Construction Ancillary Facilities Management Plan

Project Name: Sydney Metro City & Southwest
Northern Corridor Works Project

Location: Sydney, NSW, Australia

Project Number: K38

Client: Transport for New South Wales

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Latest amendments are summarised in the table below.

Revisions

Revision	Description	Reviewed	Approved	Date
Rev01	Preparation of Construction Ancillary Facilities Management Plan	CS	AD	23/11/2017
Rev02	Document updated following review by ER, AA and Sydney Metro	CS	AD	22/12/2017
Rev03	Document updated following review by ER, AA and Sydney Metro	CS	AD	6/02/2018
Rev04	Document updated to include Elizabeth Street Ancillary Facility	CS	AD	01/03/2018
Rev05	Document updated following review by ER, AA and Sydney Metro	CS	AD	14/03/2018
Rev06	Document updated following comments from DPE	CS	AD	19/04/2018
Rev07	Document updated following comments from DPE	CS	AD	08/05/2018

Management Reviews

Review Date	Details	Reviewed By

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Conditions of Approval relevant to the CAFMP

CoA	Obligation	Document Reference
A9	Where the terms of this approval require consultation with identified parties, details of the consultation undertaken, matters raised by the parties, and how the matters were considered must accompany the strategies, plans, programs, Partial reviews, audits, protocols and the like submitted to the Secretary.	Stakeholders consulted as per CoA A17. Refer to section 1.4 and Appendix B – Stakeholder tracker.
A16	Ancillary facilities that are not identified by description and location in the EIS as amended by the documents listed in A1, must meet the following criteria, unless otherwise approved by the Secretary: (a) the facility is development of a type that would, if it were not for the purpose of the CSSI, otherwise be exempt or complying development; or (b) the facility is located as follows: i. at least 50 metres from any waterway unless an erosion and sediment control plan is prepared and implemented so as not to adversely affect water quality in the waterway in accordance with Managing Urban Stormwater series; ii. within or adjacent to land upon which the CSSI is being carried out unless it can be demonstrated that performance criteria established in this approval can be met and that there will be a reduction in impact at other sites and a reduction in the construction program; iii. with ready access to a road network; iv. to prevent heavy vehicles travelling on local streets or through residential areas in order to access the facility, except as identified in the EIS and amended by the documents listed in A1; v. on level land; vi. so as to be in accordance with the Interim Construction Noise Guideline (DECC 2009) or as otherwise agreed in writing with affected landowners and occupiers; vii. so as not to require vegetation clearing beyond the extent of clearing approved under other terms of this approval except as approved by the ER as minor clearing; viii. so as not to have any impact on heritage items (including areas of archaeological sensitivity) beyond the impacts identified, assessed and approved under other terms of this approval; ix. so as not to unreasonably interfere with lawful uses of adjacent properties that are being carried out at the date upon which construction or establishment of the facility is to commence; x. to enable operation of the ancillary facility during flood events and to avoid or minimise, to the greatest extent practicable, adverse flood impacts on the surrounding environment and other properties and infrastructure; and xi. so as to have sufficient area for the storage of raw materials to minimise, to the greatest extent practicable, the number of deliveries required outside standard construction hours.	Refer to Section 2.2; Table 3 and 4 for locations of facilities not identified within the EIS. Ancillary facilities as per A16 to be assessed per each condition, endorsed by the ER and be approved by DPE. To be designed in accordance with ECMs referenced within this plan.
A17	Before establishment of any ancillary facility that satisfies the criteria in Condition A16, the Proponent must prepare an Ancillary Facilities Management Plan which outlines the environmental management practices and procedures to be implemented for the establishment and operation of the ancillary facility. The Ancillary Facilities Management Plan must be prepared in consultation with the EPA and the relevant council(s) and submitted to the Secretary for approval one month before installation of the relevant ancillary facilities. The Ancillary Facilities Management Plan must detail the management of the ancillary facilities and include: (a) a description of activities to be undertaken during construction (including scheduling of construction); (b) a program for ongoing analysis of the key environmental risks arising from the activities described in subsection (a) of this condition, including an initial risk assessment undertaken before the commencement of construction of the CSSI; and	NCW CAFMP document (this document) Plan has been submitted to the EPA and WCC relevant stakeholders for comment. Then provided to DPE to obtain approval. Refer to Section 1.1, Section 1.2, Section 4, Section 5 and Appendix B.

CoA	Obligation	Document Reference
	(c) details of how the activities described in subsection (a) of this condition will be carried out to: i. meet the performance outcomes stated in the EIS as amended by the documents listed in A1; and ii. manage the risks identified in the risk analysis undertaken in subsection (b) of this condition.	
A18	Minor ancillary facilities comprising lunch sheds, office sheds, and portable toilet facilities, that are not identified in the EIS as amended by the documents listed in A1 and which do not satisfy the criteria set out in Condition A16 of this approval must satisfy the following criteria: (a) have no greater environmental and amenity impacts than those that can be managed through the implementation of environmental measures detailed in the CEMP required under Condition C1 of this approval; 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 Interim Construction Noise Guideline (DECC 2009), traffic and access impacts, dust and odour impacts, and visual (including light spill) impacts; 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.	Proposed minor ancillary facilities are to be assessed and endorsed by the ER. Minor ancillary facilities are not included within this plan and are subject to separate approval by the ER. Refer to Section 2.7 for supplementary information on the Approval Pathway for minor ancillary facilities. Note that a Minor Ancillary Facility at Drake Street was endorsed by the ER on 22 Jan 2018. The facility will be upgraded to a full ancillary facility under this Plan. Upgrading will include the addition of a concrete washout area.
A19	Boundary fencing that incorporates screening must be erected around all ancillary facilities that are adjacent to sensitive receivers for the duration of construction unless otherwise agreed with Relevant Council(s), and affected residents, business operators or landowners.	Refer to Section 4.3
A20	Boundary screening required under Condition A19 of this approval must minimise visual, noise and air quality impacts on adjacent sensitive receivers.	Refer to Section 4.3
A24	From commencement of construction until completion of construction, the approved ER must: (a) receive and respond to communications from the Secretary in relation to the environmental performance of the CSSI; (b) consider and inform the Secretary on matters specified in the terms of this approval; (c) consider and recommend any improvements that may be made to work practices to avoid or minimise adverse impact to the environment and to the community; (d) review all documents required to be prepared under the terms of this approval, ensure they address any requirements in or under this approval and if so, endorse them before submission to the Secretary (if required to be submitted to the Secretary) or before implementation (if not required to be submitted to the Secretary). For documents requiring specialist review and/or endorsement the ER is not required to endorse the specialist content; (e) regularly monitor the implementation of all documents required by the terms of this approval for implementation in accordance with what is stated in the document and the terms of this approval; (f) review the Proponent's notification of incidents in accordance with Condition A41 of this approval;; (g)as may be requested by the Secretary, help plan, attend or undertake Department audits of the CSSI, briefings, and site visits;	Refer to Section 7

CoA	Obligation	Document Reference
	(h) if conflict arises between the Proponent and the community in relation to the environmental performance of the CSSI, follow the procedure in the Community Communication Strategy approved under Condition B3 of this approval to attempt to resolve the conflict, and if it cannot be resolved, notify the Secretary; (i) review any draft consistency assessment that may be carried out by the Proponent, and provide advice on any additional mitigation measures required to minimise the impact of the work; (j) consider any minor amendments to be made to the CEMP, CEMP sub-plans and monitoring programs that comprise updating or are of an administrative nature, and are consistent with the terms of this approval and the CEMP, CEMP sub-plans and monitoring programs approved by the Secretary and, if satisfied such amendment is necessary, approve the amendment. This does not include any modifications to the terms of this approval; (k) assess the impacts of minor ancillary facilities as required by Condition A18 of this approval; and (l) prepare and submit to the Secretary and other relevant regulatory agencies, for information, a monthly Environmental Representative Report detailing the ER's actions and decisions on matters for which the ER was responsible in the preceding month (or other timeframe agreed with the Secretary). The Environmental Representative Report must be submitted within seven (7) days following the end of each month for the duration of works and construction of the CSSI, or as otherwise agreed with the Secretary.	
A27	The approved AA must: (a)receive and respond to communication from the Secretary in relation to the performance of the CSSI in relation to noise and vibration; (b)consider and inform the Secretary on matters specified in the terms of this approval relating to noise and vibration; (c)consider and recommend, to the Proponent, improvements that may be made to work practices to avoid or minimise adverse noise and vibration impacts; (d)review all noise and vibration documents required to be prepared under the terms of this approval and, should they be consistent with the terms of this approval, endorse them before submission to the Secretary (if required to be submitted to the Secretary) or before implementation (if not required to be submitted to the Secretary). For documents requiring specialist review and/or endorsement the ER is not required to endorse the specialist content; (e)regularly monitor the implementation of all noise and vibration documents required to be prepared under the terms of this approval to ensure implementation is in accordance with what is stated in the document and the terms of this approval; (f) review the Proponent's notification of incidents incidents in accordance with Condition A41 of this approval; (g)in conjunction with the ER, the AA must: i.consider requests for out of hours construction activities and determine whether to endorse the proposed activities in accordance with Condition E47; ii.as may be requested by the Secretary or Complaints Commissioner, help plan, attend or undertake audits of noise and vibration management of the CSSI including briefings, and site visits; iii.if conflict arises between the Proponent and the community in relation to the noise and vibration performance during construction of the CSSI, follow the procedure in the Community Communication Strategy approved under Condition B3 of this approval to attempt to resolve the conflict, and if it cannot be resolved, notify the Secretary; iv.consider relevant minor amendments made to the CEMP, relevant sub-plans and noise and vibration monitoring programs that require updating or are of an administrative nature, and are consistent with the terms of this approval and the management plans and monitoring programs approved by the Secretary and, if	Refer to Section 7

