<30	35
60 Power Street	St Marys	Industrial	75	75	75	75	0	<30	35	<30	35	31	36	31	36	<30	35	31	36	<30	35	30	36	<30	35	33	37	<30	35	<30	35	<30	35
1-3 Princess Mary Street	St Marys	Commercial	70	70	70	70	0	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	37	37
2-6 Princess Mary Street	St Marys	Commercial	70	70	70	70	0	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	30	30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	38	38
1-3 Putland Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
1-7 Queen Street	St Marys	Commercial	70	70	70	70	0	57	61	58	61	58	61	63	64	63	64	62	63	52	59	62	63	56	60	58	61	52	59	61	63	61	63
4 Queen Street	St Marys	Commercial	70	70	70	70	0	56	60	57	61	58	61	61	63	61	63	60	62	52	59	60	62	55	60	57	61	51	59	61	63	60	62
12 Queen Street	St Marys	Commercial	70	70	70	70	0	57	61	58	61	59	62	64	65	64	65	63	64	53	59	63	64	58	61	58	61	52	59	62	63	61	63
17 Queen Street	St Marys	Commercial	70	70	70	70	0	56	59	57	60	58	60	63	64	63	64	62	63	52	57	62	63	55	59	56	59	50	57	61	62	60	61
21 Queen Street	St Marys	Commercial	70	70	70	70	0	56	59	57	60	57	60	62	63	62	63	61	62	52	57	61	62	55	59	56	59	50	57	60	61	60	61
22 Queen Street	St Marys	Commercial	70	70	70	70	0	56	60	57	60	58	61	63	64	63	64	62	63	52	58	62	63	57	60	58	61	52	58	61	62	60	62
24-26 Queen Street	St Marys	Commercial	70	70	70	70	0	56	60	57	60	58	61	63	64	63	64	62	63	52	58	62	63	57	60	58	61	52	58	61	62	61	62
25A Queen Street	St Marys	Commercial	70	70	70	70	0	54	58	55	58	55	58	60	61	60	61	59	60	50	56	59	60	52	57	54	58	48	56	58	60	58	60
27 Queen Street	St Marys	Hotel	70	70	70	60	0	54	58	55	58	56	59	59	60	59	60	58	60	50	56	58	60	53	57	54	58	48	56	58	60	58	60
30-32 Queen Street	St Marys	Commercial	70	70	70	70	0	56	60	57	60	57	60	62	63	62	63	61	62	51	58	61	62	56	60	58	61	52	58	60	62	60	62
34 Queen Street	St Marys	Commercial	70	70	70	70	0	55	59	55	59	56	59	60	61	60	61	60	61	50	57	59	61	55	59	56	59	50	57	59	61	59	61
36 Queen Street	St Marys	Medical	65	65	65	65	0	53	57	54	58	55	58	57	59	57	59	56	59	49	56	56	59	52	57	54	58	48	56	57	59	57	59
42 Queen Street	St Marys	Commercial	70	70	70	70	0	52	55	53	56	53	56	57	58	56	57	56	57	47	53	55	57	51	55	52	55	46	53	56	57	55	57
43 Queen Street	St Marys	Commercial	70	70	70	70	0	51	55	52	55	53	56	57	58	56	57	56	57	47	53	55	57	51	55	52	55	46	53	56	57	55	57
45 Queen Street	St Marys	Commercial	70	70	70	70	0	50	53	51	54	52	54	54	55	54	55	53	55	46	51	53	55	49	53	50	53	44	51	54	55	53	55
46 Queen Street	St Marys	Commercial	70	70	70	70	0	52	55	53	56	53	56	57	58	56	57	56	57	47	53	55	57	51	55	52	55	46	53	56	57	55	57
47 Queen Street	St Marys	Commercial	70	70	70	70	0	50	54	51	54	52	55	55	56	55	56	54	56	46	52	54	56	50	54	50	54	44	52	54	56	54	56
48 Queen Street	St Marys	Commercial	70	70	70	70	0	51	54	52	55	53	55	55	56	55	56	55	56	47	52	54	56	50	54	51	54	45	52	55	56	55	56
50 Queen Street	St Marys	Commercial	70	70	70	70	0	50	54	51	54	52	55	54	56	54	56	54	56	46	52	53	55	49	53	51	54	45	52	55	56	54	56
52 Queen Street	St Marys	Commercial	70	70	70	70	0	50	54	51	54	51	54	53	55	53	55	53	55	46	52	52	55	48	53	50	54	44	52	54	56	54	56
54 Queen Street	St Marys	Commercial	70	70	70	70	0	50	53	51	54	51	54	53	55	52	54	52	54	45	51	52	54	48	52	50	53	44	51	54	55	53	55
59 Queen Street	St Marys	Commercial	70	70	70	70	0	49	53	50	53	51	54	53	55	53	55	52	54	45	51	52	54	48	52	49	53	43	51	54	55	53	55

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																							
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
62 Queen Street	St Marys	Commercial	70	70	70	70	0	49	52	50	53	50	53	52	54	52	54	51	53	44	50	51	53	47	51	49	52	43	50	53	54	52	54
65B Queen Street	St Marys	Medical	65	65	65	65	0	47	51	48	51	49	52	50	52	50	52	50	52	43	49	49	52	45	50	47	51	41	49	52	53	51	53
66 Queen Street	St Marys	Commercial	70	70	70	70	0	48	52	49	52	50	53	51	53	51	53	51	53	44	50	50	53	47	51	49	52	43	50	52	54	52	54
67 Queen Street	St Marys	Commercial	70	70	70	70	0	47	50	48	51	48	51	50	52	49	51	49	51	42	48	49	51	45	49	47	50	41	48	51	52	50	52
71 Queen Street	St Marys	Commercial	70	70	70	70	0	46	50	47	50	48	51	49	51	49	51	48	51	42	48	48	51	44	49	46	50	40	48	50	52	50	52
72-80 Queen Street	St Marys	Commercial	70	70	70	70	0	47	51	48	51	49	52	51	53	50	52	50	52	43	49	49	52	46	50	48	51	42	49	52	53	51	53
75 Queen Street	St Marys	Commercial	70	70	70	70	0	46	49	47	50	47	50	49	51	48	50	48	50	41	47	48	50	44	48	46	49	40	47	50	51	49	51
79 Queen Street	St Marys	Commercial	70	70	70	70	0	45	48	46	49	47	49	49	50	48	50	48	50	41	46	48	50	44	48	46	49	40	46	50	51	49	50