CoA	Obligation	Document Reference
	satisfied such amendment is necessary, endorse the amendment. This does not include any modifications to the terms of this approval; v.assess the noise impacts of minor ancillary facilities as required by Condition A18 of this approval; and vi.prepare and submit to the Secretary and other relevant regulatory agencies, for information, a monthly Noise and Vibration Report detailing the AAs actions and decisions on matters for which the AA was responsible in the preceding month (or other timeframe agreed with the Secretary). The Noise and Vibration Report must be submitted within seven (7) days following the end of each month for the duration of construction of the CSSI, or as otherwise agreed with the Secretary.	
E36	Construction, except as allowed by Condition E48 (excluding cut and cover tunnelling), must only be undertaken during the following standard construction 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.	Refer to Section 4.10
E47	An Out of Hours Work Protocol for the assessment, management and approval of work outside of standard construction hours, as defined in Condition E36 of this approval, must be prepared in consultation with the EPA and submitted to the Secretary for approval before construction commences for works not subject to an EPL. The protocol must include: (a)the identification of low and high risk construction activities; (b)a risk assessment process in which the AA reviews all proposed out of hours activities and identifies their risk levels; (c)a process for the endorsement of out of hours activities by the AA and approval by the ER for construction activities deemed to be of: i.low environmental risk; or ii.high risk where all construction works cease by 9pm. All other high risk out of hours construction must be submitted to the Secretary for approval unless otherwise approved through an EPL. The protocol must detail standard assessment, mitigation and notification requirements for high and low risk out of hours works, and detail a standard protocol for referring applications to the Secretary.	Refer to Section 4.10
E65	All reasonably practicable erosion and sediment controls must be installed and appropriately maintained to minimise any water pollution. When implementing such controls, any relevant guidance in the Managing Urban Stormwater Series must be considered.	Refer to Section 4.2 Site Establishment
E80	The Proponent must minimise truck movements during peak periods within commercial centres. Peak periods are 7am to 10am and 4pm to 7pm Monday to Friday.	Refer to Section 4.7 and the Construction Traffic Management Plan Section 1.4
E85	Heavy vehicle haulage must not use local roads unless no feasible alternatives are available.	Refer to Section 4.7 and the Construction Traffic Management Plan – Appendix A and B
E99	The CSSI must be constructed in a manner that minimises visual impacts of construction sites, including, providing temporary landscaping where appropriate to soften views of the construction sites, 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.	Refer to Section 4.1 and Section 4.3. Design and operation of ancillary facilities to minimise impacts to surrounding environment.

CoA	Obligation	Document Reference
E106	Waste generated during construction and operation is to be dealt with in accordance with the following priorities: (a) waste generation is to be avoided and where avoidance is not reasonably practicable, waste generation is to be reduced; (b) where avoiding or reducing waste is not possible, waste is to be re-used, recycled, or recovered; and (c) where re-using, recycling or recovering waste is not possible, waste is to be treated or disposed of.	Refer to Section 4.6

REMM	Obligation	Document Reference
NV1	The Construction Noise and Vibration Strategy would be implemented with the aim of achieving the noise management levels, where feasible and reasonable. This would include the following example standard mitigation measures where feasible and reasonable: (1) Provision of noise barriers around each construction site (2) Provision of acoustic sheds at Chatswood dive site, Crows Nest, Victoria Cross, Barangaroo, Martin Place, Pitt Street, Waterloo and Marrickville dive site (3) The coincidence of noisy plant working simultaneously close together would be avoided (4) Offset distances between noisy plant and sensitive receivers would be increased (5) Residential grade mufflers would be fitted to all mobile plant (6) Dampened rock hammers would be used (7) Non-tonal reversing alarms would be fitted to all permanent mobile plant (8) High noise generating activities would be scheduled for less sensitive period considering the nearby receivers (9) The layout of construction sites would consider opportunities to shield receivers from noise. This would also include carrying out the requirements in relation to construction noise and vibration monitoring.	The operation of all ancillary facilities will be undertaken in accordance with the NCW CNVMP. Refer to Section 4.7
LV1	Where feasible and reasonable, the elements within construction sites would be located to minimise visual impacts, for example materials and machinery would be stored behind fencing.	Refer to Section 4.2 and 4.3
LV2	Existing trees to be retained would be protected prior to the commencement of construction in accordance with Australian Standard AS4970 the Australian Standard for Protection of Trees on Development Sites and Adjoining Properties.	Vegetation will be managed as identified in the EIS and the Tree Impact report. Site specific ECMs will be applied to mitigate any risks. Refer to Section 4.2
LV3	Lighting of construction sites would be oriented to minimise glare and light spill impact on adjacent receivers.	Refer to Section 4.3
LV4	Visual mitigation would be implemented as soon as feasible and reasonable after the commencement of construction, and remain for the duration of the construction period.	Refer to Section 4.3
LV5	Opportunities for the retention and protection of existing street trees would be identified during detailed construction planning.	No street trees are to be disturbed during the NCW project.

REMM	Obligation	Document Reference
T5	The community would be notified in advance of proposed road and pedestrian network changes through media channels and other appropriate forms of community liaison.	Refer to the NCW CTMP. Notification is firstly raised at the TCG meetings and then provided through the Sydney Metro Community Consultation Strategy.
T6	Vehicle access to and from construction sites would be managed to ensure pedestrian, cyclist and motorist safety. Depending on the location, this may require manual supervision, physical barriers, temporary traffic signals and modifications to existing signals or, on occasions, police presence.	Refer to Section 4.7 and the CTMP – Section 2.1
T9	All trucks would enter and exit construction sites in a forward gear, where feasible and reasonable.	Refer to Section 4.7 and the CTMP – Section 2.1
T13	Construction site traffic would be managed to minimise movements in the AM and PM peak periods.	Refer to Section 4.7 and the CTMP – Section 2.1 The NCW CTMP has been prepared in consultation with the TTLG and TCG, RMS, SCO CRS and WCC.
SWC3	Erosion and sediment control measures would be implemented in accordance with Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom, 2004) and Managing Urban Stormwater: Soils and Construction Volume 2 (Department of Environment and Climate Change, 2008). Measures would be designed as a minimum for the 80th percentile; 5-day rainfall event.	Refer to Section 6.1
WM1	All waste would be assessed, classified, managed and disposed of in accordance with the NSW Waste Classification Guidelines.	Refer to Section 4.6
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) and Hazardous and Offensive Development Application Guidelines: Applying SEPP 33 (Department of Planning, 2011)	Refer to Section 4.7
AQ1	The engines of all on-site vehicles and plant would be switched off when not in use for an extended period	Refer to Section 4.10
AQ2	Plant would be well maintained and services to minimise emissions. Emissions from plant would be considered as part of pre-acceptance checks	Refer to Section 4.10
AQ3	Construction site layout and placement of plant would consider air quality impacts to nearby receivers.	Refer to Section 5 Air quality impacts will be managed in accordance with Appendix E – ERAP 3
AQ6	All vehicles carrying loose or potentially dusty material to or from the site would be fully covered.	Refer to Section 4.6 All traffic movements will be managed in accordance with the NCW project CTMP.
AQ7	Stockpiles would be managed to minimise dust generation.	Refer to Section 4.5 All material management will be undertaken in accordance with the NCW project CEMP – ERAP 3.

Terms and Definitions

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

Terms	Explanation
AA	Acoustic Advisor
CAR	Corrective Action Request
CBD	Central Business District
CCS	Sydney Metro Community Consultation Strategy
CEMP	Construction Environmental Management Plan
CEMF	Construction Environmental Management Framework
CNVMP	Construction Noise and Vibration Management Plan
CoA	Conditions of Approval
CRAW	Construction Risk Assessment Workshop
CSR	Combined Services Route
CWG	Compliance Working Group
DPE	Department of Planning and Environment
ECM	Environmental Control Map
EIA	Environmental Impact Assessment
EMS	Environmental Management System
EP&A Act	Environmental Planning and Assessment Act 1979
EPA	Environment Protection Authority
EPL	Environmental Protection Licence
ER	Environmental Representative
ERAP	Environmental Risk Action Plan
HSE	Health Safety and Environment
HSEQ	Health Safety Environment and Quality
ICNG	Interim Construction Noise Guidelines
IECA	International Erosion Control Association
iGATE	Laing O'Rourke Intranet
IMPACT	Laing O'Rourke – Incident Reporting Tool
JSEA	Job Safety Environmental Analysis
LOR	Laing O'Rourke
OEH	Office of Environment and Heritage
OHW	Overhead Wiring
OOHW	Out of Hours Works
OOHWA	Out of Hours Work Application
OSCIP	Overarching Stakeholder and Community Involvement Plan
MR-E	Management Requirements - Environment
PEM	Project Environmental Manager
PIR	Preferred Infrastructure Report
POEO Act	Protection of the Environment Operations Act 1997
RBL	Rating Background Level (Noise)
RMS	Road and Maritime Services
SDS	Safety Data Sheet
SWMS	Safe Work Method Statement
TfNSW	Transport for New South Wales
TMP	Traffic Management Plan
UDLR	Urban Design and Landscape Report
ULX	Underline Crossing
URX	Under Road Crossing

Terms	Definition
Ancillary facility	A facility established for construction of the project which will be decommissioned at the end of construction including an office and amenities compound, construction compound, material crushing and screening plant, materials storage compound, maintenance workshop, testing laboratory and material stockpile area
Compound	A site facility established for the construction of the project that is enclosed by a fence, for example Cleland Road compound.
Consistency assessment	An assessment of whether a proposed activity for the purpose of the CSSI is consistent with the terms of this approval
Construction	Includes all physical work required to construct the CSSI, including demolition, other than the following low impact work: (a) survey works including carrying out general alignment survey, installing survey controls (including installation of global positioning system (GPS)), installing repeater stations, carrying out survey of existing and future utilities and building and road dilapidation surveys; (b) investigations including investigative drilling and excavation*;* (c) heritage excavation and salvage works, subject to addressing related requirements of this approval, including Conditions E10- E27**;** (d) treatment of contaminated sites subject to the recommendations of a Site Contamination Report prepared in accordance with Condition E66. (e) establishment of ancillary facilities, except where demolition is required, in approved locations or in locations meeting the criteria identified in Condition A16 and Condition A18 of this approval, including constructing ancillary facility access roads and providing utilities to the facility; (f) operation of ancillary facilities if the ER has determined the operational activities will have minimal impact on the environment and community; (g) minor clearing and relocation of native vegetation, as identified in the EIS as amended by the description in the PIR*;* (h) installation of mitigation measures including erosion and sediment controls, temporary exclusion fencing for sensitive areas and acoustic treatments; (i) property acquisition adjustment works including installation of property fencing, and relocation and adjustments of utilities to property including water supply and electricity; (j) relocation and connection of utilities where the relocation or connection has a minor impact to the environment as determined by the ER; (k) archaeological testing under the *Code of practice for archaeological investigation of Aboriginal objects in NSW (DECCW, 2010)* or archaeological monitoring undertaken in association with (a)-(j) above to ensure that there is no impact on heritage items; (l) other activities determined by the ER to have minimal environmental impact which may include construction of minor access roads, temporary relocation of pedestrian and cycle paths and the provision of property access; and (m) maintenance of existing buildings and structures required to facilitate the carrying out of the CSSI. However, where heritage items, or threatened species*,* populations or ecological communities (within the meaning of the EP&A Act) are affected or potentially affected by any low impact work, that work is construction, unless otherwise determined by the Secretary in consultation with OEH or DPI Fisheries (in the case of impact upon fish, aquatic invertebrates or marine vegetation). The low impact work described in this definition becomes construction with the approval of a Construction Environmental Management Plan
CSSI	The Critical State Significant Infrastructure, as generally described in Schedule 1, the carrying out of which is approved under the terms of this approval

Minor Ancillary Facility	Minor ancillary facilities comprising lunch sheds, office sheds, and portable toilet facilities, that are not identified in the EIS as amended by the documents listed in A1 and which do not satisfy the criteria set out in Condition A16 of this approval must satisfy the following criteria: (a) have no greater environmental and amenity impacts than those that can be managed through the implementation of environmental measures detailed in the CEMP required under Condition C1 of this approval; 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 *Interim Construction Noise Guideline* (DECC 2009), traffic and access impacts, dust and odour impacts, and visual (including light spill) impacts; 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.

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1. Introduction

Sydney Metro City and Southwest is a new 30km metro line extending metro rail from the end of Sydney Metro Northwest at Chatswood under Sydney Harbour, through new CBD stations and southwest to Bankstown. It is due to open in 2024 with the capacity to run a metro train every two minutes each way through the centre of Sydney. The Northern Corridor Works (NCW) Project forms part of Chatswood to Sydenham component of the Sydney Metro City and Southwest.

As identified in the Chatswood to Sydenham Environmental Impact Statement (EIS), the project includes a number of ancillary components, including new overhead wiring and alterations to existing overhead wiring (OHW), signalling, access tracks / paths, rail corridor fencing, noise walls, fresh air ventilation equipment, temporary and permanent alterations to the road network, facilities for pedestrians, and other construction related works.

The proposed ancillary facilities for the NCW project, as detailed in this plan, were not identified in the Chatswood to Sydenham EIS or Preferred Infrastructure Report (PIR).

1.1 Project Background

The scope of the NCW Project involves the realignment of the T1 North Shore Line between Chatswood Station and Brand St, Artarmon, approximately 1 kilometre in length (refer to Figure 1). This is to accommodate the new metro tracks to be constructed between the country and city rail lines, and the future construction of the Chatswood tunnelling dive site.

To achieve this, the key construction activities associated with the NCW Project are:

Portion 7A

- Detention Basin Construction
- Installation of footings

Portion 7B

- Drainage works
- Hopetoun Ave Access Ramp removal
- Placement of noise walls and construction of retaining walls
- Track Slews
- Nelson St Bridge Demolition
- Mowbray Rd Bridge Modification

Activities that will be undertaken within both Portions of the works include:

- Establishment of Ancillary Facilities
- OHW works
- Signalling works

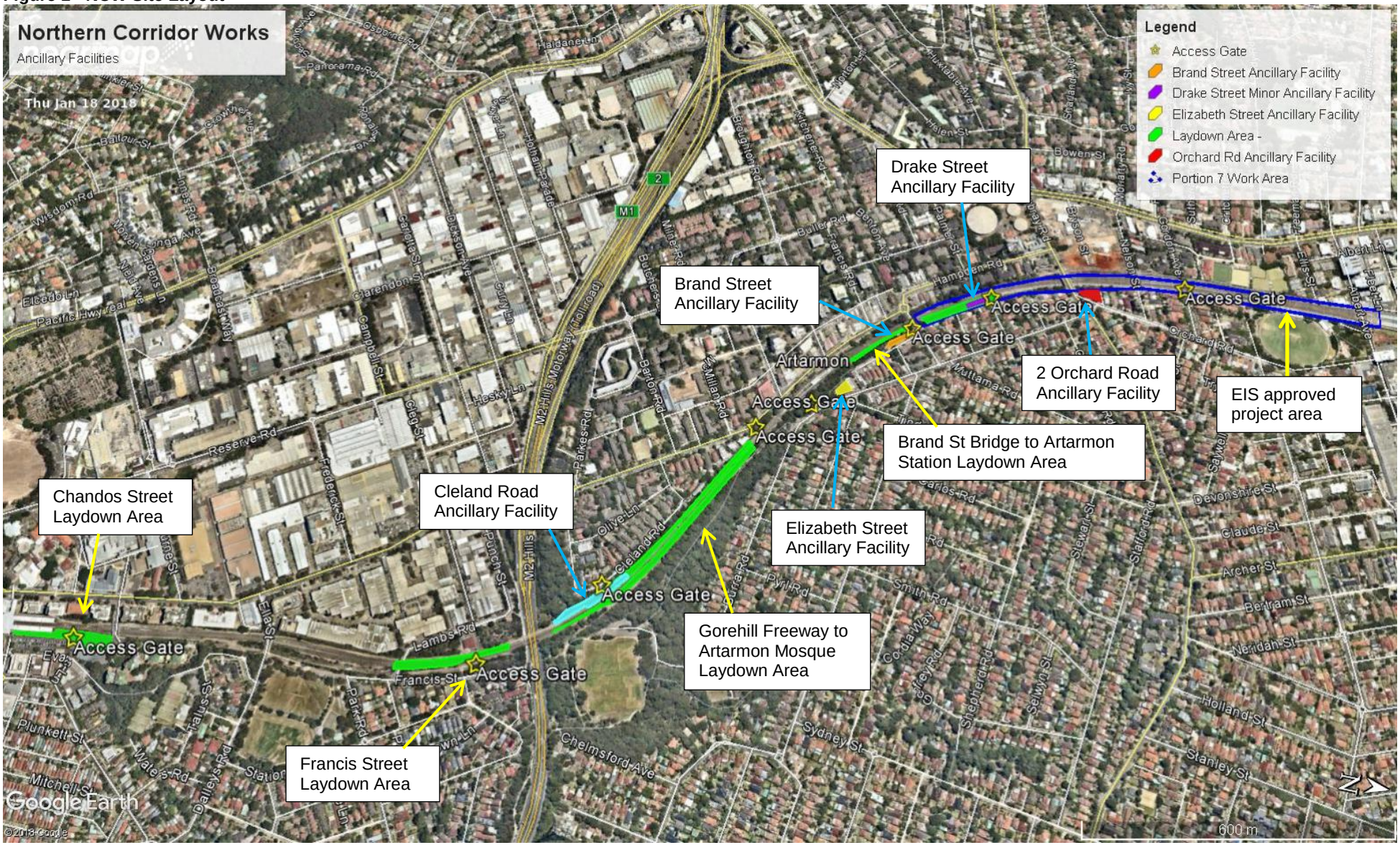
This CAFMP will cover the above construction activities. In addition a schedule of construction activities has also been provided in Appendix D.

The main NCW ancillary facility and laydown area will be established at Cleland Road, Artarmon for the duration of the project.

Further site ancillary facilities are proposed to be established as required within the rail corridor. Environmental Control Maps will be prepared by Laing O'Rourke and submitted for endorsement by the Environmental Representative (ER). A summary is provided below.

- Cleland Road ancillary facility
- Brand Street ancillary facility
- Drake Street ancillary facility
- Elizabeth Street ancillary facility
- 2 Orchard Road ancillary facility
- Brand Street Bridge to Artarmon Station laydown and storage area
- Francis Street to Gore Hill Freeway laydown and storage area
- Gore Hill Freeway to Artarmon Mosque laydown and storage area
- Chandos St laydown and storage area

Figure 1 - NCW Site Layout



1.2 Purpose and scope

This CAFMP (this Plan) describes how Laing O'Rourke (LORAC) will manage construction compounds and ancillary facilities during the construction phase of the project, in compliance with the Client's requirements, Laing O'Rourke's environmental management system and the Minister's Conditions of Approval.

Ancillary facilities are defined in the project approvals as "*a facility established for construction of the project which will be decommissioned at the end of construction including an office and amenities compound, construction compound, material crushing and screening plant, materials storage compound, maintenance workshop, testing laboratory and material stockpile area*". Any ancillary facility that was not identified in the project EIS as amended by the documents listed in A1 is subject to Conditions of Approval A16 and A17 and must be approved by the Secretary of the NSW Department of Planning and Environment prior to establishment. Minor ancillary facilities must comply with Condition of Approval A18 and can be endorsed by the ER. Refer to Section 2.5 for a detailed discussion of the relevant Conditions of Approval.

This Plan has been prepared as a sub-plan to the Construction Environmental Management Plan (CEMP) for the NCW Project and:

- Describes the legislative framework specific to Ancillary Facility issues and relevant guidelines that must be followed
- Identifies the existing worksite issues
- Identifies key risks and impacts associated with the works
- Describes procedures that will be used for management of aspects and potential impacts associated with Ancillary Facilities.

1.3 Objectives and targets

The key objective of the CAFMP is to ensure that environmental impacts associated with the establishment and operation of the ancillary facilities are minimised. This will be achieved through the following targets which have been derived from Laing O'Rourke EMS and Appendix C of the CEMP – Project Specific Risk Assessment.

- Identify potential issues arising from the construction, operation, rehabilitation and decommissioning of ancillary facilities;
- Identify the types of, timing and known locations of ancillary facilities required for the delivery of the project;
- Provide a framework for the assessment and approval of additional ancillary facilities taking into account amenity of neighbouring properties and environmental impacts;
- Identify and describe site specific measures to be implemented in addition to those outlined in the CEMP, where specific controls are required for a location;
- Ensure ancillary facilities are managed in accordance with this Plan, the CEMP, Planning Approval and relevant Deeds;
- Outline a monitoring, auditing and reporting framework to assess the effectiveness of the controls implemented.

1.4 Consultation and Communication

The CAFMP has been developed in consultation with the following key stakeholders in order of submission of the draft plan for consultation:

- Willoughby City Council (WCC)
- Environmental Protection Agency (EPA)
- TfNSW and the Environmental Representative (ER) for the project;
- The Department of Planning and Environment (DPE).

The plan will be updated as required following each period of consultation with the above stakeholders. Draft copies of the NCW CEMP and Sub Plans, including the draft CAFMP (this Plan) will be prepared and provided for review. Note a copy of stakeholder comments is listed below in **Table 1** and within **Appendix B**.

The CAFMP will be reviewed by the Environmental Representative (ER) and endorsed prior to submitting the DPE for approval. Construction works will not commence until written approval of all relevant plans, including the CAFMP, has been received from DPE.

Should additional ancillary facilities be required, this Plan will be updated and submitted to DPE for approval following further stakeholder consultation and review in reference to the conditions of the approval.

Table 1 – Stakeholder Consultation

Date requested	Stakeholder	Comments
15 Dec 17	Willoughby City Council	Received 12/01/2018 refer to Appendix B
15 Dec 17	EPA	Received 02/01/2018 refer to Appendix B
1 Mar 18	Willoughby City Council	Received 2/03/2018 refer to Appendix B

1.5 Interface with other management plans

All project management plans will be submitted to TfNSW as a suite of documents with specific relevance, hierarchies and interdependencies. Collectively these plans provide the governance framework through which the Project will be planned, delivered, monitored and continuously improved.

The CAFMP interfaces with the CEMP and other management plans and documents as outlined in **Table 2** below:

Operation of the ancillary facilities is also to be in accordance with the Sydney Trains Safety Management System, as referenced within the Construction Health and Safety Management Plan for the Northern Corridor Works project.

Table 2: Interface with other management plans

Plan	Interface
Construction Environmental Management Plan (CEMP)	The CAFMP forms a sub plan to the CEMP which outlines overarching environmental management of the works.
Construction Traffic, Transport Management Plan (CTMP)	Management of the traffic and transportation impacts of heavy and light vehicles during construction
Construction Health and Safety Management Plan	Activities to be conducted at or within ancillary facilities to be in compliance to H&S management plan
Construction Noise and Vibration Management Plan (CNVMP)	Management of noise and vibration including out of hours working and sensitive receivers
Construction Sustainability Management Plan (CSMP)	Addresses the sustainability requirements for the project

2. Legal and Other Requirements

2.2 Project Approval and Development Consent

The works are to be delivered under the Environmental Planning and Assessment Act 1979 in accordance with the Critical State Significant Infrastructure Sydney Metro City & Southwest Chatswood to Sydenham Conditions of Approval (SSI 15_7400) issued for the Project under Section 115ZB. The approval process includes specific planning conditions and commitments that must be addressed in this CEMP and delivered during the project.

Specific conditions of approval relevant to construction activities are included in the project's Operational Controls in the aspect specific Environmental Risk Action Plans (ERAPs) seen **in Appendix D** of the CEMP

2.3 Environmental Authority / Licence

The NCW Project will be delivered in accordance with the Sydney Trains Environment Protection Licence (EPL) 12208 and all information required by the EPL will be submitted to Sydney Trains or relevant authority within the stipulated timeframes and subject to requirements of the interface agreement in place between Sydney Trains, RailCorp and Sydney Metro. Compliance with all relevant licence conditions will be tracked, monitored and ensured. If any inconsistencies between the EPL and planning approval arise, the planning approval will take precedence. EPL 12208 has been granted for the Scheduled Activity; Railway systems activities.