82 Queen Street	St Marys	Commercial	70	70	70	70	0	45	48	46	49	47	49	48	50	48	50	47	49	41	46	47	49	44	48	46	49	40	46	49	50	49	50
84 Queen Street	St Marys	Commercial	70	70	70	70	0	44	48	45	48	46	49	47	49	47	49	46	49	40	46	46	49	43	47	45	48	39	46	49	50	48	50
85-87 Queen Street	St Marys	Commercial	70	70	70	70	0	45	48	46	49	46	49	48	50	48	50	47	49	41	46	47	49	44	48	46	49	40	46	49	50	49	50
89 Queen Street	St Marys	Medical	65	65	65	65	0	45	48	46	49	47	49	49	50	48	50	48	50	41	46	47	49	44	48	46	49	40	46	49	50	49	50
91 Queen Street	St Marys	Commercial	70	70	70	70	0	44	47	45	48	46	48	48	49	47	49	47	49	40	45	46	48	43	47	45	48	39	45	49	50	48	49
92 Queen Street	St Marys	Commercial	70	70	70	70	0	43	46	44	46	45	47	46	47	45	47	45	47	39	44	44	46	41	45	44	46	38	43	48	49	47	48
92A Queen Street	St Marys	Commercial	70	70	70	70	0	43	46	44	46	45	47	46	47	46	47	45	47	39	44	45	47	41	45	44	46	38	43	48	49	47	48
95 Queen Street	St Marys	Commercial	70	70	70	70	0	41	44	42	45	42	45	43	45	42	45	42	45	36	42	41	44	<30	41	41	44	35	42	45	46	44	46
98 Queen Street	St Marys	Commercial	70	70	70	70	0	43	43	44	44	45	45	46	46	46	46	45	45	39	39	45	45	<30	<30	44	44	38	38	48	48	47	47
100 Queen Street	St Marys	Commercial	70	70	70	70	0	43	43	44	44	45	45	46	46	46	46	45	45	39	39	45	45	43	43	44	44	38	38	48	48	47	47
102 Queen Street	St Marys	Commercial	70	70	70	70	0	43	46	44	46	44	46	46	47	46	47	45	47	39	44	45	47	41	45	44	46	38	43	47	48	47	48
103 Queen Street	St Marys	Commercial	70	70	70	70	0	43	46	43	46	44	46	45	47	45	47	44	46	38	43	44	46	41	45	43	46	37	43	47	48	46	47
104 Queen Street	St Marys	Commercial	70	70	70	70	0	42	45	43	45	43	45	44	46	43	45	43	45	37	42	42	45	40	44	41	44	35	42	46	47	45	46
105 Queen Street	St Marys	Commercial	70	70	70	70	0	42	45	43	46	43	46	44	46	44	46	44	46	38	43	43	46	40	44	41	45	35	43	46	47	46	47
106 Queen Street	St Marys	Commercial	70	70	70	70	0	42	45	43	46	44	46	45	47	44	46	44	46	38	43	44	46	40	44	43	46	37	43	46	47	46	47
107 Queen Street	St Marys	Commercial	70	70	70	70	0	42	45	43	46	43	46	44	46	44	46	43	46	37	43	43	46	40	44	41	45	35	43	46	47	45	47
109 Queen Street	St Marys	Commercial	70	70	70	70	0	42	45	42	45	43	46	44	46	43	46	43	46	37	43	43	46	40	44	41	45	35	43	46	47	45	47
110 Queen Street	St Marys	Commercial	70	70	70	70	0	42	45	43	45	43	45	44	46	44	46	43	45	37	42	43	45	41	44	41	44	35	42	46	47	46	47
112 Queen Street	St Marys	Commercial	70	70	70	70	0	41	44	41	44	42	44	43	45	42	44	42	44	36	41	41	44	39	43	41	44	35	41	45	46	44	45
118 Queen Street	St Marys	Commercial	70	70	70	70	0	41	44	42	45	43	45	43	45	43	45	43	45	37	42	42	45	40	44	41	44	35	42	45	46	45	46
124 Queen Street	St Marys	Commercial	70	70	70	70	0	41	44	42	44	42	44	43	45	43	45	42	44	37	42	42	44	40	43	41	44	35	41	45	46	45	46
126 Queen Street	St Marys	Commercial	70	70	70	70	0	41	44	42	44	42	44	44	45	43	45	43	45	37	42	42	44	40	43	41	44	35	41	45	46	45	46
129 Queen Street	St Marys	Commercial	70	70	70	70	0	41	44	42	45	43	45	44	46	44	46	43	45	37	42	43	45	40	44	41	44	35	42	45	46	45	46
130 Queen Street	St Marys	Commercial	70	70	70	70	0	41	44	42	44	42	44	43	45	43	45	43	45	37	42	42	44	40	43	41	44	35	41	45	46	45	46
131 Queen Street	St Marys	Commercial	70	70	70	70	0	40	43	41	44	41	44	42	44	42	44	41	44	36	41	41	44	37	42	40	43	34	41	44	45	44	45
135 Queen Street	St Marys	Commercial	70	70	70	70	0	40	43	41	44	41	44	42	44	42	44	41	44	36	41	41	44	37	42	40	43	34	41	44	45	42	44
136 Queen Street	St Marys	Commercial	70	70	70	70	0	41	44	42	44	42	44	44	45	43	45	43	45	37	42	42	44	40	43	41	44	35	41	45	46	45	46
144 Queen Street	St Marys	Commercial	70	70	70	70	0	39	39	40	40	41	41	42	42	42	42	41	41	35	35	41	41	<30	<30	40	40	34	34	44	44	<30	<30
145-147 Queen Street	St Marys	Commercial	70	70	70	70	0	40	43	41	44	41	44	42	44	42	44	42	44	36	41	41	44	37	42	41	44	35	41	44	45	44	45
150 Queen Street	St Marys	Commercial	70	70	70	70	0	39	42	40	42	41	43	42	43	42	43	41	43	35	40	41	43	39	42	41	43	35	40	44	45	<30	38
150B Queen Street	St Marys	Commercial	70	70	70	70	0	39	42	40	42	41	43	42	43	41	43	41	43	35	40	40	42	37	41	40	42	34	39	44	45	42	43
152 Queen Street	St Marys	Commercial	70	70	70	70	0	39	42	40	42	41	43	42	43	42	43	41	43	35	40	41	43	39	42	40	42	34	39	44	45	42	43

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																					
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
156-158 Queen Street	St Marys	Commercial	70	70	70	70	0	39	42	40	42	41	43	42	43	41	43	41	43	35	40	40	42	37	41	40	42	34	39	43	44	42	43
159 Queen Street	St Marys	Commercial	70	70	70	70	0	40	42	41	43	41	43	43	44	42	43	42	43	36	40	41	43	39	42	41	43	35	40	44	45	44	45
160 Queen Street	St Marys	Commercial	70	70	70	70	0	39	42	40	42	41	43	42	43	41	43	41	43	35	40	40	42	39	42	40	42	34	39	43	44	42	43
166 Queen Street	St Marys	Commercial	70	70	70	70	0	39	42	40	42	40	42	41	43	41	43	41	43	34	39	40	42	39	42	40	42	34	39	43	44	42	43
170 Queen Street	St Marys	Commercial	70	70	70	70	0	39	42	40	42	40	42	41	43	41	43	41	43	34	39	40	42	39	42	40	42	34	39	43	44	42	43
171 Queen Street	St Marys	Commercial	70	70	70	70	0	39	42	40	42	41	43	42	43	42	43	41	43	35	40	41	43	37	41	40	42	34	39	44	45	42	43
178-182 Queen Street	St Marys	Commercial	70	70	70	70	0	38	41	39	41	40	42	39	41	40	42	39	41	34	39	39	41	37	40	40	42	34	39	42	43	42	43
181 Queen Street	St Marys	Medical	65	65	65	65	0	38	41	39	41	40	42	39	41	40	42	39	41	34	39	39	41	37	40	38	41	32	38	42	43	42	43
185-187 Queen Street	St Marys	Commercial	70	70	70	70	0	37	39	38	40	38	40	39	40	39	40	38	40	33	37	<30	35	36	39	38	40	32	37	41	42	41	42
188 Queen Street	St Marys	Commercial	70	70	70	70	0	37	39	38	40	38	40	39	40	39	40	39	40	33	37	<30	35	37	39	38	40	32	37	41	42	41	42
192 Queen Street	St Marys	Commercial	70	70	70	70	0	37	39	38	40	38	40	39	40	39	40	39	40	33	37	<30	35	37	39	38	40	32	37	41	42	41	42
195 Queen Street	St Marys	Commercial	70	70	70	70	0	37	39	38	40	38	40	39	40	39	40	38	40	33	37	<30	35	36	39	38	40	32	37	41	42	41	42
199 Queen Street	St Marys	Commercial	70	70	70	70	0	37	39	38	40	38	40	39	40	39	40	39	40	33	37	<30	35	36	39	38	40	32	37	41	42	41	42
200 Queen Street	St Marys	Commercial	70	70	70	70	0	36	39	37	39	38	40	39	40	38	40	38	40	32	37	35	38	37	39	38	40	32	37	41	42	41	42
203 Queen Street	St Marys	Commercial	70	70	70	70	0	37	39	38	40	38	40	39	40	39	40	39	40	33	37	<30	35	37	39	38	40	32	37	41	42	41	42
204 Queen Street	St Marys	Commercial	70	70	70	70	0	<30	<30	30	33	35	36	31	33	31	33	33	34	<30	<30	30	33	<30	<30	33	34	<30	<30	33	34	37	38
205B Queen Street	St Marys	Commercial	70	70	70	70	0	37	39	38	40	38	40	39	40	39	40	39	40	33	37	39	40	37	39	38	40	32	37	41	42	41	42
209 Queen Street	St Marys	Commercial	70	70	70	70	0	37	39	37	39	38	40	39	40	38	40	38	40	32	37	35	38	35	38	36	39	30	36	41	42	40	41
210 Queen Street	St Marys	Commercial	70	70	70	70	0	<30	<30	30	33	34	35	31	33	31	33	33	34	<30	<30	30	33	<30	<30	33	34	<30	<30	33	34	37	38
212 Queen Street	St Marys	Commercial	70	70	70	70	0	<30	<30	30	33	31	33	31	33	31	33	31	33	<30	<30	30	33	<30	<30	33	34	<30	<30	33	34	33	34
216 Queen Street	St Marys	Commercial	70	70	70	70	0	35	36	30	33	35	36	31	33	31	33	33	34	30	33	35	36	<30	<30	36	37	30	33	39	39	39	39
217 Queen Street	St Marys	Commercial	70	70	70	70	0	36	39	37	39	37	39	31	36	38	40	33	37	31	36	35	38	35	38	36	39	30	36	39	40	40	41
223 Queen Street	St Marys	Commercial	70	70	70	70	0	36	37	30	33	37	38	31	33	31	33	33	34	31	33	35	36	35	36	36	37	30	33	39	39	40	40
225-227 Queen Street	St Marys	Commercial	70	70	70	70	0	35	35	<30	<30	37	37	31	31	31	31	33	33	31	31	35	35	35	35	36	36	30	30	39	39	39	39
231 Queen Street	St Marys	Commercial	70	70	70	70	0	35	35	<30	<30	37	37	<30	<30	<30	<30	<30	<30	31	31	35	35	35	35	36	36	30	30	39	39	39	39
233 Queen Street	St Marys	Commercial	70	70	70	70	0	35	35	<30	<30	35	35	<30	<30	<30	<30	<30	<30	31	31	35	35	35	35	36	36	30	30	39	39	39	39
235 Queen Street	St Marys	Commercial	70	70	70	70	0	35	35	<30	<30	37	37	<30	<30	<30	<30	<30	<30	31	31	35	35	35	35	36	36	30	30	39	39	39	39
237 Queen Street	St Marys	Commercial	70	70	70	70	0	35	35	<30	<30	37	37	<30	<30	<30	<30	33	33	31	31	35	35	35	35	36	36	30	30	39	39	39	39
239 Queen Street	St Marys	Commercial	70	70	70	70	0	35	35	<30	<30	37	37	<30	<30	<30	<30	33	33	31	31	35	35	35	35	36	36	30	30	39	39	39	39
241 Queen Street	St Marys	Commercial	70	70	70	70	0	35	35	<30	<30	35	35	<30	<30	<30	<30	33	33	31	31	35	35	<30	<30	36	36	30	30	39	39	39	39
245 Queen Street	St Marys	Commercial	70	70	70	70	0	<30	<30	<30	<30	35	35	<30	<30	<30	<30	33	33	30	30	35	35	<30	<30	33	33	<30	<30	<30	<30	38	38
249 Queen Street	St Marys	Commercial	70	70	70	70	0	<30	<30	<30	<30	35	35	<30	<30	<30	<30	33	33	30	30	35	35	<30	<30	33	33	<30	<30	<30	<30	38	38
1 Ross Place	St Marys	Residential	47	42	42	41	52	48	52	49	52	50	53	53	54	52	54	52	54	43	50	52	54	49	52	50	53	44	50	52	54	53	54
2 Ross Place	St Marys	Residential	47	42	42	41	52	51	56	52	56	53	57	57	59	56	58	56	58	47	55	55	58	52	56	54	57	48	55	56	58	56	58
3 Ross Place	St Marys	Residential	47	42	42	41	52	48	52	49	53	49	53	53	55	52	54	52	54	43	51	51	54	49	53	50	53	44	51	52	54	53	55