2.3 Key Legislation

The legislation relevant to construction ancillary facilities for the Project includes the following:

- Biosecurity Act 2015
- Biosecurity Regulation 2017
- Contaminated Land Management Act 1997
- Dangerous Goods (Road and Rail Transport) Act 2008
- Environmentally Hazardous Chemicals Act 1985
- Environmental Planning and Assessment Act 1979;
- Environmental Planning and Assessment Regulation 2000
- Environment Protection and Biodiversity Conservation Act 1999 (Cwth)
- Land and Environment Court Act 1979
- Local Government Act 1993
- Local Government (General) Regulation 2005
- Native Vegetation Act 2003
- Native Vegetation Regulation 2005
- Protection of the Environment Operations Act 1997 (POEO Act).
- Roads Act 1993
- Roads (General) Regulation 2000
- Soil Conservation Act 1938
- Threatened Species Conservation Act 1995
- Threatened Species Conservation Regulation 2002
- Threatened Species Conservation (Savings and Transitional) Regulation 1996
- Waste Avoidance and Resource Recovery Act 2001
- Water Management Act 2000
- Water Management (General) Regulation 2004

2.4 References, Standards, Codes and Regulations

In addition to legislative requirements, the following environmental publications, standards, codes of practice and guidelines are relevant to the NCW Project and are referenced throughout this Plan. Other aspect specific guidelines are discussed in the relevant CEMP sub-plans and other project management plans.

- Managing Urban Stormwater: Soils and Construction. Volume 2D: Main Road, DECC (2008)
- Managing Urban Stormwater: Soils and Construction. Volume 1 of the 'Blue Book', Landcom (2004)
- Crime Prevention through Environmental Design (CPTED) principles
- NWRL Style Guidelines (Co-branding) (TfNSW, November 2012).
- Relevant Australian Standards including:

- National Construction Code AS1428 Design for Access and Mobility;
- AS/NZS 16802.4 Interior Lighting;
- AS/NZS 1940: 2004 The Storage and Handling of Flammable and Combustible Liquid
- SafeWork Australia Codes of Practice; and
- TfNSW Chemical Storage and Spill Response Guidelines 9TP-SD-066.

2.5 Assessment and Approval of Ancillary Facilities

Ancillary facilities not identified by description and location in the EIS, must meet the criteria as listed in A16, unless otherwise approved by the Secretary. Compliance is provided in **Table 3** of this Plan.

Before establishment of any ancillary facility that satisfies the criteria in Condition A16, the Proponent must prepare an Ancillary Facilities Management Plan which outlines the environmental management practices and procedures to be implemented for the establishment and operation of the ancillary facility. The Ancillary Facilities Management Plan must be prepared in consultation with the EPA and the relevant council(s) and submitted to the Secretary for approval one month before installation of the relevant ancillary facilities. The process of review and approval of this Plan is detailed in Section 1.4 of this Plan.

Table 3 – Compliance with Ancillary Facility Conditions of Approval relating to NCW

Condition	Details	Comments	Compliant
A16	Ancillary facilities that are not identified by description and location in the EIS as amended by the documents listed in A1, must meet the following criteria, unless otherwise approved by the Secretary: (a) the facility is development of a type that would, if it were not for the purpose of the CSSI, otherwise be exempt or complying development; or (b) the facility is located as follows:	Ancillary facilities identified in this that are not identified in the EIS as amended by the documents listed in A1. Refer to Figure 1, specifically: - Cleland Rd ancillary facility - Brand St ancillary facility - Drake St ancillary facility - Elizabeth St ancillary facility - 2 Orchard Road ancillary facility - Brand Street Bridge to Artarmon Station laydown and storage area - Francis Street to Gore Hill Freeway laydown and storage area - Gore Hill Freeway to Artarmon Mosque laydown and storage area Chandos St laydown and storage area, St Leonards Furthermore ancillary facilities would be utilized under the conditions of EPL 12208.	Y
	i. at least 50 metres from any waterway unless an erosion and sediment control plan is prepared and implemented so as not to adversely affect water quality in the waterway in accordance with Managing Urban Stormwater series;	All facilities are located greater than 50 meters from Flat Rock Creek, the nearest waterway. Approximately 2500 meters.	Y
	ii. within or adjacent to land upon which the CSSI is being carried out unless it can be demonstrated that performance criteria established in this approval can be met and that there will be a reduction in impact at other sites and a reduction in the construction program;	The proposed areas are adjacent to the approved CSSI project and contained within the rail corridor. Refer to Figure 1.	Y
	iii. with ready access to a road network	All sites are located adjacent to local roads. Cleland Rd, Brand St, Drake St & Elizabeth St Artarmon NSW, and Hopetoun Ave and Orchard Road Chatswood.	Y
	iv. to prevent heavy vehicles travelling on local streets or through residential areas in order to	Heavy vehicles are to follow the Haul Routes as specified in the project CTMP. These routes have been designed to minimize movements	N

	access the facility, except as identified in the EIS and amended by the documents listed in A1;	on local roads as much as possible. It is noted that in order to access the rail corridor/project site the use of local roads is required and is unavoidable as the rail corridor is located within the local village of Artarmon and Chatswood. Consultation on the CTMP (including heavy vehicle routes) has occurred in accordance with CoA E81 and E88. The CTMP has been prepared in consultation with the TTLG, endorsed by the Sydney Coordination Office (SCO) and approved by Roads and Maritime Services (RMS). As such, although the heavy vehicle access to the proposed ancillary facilities was not identified within the EIS, it has been sufficiently assessed through the CTMP, and deemed relevant to the operation of the project and approved by the RMS and SCO through the approval of the NCW CTMP.	Vehicle movements are compliant with CoA E85. Haul routes have been prepared in consultation with the TTLG, endorsed by the Sydney Coordination Office (SCO) and approved by Roads and Maritime Services (RMS).
	v. on level land;	All sites are located on level land. Water flows indicated on ECMs and designed as clean water sites where possible. Erosion and Sediment Controls to be in place prior to use.	Y
	vi. so as to be in accordance with the Interim Construction Noise Guideline (DECC 2009) or as otherwise agreed in writing with affected landowners and occupiers;	Construction and operation of facilities to be in accordance with the ICNG and INP. The project will utilize mitigation measures at all times as specific in the project CNVMP. Refer to section 4.8	Y
	vii. so as not to require vegetation clearing beyond the extent of clearing approved under other terms of this approval except as approved by the ER as minor clearing;	No vegetation clearing will be conducted during the establishment of any ancillary facility other than has been approved under the terms of this approval and endorsed by the ER as minor clearing.	Y
	viii. so as not to have any impact on heritage items (including areas of archaeological sensitivity) beyond the impacts identified, assessed and approved under other terms of this approval;	No excavation is required for any facility locations. No disturbance of heritage items (Artarmon Station) during operation of all facilities.	Y
	ix. so as not to unreasonably interfere with lawful uses of adjacent properties that are being carried out at the date upon which construction or establishment of the facility is to commence;	Construction and operation of all facilities to be undertaken in accordance with the conditions of the approval. Impacts to be managed as per the project CEMP and this plan. Operation of all facilities to be contained within the rail corridor only.	Y
	x. to enable operation of the ancillary facility during flood events and to avoid or minimise, to the greatest extent practicable, adverse flood impacts on the surrounding environment and other properties and infrastructure; and	The rail corridor is elevated above the surrounding environment. Operation of the Cleland Road, Brand Street and Drake Street ancillary facilities are contained within the rail corridor. The Elizabeth Street ancillary facility will be located within an established building located adjacent to the rail corridor (the former Artarmon Library at 2 Elizabeth Street Artarmon). This area is free draining. The 2 Orchard Road ancillary facility will be located within an established building located	Y