3B Ross Place	St Marys	Residential	47	42	42	41	52	48	52	49	52	50	53	53	54	53	54	52	54	44	50	52	54	49	52	51	53	45	50	52	54	53	54
4 Ross Place	St Marys	Residential	47	42	42	41	52	52	57	53	57	54	58	57	59	57	59	56	59	48	56	56	59	53	57	55	58	49	56	57	59	57	59
5B Ross Place	St Marys	Residential	47	42	42	41	52	48	52	49	53	50	53	53	55	52	54	52	54	43	51	51	54	49	53	50	53	44	51	52	54	53	55
5A Ross Place	St Marys	Residential	47	42	42	41	52	48	52	49	53	50	53	53	55	53	55	52	54	44	51	52	54	49	53	51	54	45	51	53	55	53	55
6 Ross Place	St Marys	Residential	47	42	42	41	52	52	56	53	57	53	57	57	59	56	58	56	58	47	55	55	58	52	56	54	57	48	55	56	58	57	59

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																					
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
7 Ross Place	St Marys	Residential	47	42	42	41	52	48	52	49	52	50	53	53	54	52	54	52	54	44	50	51	53	49	52	51	53	45	50	53	54	53	54
8 Ross Place	St Marys	Residential	47	42	42	41	52	52	56	53	57	54	57	57	59	56	58	56	58	47	55	55	58	53	57	55	58	49	55	56	58	57	59
10 Ross Place	St Marys	Residential	47	42	42	41	52	51	56	52	56	53	57	56	58	56	58	55	58	47	55	55	58	52	56	54	57	48	55	56	58	56	58
12 Ross Place	St Marys	Residential	47	42	42	41	52	49	53	50	54	50	54	52	55	51	54	51	54	44	52	50	54	48	53	50	54	44	52	53	55	53	55
14 Ross Place	St Marys	Residential	47	42	42	41	52	49	54	49	54	50	54	52	55	52	55	51	55	44	53	51	55	46	53	50	54	44	53	53	56	53	56
16 Ross Place	St Marys	Residential	47	42	42	41	52	47	52	48	52	49	53	50	53	50	53	49	53	43	51	49	53	47	52	50	53	44	51	51	54	52	54
4-6 Sainsbury Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
8 Sainsbury Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
1 Stapleton Parade	St Marys	Residential	47	42	42	41	52	36	39	37	39	37	39	39	40	38	40	38	40	32	37	<30	35	<30	35	38	40	32	37	<30	35	40	41
2 Stapleton Parade	St Marys	Residential	47	42	42	41	52	36	36	37	37	38	38	39	39	38	38	38	38	32	32	<30	<30	<30	<30	38	38	32	32	<30	<30	41	41
3-5 Stapleton Parade	St Marys	Residential	47	42	42	41	52	37	37	38	38	38	38	39	39	39	39	38	38	32	32	<30	<30	35	35	38	38	32	32	41	41	41	41
4 Stapleton Parade	St Marys	Residential	47	42	42	41	52	37	37	38	38	38	38	39	39	39	39	38	38	33	33	<30	<30	35	35	38	38	32	32	41	41	41	41
5 Stapleton Parade	St Marys	Residential	47	42	42	41	52	37	40	38	41	38	41	39	41	40	42	39	41	33	38	39	41	36	40	<30	37	<30	37	41	42	42	43
6 Stapleton Parade	St Marys	Residential	47	42	42	41	52	37	41	38	41	38	41	39	42	39	42	39	42	33	39	39	42	35	40	<30	38	<30	38	41	43	42	43
7 Stapleton Parade	St Marys	Residential	47	42	42	41	52	38	41	39	42	<30	38	39	42	40	42	39	42	33	39	39	42	36	40	40	42	34	39	42	43	42	43
8 Stapleton Parade	St Marys	Residential	47	42	42	41	52	38	41	39	42	<30	38	39	42	39	42	39	42	33	39	39	42	36	40	<30	38	<30	38	42	43	42	43
9 Stapleton Parade	St Marys	Residential	47	42	42	41	52	38	41	39	42	<30	38	<30	38	40	42	39	42	34	39	39	42	36	40	40	42	34	39	42	43	42	43
10 Stapleton Parade	St Marys	Residential	47	42	42	41	52	38	41	39	42	40	42	<30	38	40	42	39	42	34	39	39	42	36	40	40	42	34	39	42	43	42	43
11 Stapleton Parade	St Marys	Residential	47	42	42	41	52	39	42	39	42	40	42	41	43	40	42	39	42	34	39	39	42	37	41	40	42	34	39	43	44	<30	38
12 Stapleton Parade	St Marys	Residential	47	42	42	41	52	39	43	40	44	40	44	41	44	41	44	41	44	35	42	40	44	37	42	41	44	35	42	43	45	<30	41
13 Stapleton Parade	St Marys	Residential	47	42	42	41	52	39	43	40	44	41	44	42	45	42	45	41	44	35	42	41	44	37	42	41	44	35	42	43	45	44	46
14 Stapleton Parade	St Marys	Residential	47	42	42	41	52	40	40	41	41	41	41	43	43	42	42	42	42	35	35	41	41	37	37	41	41	35	35	44	44	44	44
15 Stapleton Parade	St Marys	Residential	47	42	42	41	52	40	40	41	41	41	41	43	43	43	43	42	42	36	36	42	42	39	39	<30	<30	<30	<30	44	44	44	44
1 Station Street	St Marys	Residential	47	42	42	41	52	52	56	53	57	54	57	54	57	54	57	54	57	48	55	53	57	52	56	53	57	47	55	56	58	56	58
2 Station Street	St Marys	Residential	47	42	42	41	52	54	58	55	59	55	59	56	59	56	59	56	59	49	57	55	59	54	58	55	59	49	57	58	60	58	60
3 Station Street	St Marys	Residential	47	42	42	41	52	56	61	57	62	58	62	59	63	59	63	59	63	51	61	58	62	57	62	58	62	52	61	60	63	61	64
19 Swanston Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
8 Telford Place	North St Marys	Industrial	75	75	75	75	0	42	42	43	43	44	44	46	46	45	45	45	45	38	38	44	44	45	45	45	45	39	39	47	47	47	47
10 Telford Place	North St Marys	Industrial	75	75	75	75	0	41	46	42	46	43	47	45	48	45	48	45	48	37	45	44	47	44	47	44	47	38	45	46	48	46	48
12 Telford Place	North St Marys	Industrial	75	75	75	75	0	41	46	42	46	43	47	46	48	45	48	45	48	37	45	44	47	44	47	44	47	38	45	46	48	46	48
14 Telford Place	North St Marys	Industrial	75	75	75	75	0	39	43	40	43	41	44	42	44	41	44	41	44	34	41	40	43	41	44	41	44	35	41	43	45	44	45
2 The Kingsway	St Marys	Public	0	0	0	0	0	37	39	38	40	38	40	41	42	41	42	<30	35	33	37	40	41	36	39	<30	35	<30	35	41	42	41	42
2 The Kingsway	St Marys	Active Recreation	65	65	65	65	0	35	38	<30	35	37	39	<30	35	38	40	<30	35	31	36	<30	35	<30	35	36	39	30	36	39	40	39	40
3 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32	32	32
5 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32	32	32
6 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
7 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	30	30	<30	<30	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32	32	32
8 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	31	31
8A Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	31	31

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																							
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
9 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	30	30	<30	<30	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32	32	32
10 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	31	31
11 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	30	30	<30	<30	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32	32	32
12 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32	31	31
13 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	30	30	<30	<30	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	33	33
14 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32	31	31
15 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	30	30	31	31	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	33	33
16 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32	32	32
17 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	30	30	31	31	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	33	33
18 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32	32	32
19 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	30	30	31	31	31	31	31	31	31	31	<30	<30	30	30	<30	<30	<30	<30	<30	<30	33	33	33	33
20 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32	32	32
21 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
22 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32	32	32
23 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
24 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	30	33	31	33	31	33	31	33	31	33	<30	<30	30	33	<30	<30	<30	<30	<30	<30	<30	<30	33	34
25 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
26 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	31	31	31	31	<30	<30	30	30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
27 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
28 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	31	31	31	31	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
29 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
30 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	31	31	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
31 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
32 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
33 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
34 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32	<30	<30	<30	<30	<30	<30
35 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32	<30	<30	<30	<30	<30	<30
36 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	32	32	<30	<30	<30	<30	<30	<30
37 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	32	32	<30	<30	<30	<30	<30	<30
38 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	32	32	<30	<30	<30	<30	<30	<30
39 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	32	32	<30	<30	<30	<30	<30	<30
40 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	32	32	<30	<30	<30	<30	<30	<30
41 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	32	32	<30	<30	<30	<30	<30	<30
42 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	32	32	<30	<30	<30	<30	<30	<30
43 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	37	37
44 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	32	32	<30	<30	<30	<30	<30	<30
45 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	37	37
46 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	37	37