		adjacent to the rail corridor. This area is free draining. ESC controls will be designed and implemented as per Blue Book requirements.	
A17	Before establishment of any ancillary facility that satisfies the criteria in Condition A16, the Proponent must prepare an Ancillary Facilities Management Plan which outlines the environmental management practices and procedures to be implemented for the establishment and operation of the ancillary facility. The Ancillary Facilities Management Plan must be prepared in consultation with the EPA and the relevant council(s) and submitted to the Secretary for approval one month before installation of the relevant ancillary facilities. The Ancillary Facilities Management Plan must detail the management of the ancillary facilities and include: (a) a description of activities to be undertaken during construction (including scheduling of construction);	This CAFMP outlies the environmental management practices and procedures to be implemented for the establishment and operation of a number of ancillary facilities. Consultation with the NSW EPA and Willoughby Council has been undertaken during the development of this plan refer to Appendix B. The scope of the works are included within Section 1.1 and Section 1.2 of this document	Y
	(b) a program for ongoing analysis of the key environmental risks arising from the activities described in subsection (a) of this condition, including an initial risk assessment undertaken before the commencement of construction of the CSSI; and	Section 5 of this document includes a risk rating for environmental aspects associated with the establishment and operation of ancillary facilities described in this plan. Section 5 also includes details on how environmental risks will be reviewed during the project.	Y
	(c) details of how the activities described in subsection (a) of this condition will be carried out to; i. meet the performance outcomes stated in the EIS as amended by the documents listed in A1; and	The performance outcomes will be met through the measures outlined in Appendix E ERAPs of the CEMP.	Y
	ii. manage the risks identified in the risk analysis undertaken in subsection (b) of this condition.	Section 4 includes mitigation measures for the key environmental risks associated with the establishment and operation of ancillary facilities as detailed within this Plan. CEMP - Appendix E – includes Environmental Risk Action Plans	Y
A18	Minor ancillary facilities comprising lunch sheds, office sheds, and portable toilet facilities, that are not identified in the EIS as amended by the documents listed in A1 and which do not satisfy the criteria set out in Condition A16 of this approval must satisfy the following criteria: (b) have no greater environmental and amenity impacts than those that can be managed through the implementation of environmental measures detailed in the CEMP required under Condition C1 of this approval; and (b) have been assessed by the ER to have: i. minimal amenity impacts to surrounding residences and businesses, after consideration	This document does not relate to minor ancillary facilities – Refer to comment below*	N/A

	of matters such as compliance with the Interim Construction Noise Guideline (DECC 2009), traffic and access impacts, dust and odour impacts, and visual (including light spill) impacts; 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.		
A19	Boundary fencing that incorporates screening must be erected around all ancillary facilities that are adjacent to sensitive receivers for the duration of construction unless otherwise agreed with Relevant Council(s), and affected residents, business operators or landowners.	Boundary fencing that incorporates screening will be erected around all ancillary facilities. The fencing will be maintained for the duration of construction unless otherwise agreed with relevant Council(s), and affected residents, business operators or landowners	Y
A20	Boundary screening required under Condition A19 of this approval must minimise visual, noise and air quality impacts on adjacent sensitive receivers.	The boundary screening will be made of noise curtain material and will installed to the height of the existing rail corridor boundary fence. This will mitigate impacts associated with any visual, noise and air quality impacts on adjacent sensitive receivers associated with the operation of the ancillary facilities. Refer to Section 4.1 and 4.4.	Y

*It is noted that Minor Ancillary Facilities can be approved by the Independent Environmental Representative in accordance with CoA A18. This Plan has been developed for the management of Ancillary Facilities, approved in accordance with CoA A16, and does not include Minor Ancillary Facilities. Minor Ancillary Facilities are managed in accordance with the CEMP, any application for a Minor Ancillary Facility made to the ER and any conditions imposed by the ER as appropriate under CoA A18.

The Drake Street Minor Ancillary Facility was endorsed by the ER in accordance with CoA18 on 22 Jan 2018 under Pre-Construction Minor Works Application MWA-006. The Drake Street *Minor Ancillary Facility* will be upgraded to an *Ancillary Facility* under CoA16 upon approval of this Plan. Upon approval of this Plan a concrete washout basin will be added to the Drake Street Ancillary Facility.

2.6 Minor Changes to Approved Ancillary Facilities

Whilst this document covers ancillary facilities as best described prior to commencing construction, it should be noted that distinct project phases may see a need to make minor changes to facilitate constructability, amenity or traffic staging requirements. This may include:

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

Key structures such as barriers and fencing will be modified as appropriate to minimise any noise, visual and air quality impacts. These changes would occur where there is a neutral or positive amenity/ environmental impact generally, as determined by the Environmental Representative (with advice from the Acoustic Advisor as required).

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

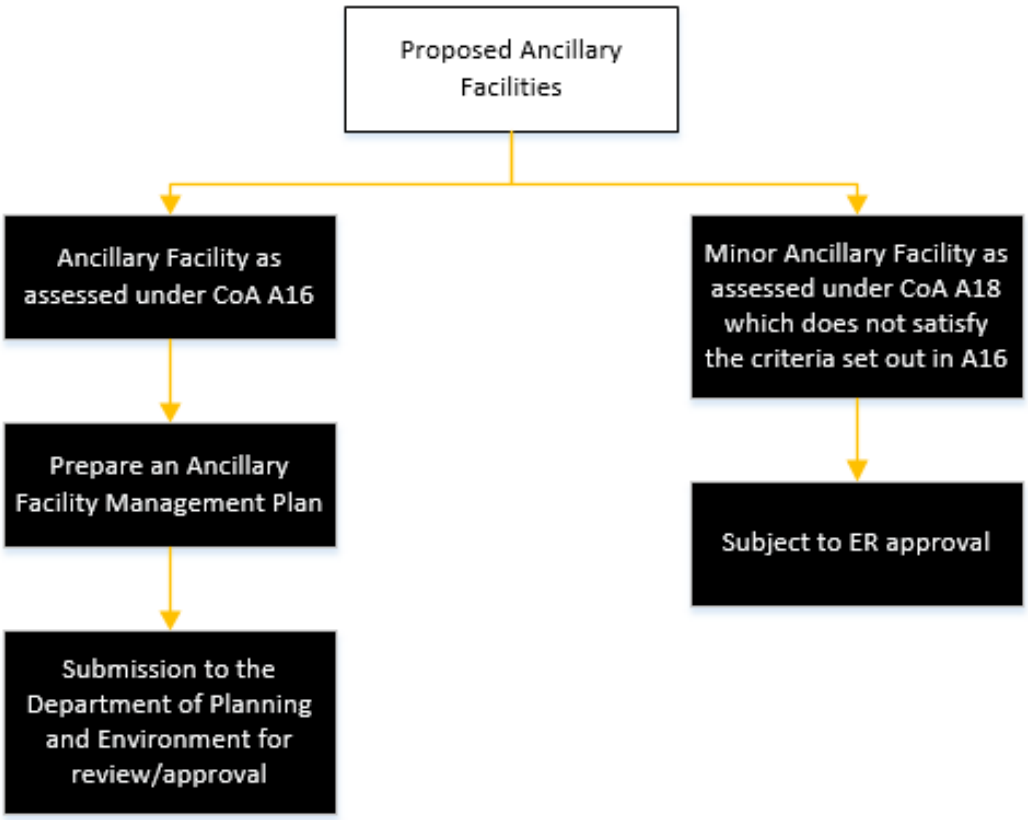
2.7 Approval Pathway

The CoA approval pathway for all ancillary facilities can be seen in Figure 2. Proposed ancillary facilities within this plan were not identified within the EIS and with the exception of the Drake St Ancillary Facility fall outside of the approved project boundary defined in the EIS. The process for these ancillary facilities is shown in Figure 2 and in Table 4 below. The Approval Pathway for Minor Ancillary Facilities, although not the subject of this plan, is included below as supplementary information.

Table 4 – Approval Pathway

Condition	Ancillary Facilities Assessed	Reason	Assessment	Approved by
A16	- Cleland Road ancillary facility - Brand Street ancillary facility - Drake Street ancillary facility - Elizabeth Street ancillary facility - 2 Orchard Road ancillary facility - Brand Street Bridge to Artarmon Station laydown and storage area - Francis Street to Gore Hill Freeway laydown and storage area - Gore Hill Freeway to Artarmon Mosque laydown and storage area - Chandos St laydown and storage area, St Leonards	Locations not identified as ancillary facilities within the EIS as amended by the documents listed in A1	Ancillary Facility	DPE
A18	- Drake Street minor ancillary facility	Drake St Minor Ancillary Facility is located within the EIS project boundary however it is not identified in the EIS as amended by the documents listed in A1. Minimal impacts to environment that can be managed through the CEMP Meets the definition of Minor Ancillary Facility (comprises of lunch shed, office facility and portable toilet facilities only) Minimal amenity impacts No impact to soil, water and biodiversity beyond those identified in the EIS	Minor Ancillary Facility	ER – Endorsed 22 Jan 2018

Figure 2 – Approval Flow Chart for Ancillary Facilities



3. Ancillary Facilities

3.1 Overview of NCW worksite and Ancillary Facilities

It is noted there is minimal space within the rail corridor for ancillary facilities and materials storage. As such LORAC proposes to use an existing ancillary facility located within the rail corridor at Cleland Rd, Artarmon NSW.