47 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	30	36	<30	35	<30	35	33	37	<30	35	<30	35	37	39
48 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	33	33	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	37	37

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																					
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
49 Thompson Avenue	St Marys	Residential	47	42	42	41	52	35	38	<30	35	37	39	<30	35	<30	35	<30	35	31	36	35	38	<30	35	<30	35	<30	35	39	40	39	40
50 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	33	33	<30	<30	<30	<30	37	37
51 Thompson Avenue	St Marys	Residential	47	42	42	41	52	35	38	<30	35	37	39	<30	35	<30	35	<30	35	31	36	35	38	<30	35	<30	35	<30	35	39	40	38	40
52 Thompson Avenue	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	37	37
53 Thompson Avenue	St Marys	Residential	47	42	42	41	52	36	40	37	40	37	40	<30	37	<30	37	<30	37	32	38	35	39	<30	37	<30	37	<30	37	39	41	39	41
54 Thompson Avenue	St Marys	Residential	47	42	42	41	52	35	38	<30	35	37	39	<30	35	<30	35	<30	35	31	36	35	38	<30	35	36	39	30	36	39	40	39	40
56 Thompson Avenue	St Marys	Residential	47	42	42	41	52	35	38	<30	35	37	39	<30	35	<30	35	<30	35	31	36	35	38	<30	35	<30	35	<30	35	39	40	39	40
58 Thompson Avenue	St Marys	Residential	47	42	42	41	52	35	38	<30	35	37	39	<30	35	<30	35	<30	35	31	36	35	38	<30	35	<30	35	<30	35	39	40	39	40
60 Thompson Avenue	St Marys	Residential	47	42	42	41	52	36	40	37	40	38	41	<30	37	<30	37	<30	37	32	38	35	39	35	39	36	40	30	38	39	41	40	42
41 Tobruk Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
1 Waratah Street	St Marys	Residential	47	42	42	41	52	42	45	43	46	43	46	45	47	44	46	44	46	38	43	44	46	40	44	41	45	35	43	46	47	45	47
3 Waratah Street	St Marys	Residential	47	42	42	41	52	42	45	43	46	43	46	44	46	44	46	43	46	38	43	43	46	39	44	41	45	35	43	46	47	45	47
5 Waratah Street	St Marys	Residential	47	42	42	41	52	41	45	42	45	43	46	44	46	44	46	43	46	37	43	43	46	39	44	41	45	35	43	46	47	45	47
7 Waratah Street	St Marys	Residential	47	42	42	41	52	41	45	42	45	42	45	44	46	44	46	43	46	37	43	43	46	39	44	41	45	35	43	45	47	45	47
7A Waratah Street	St Marys	Residential	47	42	42	41	52	42	45	42	45	43	46	45	47	44	46	44	46	37	43	43	46	39	44	41	45	35	43	46	47	45	47
7B Waratah Street	St Marys	Residential	47	42	42	41	52	42	45	43	46	43	46	46	47	46	47	45	47	38	43	45	47	41	45	<30	42	<30	42	46	47	46	47
9 Waratah Street	St Marys	Residential	47	42	42	41	52	42	45	43	46	43	46	46	47	46	47	45	47	38	43	45	47	41	45	<30	42	<30	42	46	47	45	47
11 Waratah Street	St Marys	Residential	47	42	42	41	52	42	45	43	46	43	46	46	47	46	47	45	47	38	43	45	47	41	45	<30	42	<30	42	46	47	45	47
13 Waratah Street	St Marys	Residential	47	42	42	41	52	42	45	42	45	43	46	46	47	45	47	45	47	37	43	44	46	40	44	41	45	35	43	46	47	45	47
15 Waratah Street	St Marys	Residential	47	42	42	41	52	41	44	42	45	43	45	45	46	45	46	44	46	37	42	44	46	40	44	41	44	35	42	46	47	45	46
3 Warramunga Street	St Marys	Residential	47	42	42	41	52	38	41	39	41	40	42	42	43	41	42	41	42	33	38	40	42	39	41	41	42	35	39	42	43	<30	37
6 Warrego Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
12 Warrego Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
14 Warrego Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
16 Warrego Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	34	38	<30	35	<30	35	<30	35	<30	35	35	38	36	39	36	39	30	36	<30	35	38	40
18 Warrego Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
20 Warrego Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
22 Warrego Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
24 Warrego Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
26 Warrego Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
28 Warrego Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
30 Warrego Street	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	36	36	36	36	30	30	<30	<30	38	38
1 Wattle Avenue	North St Marys	Residential	48	43	43	43	53	36	36	37	37	38	38	39	39	39	39	39	39	31	31	<30	<30	<30	<30	38	38	32	32	<30	<30	41	41
3 Wattle Avenue	North St Marys	Residential	48	43	43	43	53	35	38	<30	35	37	39	39	40	38	40	38	40	31	36	<30	35	37	39	38	40	32	37	39	40	40	41
5 Wattle Avenue	North St Marys	Residential	48	43	43	43	53	35	38	<30	35	37	39	39	40	38	40	38	40	31	36	<30	35	37	39	38	40	32	37	39	40	40	41
7 Wattle Avenue	North St Marys	Residential	48	43	43	43	53	35	38	<30	35	37	39	<30	35	38	40	38	40	30	36	<30	35	37	39	38	40	32	37	39	40	40	41

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																							