Site layout plans for the sites ancillary facility (**Appendix A**) show the location of the ancillary facility in relation to the worksite. The Cleland Road ancillary facility is an existing worksite compound located within the rail corridor and will be developed by the construction team for the NCW.

The Brand Street ancillary facility is to be located within the rail corridor and only to be used as required during rail possessions.

The Drake Street ancillary facility is to be located within the rail corridor and is to be used as a temporary ancillary facility prior to the establishment of the Cleland Road site. This site will then be used mainly for material laydown and storage.

Layout plans are therefore indicative, noting that these will be progressively updated in more detail by the construction teams.

Smaller storage and laydown areas will be required during and prior to rail possessions between Francis St and Brand St within the rail corridor. Refer to Section 3.3 – Laydown Areas. These would be identified on Environmental Control Maps.

Compliance with the relevant conditions of approval for these sites is demonstrated in **Table 3** and **Table 4** as well as through the assessment and approval process of this Plan.

3.2 Construction Ancillary Facilities

There are five construction ancillary facility sites that will be required for these works. These are located at:

- Cleland Road;
- Drake Street and
- Brand Street
- Elizabeth Street
- 2 Orchard Road

These construction ancillary facilities, detailed in **Table 5**, will accommodate offices, lunchrooms, toilets, security, laydown, and security fencing and lighting. The sites will have minimal on-site parking for the construction workforce, which will be expected to utilise existing public transport.

To minimise impacts, the following factors were considered during site selection:

- Cleland Road ancillary facility location of an existing worksite compound of sufficient size to accommodate the required facilities
- Drake Street and Brand Street locations within the rail corridor and near existing corridor access gates
- Elizabeth Street is a pre-existing, permanent building with street access and will predominantly be used by engineering staff. There is no rail access via the Elizabeth Street ancillary facility. This site will supplement the main ancillary facility located at Cleland Road.
- 2 Orchard Road is a pre-existing, permanent building with street access and will predominantly be used by engineering staff. There is no rail access via the 2 Orchard Road ancillary facility. This site will supplement the main ancillary facility located at Cleland Road.
- accessible for construction traffic and deliveries
- close to key construction activities
- located away from (or able to be managed in such a way so to not significantly impact) heritage items or environmental sensitive areas.

Where reasonable and feasible, temporary site facilities will incorporate:

- energy efficient lighting schemes and light fittings;
- plug-in electrical equipment which complies with the requirements of the Equipment Energy Efficiency Program (E3) “Minimum Energy Performance Standards” and has at least a five star Energy Rating Label;
- natural daylighting;
- natural ventilation;
- water efficient fixtures, fittings and controls;
- air conditioning refrigerants with low or zero global warming potential;
- crime prevention through environmental design principles.

Site layouts will be provided as detailed design and construction planning progress. Should additional ancillary facilities be required, this Plan will be updated and submitted to DPE for approval.

3.3 Laydown Areas

Laydown areas will be required at various locations within the proposed construction footprint (in addition to the ancillary facilities described above) for storage of small tools, equipment and machinery, materials (e.g. track, conduits), traffic controls, etc. near the construction worksites (see **Table 5**). These additional laydown areas will be situated in some or all of the following locations:

- Drake Street on the up side of the rail corridor up to Brand St Bridge (within the rail corridor) following establishment of Cleland Road ancillary facility.
- From Brand Street Bridge on the up side of the rail corridor to Artarmon Station (within the rail corridor).
- From Francis Street on the up and down side to Gore Hill Freeway (within the rail corridor).
- From Gore Hill Freeway on the up side to Artarmon Mosque (within the rail corridor).
- Chandos Street on the upside of the rail corridor, adjacent to St Leonards Station

The location of the laydown areas is shown in **Appendix A**.

Table 5: Overview of ancillary facilities and temporary laydown areas

Facility	Location and Surrounding Environment	Activities	Access and Parking	Number of Heavy Vehicles (Estimated)	Indicative Operational Period	Hours of Operation
Cleland Rd (Ancillary Facility)	The site ancillary facility is located within the rail corridor on the down side. The site has been a worksite ancillary facility previously and maintains existing environmental controls. The western side fence boundary of the ancillary facility has shade cloth hoardings and sediment fence installed. Nearby properties include residential properties on Cleland Rd. A threatened ecological community of Coastal Enriched Sandstone Dry Forest is present along Parkes Rd.	Main ancillary facility for the project. • Limited parking for construction vehicles • Site office • Amenities for work force • Storage containers • Hazardous good storage area • Erosion and sediment control around ancillary facility	Access from Cleland Rd, Artarmon. Minimal parking for construction workers will be provided at this site. No parking on Cleland Rd [1]	<5 (Deliveries only)	Feb 2018 – Aug 2020	Normal working hours 7 am to 6pm Monday to Friday and 8am to 1pm Saturdays OOHWs as approved under the conditions of the EPL
Brand St (Ancillary Facility)	The site ancillary facility is located within the rail corridor on the up side adjacent to Valetta Lane. The site will only be used as a temporary ancillary facility during rail possessions to limit movement at Cleland Rd. The ancillary facility will maintain fence hoardings and erosion sediment controls on the eastern side fence boundary at all time in preparation for a possession. Nearby properties include residential properties on Valetta Lane.	Secondary possession only construction ancillary facility for the project. • Limited parking for construction vehicles • Site office • Amenities for work force • Limited laydown area • Erosion and sediment control around ancillary facility	Access from Brand St, Artarmon. Minimal parking for construction workers will be provided at this site. No parking on Brand St or Valetta Ln at any time	Nil	Feb 2018 – Aug 2020	Only during possession OOHWs as approved under the conditions of the EPL

Facility	Location and Surrounding Environment	Activities	Access and Parking	Number of Heavy Vehicles (Estimated)	Indicative Operational Period	Hours of Operation
Drake St (Ancillary Facility)	The area is located within the rail corridor on the up side. Nearby properties include residences on Drake St and Hawkins St.	Ancillary facility and laydown areas • Site office • Amenities for work force • Erosion and sediment control around ancillary facility • Storage for materials (laydown area) • Containers and hazardous storage area • Concrete washout	Access from Drake St, Artarmon. Minimal parking for construction workers will to be provided at this site. No parking permitted on Drake St.	<5	Feb 2018 – Aug 2020	Normal working hours 7 am to 6pm Monday to Friday and 8am to 1pm Saturdays OOHWs as approved under the conditions of the EPL
Elizabeth St (Ancillary Facility)	The ancillary facility is located in a pre-existing permanent building located at 2 Elizabeth Street, Artarmon. The building is the former Artarmon Library. The building is adjacent to the rail corridor, however it does not allow for direct access to the corridor.	Ancillary facility and laydown areas • Site office • Amenities for work force • Storage for tools and equipment	Access from Elizabeth Street, Artarmon. Minimal parking for engineers will be provided at this site.	Nil	Feb 2018 – Aug 2020	Normal working hours 7 am to 6pm Monday to Friday and 8am to 1pm Saturdays OOHWs as approved under the conditions of the EPL
2 Orchard Road (Ancillary Facility)	The ancillary facility is located in a pre-existing permanent building located at 2 Orchard Road, Chatswood. The building is adjacent to the rail corridor, however it does not allow for direct access to the corridor.	Ancillary facility and laydown areas • Site office • Amenities for work force • Storage for tools and equipment	Access from Orchard Road, Chatswood. Minimal parking for engineers will be provided at this site.	Nil	Feb 2018 – Aug 2020	Normal working hours 7 am to 6pm Monday to Friday and 8am to 1pm Saturdays OOHWs as approved under the conditions of the EPL