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
9 Wattle Avenue	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	30	30	<30	<30	36	36	<30	<30	<30	<30	39	39	39	39
11 Wattle Avenue	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	36	36	36	36	30	30	<30	<30	39	39
13 Wattle Avenue	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	35	35	36	36	36	36	30	30	<30	<30	39	39
15 Wattle Avenue	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	35	35	35	35	36	36	30	30	<30	<30	38	38
17 Wattle Avenue	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	35	35	35	35	36	36	30	30	<30	<30	38	38
18 Wattle Avenue	North St Marys	Residential	48	43	43	43	53	36	39	37	39	38	40	39	40	39	40	39	40	31	36	35	38	37	39	38	40	32	37	41	42	41	42
19 Wattle Avenue	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	35	35	35	35	36	36	30	30	<30	<30	38	38
20 Wattle Avenue	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	35	35	36	36	36	36	30	30	<30	<30	38	38
21 Wattle Avenue	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
22 Wattle Avenue	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	35	35	36	36	36	36	30	30	<30	<30	39	39
24 Wattle Avenue	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	35	35	35	35	36	36	30	30	<30	<30	38	38
26 Wattle Avenue	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	35	35	35	35	36	36	30	30	<30	<30	38	38
28 Wattle Avenue	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
1 Wilga Street	North St Marys	Residential	48	43	43	43	53	35	38	<30	35	37	39	<30	35	<30	35	<30	35	31	36	35	38	37	39	<30	35	<30	35	39	40	41	42
2 Wilga Street	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	<30	35	<30	35	<30	35	<30	35	30	36	35	38	37	39	<30	35	<30	35	39	40	40	41
3 Wilga Street	North St Marys	Residential	48	43	43	43	53	35	38	<30	35	37	39	<30	35	<30	35	<30	35	31	36	<30	35	37	39	<30	35	<30	35	<30	35	41	42
4 Wilga Street	North St Marys	Residential	48	43	43	43	53	35	38	<30	35	37	39	<30	35	<30	35	<30	35	30	36	35	38	37	39	<30	35	<30	35	39	40	41	42
5 Wilga Street	North St Marys	Residential	48	43	43	43	53	36	39	37	39	38	40	<30	35	<30	35	<30	35	31	36	<30	35	<30	35	<30	35	<30	35	<30	35	41	42
6 Wilga Street	North St Marys	Residential	48	43	43	43	53	35	38	<30	35	37	39	<30	35	<30	35	<30	35	30	36	35	38	<30	35	40	41	34	38	39	40	41	42
7 Wilga Street	North St Marys	Residential	48	43	43	43	53	36	39	37	39	38	40	<30	35	<30	35	38	40	31	36	<30	35	<30	35	40	41	34	38	<30	35	42	43
8 Wilga Street	North St Marys	Residential	48	43	43	43	53	35	38	<30	35	38	40	<30	35	<30	35	<30	35	31	36	<30	35	<30	35	40	41	34	38	<30	35	41	42
9 Wilga Street	North St Marys	Residential	48	43	43	43	53	36	39	37	39	38	40	<30	35	38	40	38	40	32	37	<30	35	<30	35	40	41	34	38	41	42	42	43
10 Wilga Street	North St Marys	Residential	48	43	43	43	53	35	38	<30	35	38	40	<30	35	<30	35	38	40	31	36	<30	35	39	40	40	41	34	38	<30	35	42	43
15 Willow Road	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	30	30	35	35	37	37	<30	<30	<30	<30	39	39	39	39
17 Willow Road	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	37	39	<30	35	<30	35	<30	35	30	36	35	38	37	39	<30	35	<30	35	39	40	39	40
19 Willow Road	North St Marys	Residential	48	43	43	43	53	<30	35	<30	35	37	39	<30	35	<30	35	<30	35	30	36	35	38	37	39	36	39	30	36	39	40	39	40
22 Willow Road	North St Marys	Residential	48	43	43	43	53	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	37	37
24-40 Willow Road	North St Marys	Educational	55	55	55	55	0	<30	35	<30	35	35	38	<30	35	<30	35	<30	35	30	36	35	38	36	39	36	39	30	36	39	40	39	40
24-40 Willow Road	North St Marys	Child Care	50	50	50	50	0	36	40	37	40	38	41	39	41	38	41	38	41	32	38	<30	37	37	40	38	41	32	38	41	42	41	42
1 Yeramba Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	38	38
2 Yeramba Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	37	37
3 Yeramba Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	37	37
4 Yeramba Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	35	35	<30	<30	<30	<30	<30	<30	<30	<30	37	37

Street Address	Suburb	Receiver Type	Noise Management Level					Predicted Noise Level																							
			Standard Hours	Out-of-Hours Works			Sleep Disturbance	w.002		w.003		w.004		w.005		w.006		w.007		w.008		w.009		w.010		w.011		w.012		w.013		w.014	
			D	D	E	N	N	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}
6 Yeramba Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	35	35	<30	<30	36	36	30	30	<30	<30	37	37
9 Yeramba Street	St Marys	Residential	47	42	42	41	52	<30	<30	<30	<30	34	34	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	35	35	36	36	30	30	<30	<30	38	38

Attachment T: Trigger Action Response Plan (TARPs)

	Normal	Trigger Level 1 (T1)	Trigger Level 2 (T2)	Trigger Level 3 (T3)
TRIGGER DESCRIPTION	**Wind**: Light to gentle breeze (20km/h). Not causing wind generated dust offsite. Dust generation is managed with normal controls. No impact to working at heights or lifting activities. **Rain:** No rain forecast. No recent flooding impacting works. **Lightning:** No lightning or signs of lightning within area.	**Wind:** Strong wind with wind gusts up to 45km/h, 12.5m/s creating a risk that is not controlled with existing measures. **Rain:** Light rainfall (50–90% chance 25mm) in immediate catchment area with continuing rain forecast. Generally, no potential for significant change to watercourse height. **Lightning:** Lightning activity greater than 30km away. **Other:** Weather warning from BOM.	**Level 1 triggers plus:** **Wind:** Strong wind to strong gale force winds of 45km/h to 87km/h, 13–24m/s. **Rain:** Forecast significant rainfall (50–90% chance of 25–100mm) in immediate catchment area. Rain/storms forecast in catchment areas. Potential for change to watercourse height that would impact permanent and/or temporary works or environmental controls. No loss of access to site. **Lightning:** Lightning activity 10–30km away. **Other:** Severe weather warning from BOM.	**Level 2 triggers plus:** **Wind:** Storm force winds in excessive of 88km/h, 25m/s causing immediate risk. **Rain:** Current and immediate risk of heavy downpour resulting (greater than 100mm) in localised flooding. Current/immediate risk of waterways flooding. Long term > 1 day loss of site access. **Lightning:** Lightning <5km away.

Position	Normal	Trigger Level 1 (T1)	Trigger Level 2 (T2)	Trigger Level 3 (T3)
ENVIRONMENTAL STAFF	No variation from standard HSE management activities.	Monitor and communicate information about inclement weather to Project Leader, Package Managers, Construction Managers and Supervisors.	• Monitor and communicate information about inclement weather to Project Leader • Provide advice on the preparation works and additional environmental controls • Conduct inspections as required.	• Monitor and communicate information about inclement weather to Project Leader • Provide advice on the preparation works and additional environmental controls • Conduct inspections as required.
PROJECT LEAD	No variation from standard project managerial activities.	Communicate status to all package, construction managers, supervisors in the absence of the Environmental Staff.	• Communicate status to all package, construction managers, supervisors in the absence of the Environmental Staff. • Participate in planning session with relevant staff (package, construction managers, supervisors, function leads) where required. • Consider mobilisation of Project Emergency Management Team (PEMT) • Communicate status to PEMT Leader.	• Communicate status to all section managers in the absence of the Environmental Staff. • Participate in planning session with relevant staff (package, construction managers, supervisors, function leads) where required. • Mobilise PEMT • Communicate status to PEMT Leader.
PACKAGE, CONSTRUCTION MANAGERS, SUPERVISORS	No variation from standard delivery management activities.	• Communicate status to contractors • Ensure new environmental conditions are assessed by contractors	• Communicate status to contractors • Conduct planning session with contractors and develop action plan for additional environmental controls	• Communicate status to contractors • Ensure contractors' emergency management plans are activated • Conduct planning session with contractor and develop action plan

		• Identify temporary works at risk in event of escalation • Communicate status to Project Leader & Enviro Team	• Ensure contractors' emergency management plans are ready to be activated • Monitor progress of contractors' close out of action plan • Communicate status to Project Leader & Enviro Team.	for additional environmental controls • Monitor progress of contractors' close out of action plan • Communicate status to Project Leader & Enviro Team.
HS/E STAFF	No variation from standard HSE protocols.	Ensure site emergency response protocols are followed.	Ensure site emergency response protocols are followed.	Ensure site emergency response protocols are followed.