Facility	Location and Surrounding Environment	Activities	Access and Parking	Number of Heavy Vehicles (Estimated)	Indicative Operational Period	Hours of Operation
Brand St – Artarmon Station (Laydown)	The area is located within the rail corridor on the up side. Nearby properties include residences on Valetta Lane.	Temporary laydown and service facility • Erosion and sediment control around ancillary facility • Storage for materials (laydown area) • Containers and hazardous storage	Access from Valetta Lane, Artarmon. No parking provided on site or in surrounding streets.	<5 (Deliveries only)	Feb 2018 – Aug 2020	Normal working hours 7 am to 6pm Monday to Friday and 8am to 1pm Saturdays OOHWs as approved under the conditions of
Gore Hill Fwy – Francis St (Laydown)	The area is located within the rail corridor on the up side. Nearby properties include residences on Francis St.	Temporary laydown and service facility • Erosion and sediment control around ancillary facility • Storage for materials (laydown area) • Containers and hazardous storage area	Access from Francis St, St Leonards. No parking provided on site or in surrounding streets.	<5 (Deliveries only)	Feb 2018 – Aug 2020	Normal working hours 7 am to 6pm Monday to Friday and 8am to 1pm Saturdays OOHWs as approved under the conditions of the EPL
Gore Hill Fwy – Artarmon Mosque (Laydown)	The area is located within the rail corridor on the up and down sides. Nearby properties include residences on Cleland Rd, Mosque on Hampden Rd.	Temporary laydown and service facility • Erosion and sediment control around ancillary facility • Storage for materials (laydown area) • Containers and hazardous storage area	Access from Cleland Rd, and existing access gates to the rail corridor near Artarmon. No parking provided on site or in surrounding streets.	<5 (Deliveries only)	Feb 2018 – Aug 2020	Normal working hours 7 am to 6pm Monday to Friday and 8am to 1pm Saturdays OOHWs as approved under the conditions of the EPL
Chandos Street (Laydown)	The area is located within the rail corridor on the up side adjacent to S Leonard's Railway Station	Temporary laydown and service facility • Erosion and sediment control around ancillary facility • Storage for materials (laydown area) • Containers and hazardous storage area	Access from Chandos St, St Leonards. Parking for vehicles on site.	Deliveries for possession only (<5)	Feb 2018 – Aug 2020	Normal working hours 7 am to 6pm Monday to Friday and 8am to 1pm Saturdays OOHWs as approved under the conditions of the EPL

1 – Construction workers will be expected to utilise public transport in normal construction hours.

4. Aspects, Impacts and Risks

4.1 General Management

Ancillary Facilities will be constructed in accordance with the following requirements

- Site sheds would be as new and maintained in excellent condition and be established at locations and positions that minimise the impact (including visual) on adjoining properties and residents.
- Temporary site facilities would meet the sustainability requirements of the project.
- Temporary site facilities, including site sheds, would be maintained free of graffiti.
- Ancillary facilities will be located outside of the 50m riparian buffer zones of watercourses.
- All facilities utilised for the purpose of LORACs activities must be sited, constructed and maintained to meet the requirements of TfNSW and relevant authorities.
- Daily inspections of all temporary site facilities including site sheds.

Site establishment elements, including sheds will be made from as-new materials or in excellent condition, with the layout of each site arranged to minimise impacts on the surrounding community and in accordance with the requirements of TfNSW and relevant authorities.

Work is to be undertaken during periods specified in the planning conditions and EPL. Any work outside these periods will be subject to risk assessment and environmental approval. Refer to Section 4.10.

4.2 Site Establishment

In accordance with the Project planning approval (SSI 7400), some ancillary facilities may be established prior to construction works commencing and prior to the approval of the CEMP and Sub Plans. Where this occurs, a TfNSW approved Minor Works Approval as approved by the Environmental Representative under condition A18 will be in place prior to site establishment works commencing, and all controls implemented as per that approval. For ancillary facilities established during construction, the CEMP and relevant Sub Plans will apply.

In either case, typical site establishment activities at each ancillary facility site will generally include the following:

- Set up traffic controls as required and controlled site entry and egress points;
- Install fencing/hoarding around the perimeter of the ancillary facility sites where required;
- Install relevant construction signage and way finding signage as required;
- Install environmental controls in accordance with the Environmental Control Maps (ECM's) for each ancillary facility site which will be developed specific to each site to outline the various environmental controls to be implemented;
- Establish temporary lunch room, office, toilets and site amenities as required (including all necessary generators, holding tanks, etc.) within the ancillary facility site where required;
- The establishment of site offices and amenities facilities may require footings to support/stabilise the structure. If any ancillary facility site is located on any area deemed to potentially contain artefacts (by the independent heritage specialist in consultation with Aboriginal Community Representatives), those areas would be further assessed (e.g. via test excavations, monitoring, etc.). If items of significance were found, then those sites would be managed in accordance with the Heritage Management Plan.
- Designated storage areas will be established as required, either within the ancillary facility site and/or within the worksite for stockpiles and construction materials. Stockpile areas will have erosion and sediment controls installed to prevent runoff. Secured containers will house materials and tools;
- Ventilated, self-bunded fuel and chemical storage units will be utilised in accordance with AS 1940 for the storage of dangerous goods and hazardous materials;
- Connect into existing services/utilities at the site as required (and as permitted by the utility providers) to service the ancillary facility site, or temporary provisions (e.g. generators) where connections cannot be established; and
- Mobilise plant and personnel to the ancillary facility site.

All materials and machinery will be stored behind fencing where possible to mitigate visual impacts to the surrounding area using screening as specified in Section 4.3.

Site-specific site establishment requirements include changes to pedestrian and vehicle access, offsets to site boundaries, tree protection measures and heritage protection. These will be outlined in ECMs prepared for each location. Any vegetation that is required to be removed will be undertaken in accordance with condition of approval E6 and with respect to the Sydney Metro,

City and Southwest - Tree Impact Assessment report. Further to this, approval will be sought as required from local authorities prior to undertaking works.

An existing native threatened ecological community of Coastal Enriched Sandstone Dry Forest is present adjacent to the Cleland Rd ancillary facility. Although this community was not identified within the EIS management actions pertaining to the ECM for the Cleland Rd site will be maintained as per Section 6.1 of this plan.

Management actions will also be applied as outlined in the CEMP – ERAP 2 of the CEMP specifically the following control measures will be applied at all times.

- No works to be conducted outside the rail corridor at Cleland Rd (within the area of the ecological community).
- Location of environmentally sensitive areas and community to be protection specified on the Cleland Rd Ancillary Facility ECM and briefed to the workforce.
- Awareness training provided to the workforce on protection measures applicable to the ecological community.
- Monitoring and inspections undertaken of the ecological community and surrounding areas.

4.3 Site Fencing and Lighting

The construction ancillary facilities and laydown areas will be fenced off and secured from pedestrians by using the existing rail corridor fencing. This will create a barrier between the construction site and sensitive receivers minimising the visual impact of offices and plant/equipment, reducing noise impacts through the application of noise curtains and reduce visual air quality impacts through the application of a visual barrier.

Security cameras and lighting will be installed at all ancillary facilities. All site boundary screening required under Condition A19, REMM LV1 and REMM LV4 will minimise visual, noise and air quality impacts on adjacent sensitive receivers and be implemented at all ancillary facilities.

To achieve this Laing O'Rourke will apply noise curtain material and Sydney Metro branded screening to the rail corridor fence and temporary fences in the vicinity of the ancillary facilities for the duration of construction, it is expected that this will achieve an approximate reduction of -10dB. It is noted that under CoA A19 screening may not be installed if it is "agreed with relevant Council(s), and affected residents, business operators and landowners".

Specifically Laing O'Rourke and Willoughby City Council have agreed to not install screening around the Elizabeth Street Ancillary Facility site through the engagement lease agreement for the site as it would cause a detrimental visual impact to the surrounding area. In this instance there is to be no plant or construction work undertaken at the subject site, the site will be used as an office only. A screen will not be installed to maintain the visual integrity of the local village of Artarmon and specifically the area of Wilkes Avenue Plaza it was agreed with Willoughby City Council to not place screening around the site. In addition the site has been beautified through painting, bricklaying and revegetation further minimizing the visual impact of the project office at the site. Furthermore immediately affected residents, local business and the Artarmon Progress Association have been notified and consulted regarding the use of the site with no objection or comment from the aforementioned parties, refer to Section 8 for further information.

Section 3.2 of the CNVMP identifies the sensitive receivers adjacent to the project site and impacted by ancillary facilities. At these locations adjacent to ancillary facilities noise curtain material and Sydney Metro branded screening to the rail corridor fence and temporary fences will be applied to minimize impacts. Where reasonable and feasible acoustic fencing with be constructed and or extended height temporary fence hoardings subject to approval from the land owner and other relevant stakeholder(s).

Temporary lighting will only be utilised during approved OOH works possession activities. Lighting will only be used in accordance with Condition E99 of this approval, minimizing light spill. All lighting will be the minimum level of illumination necessary and must comply with AS: 4282:1997 – Control of the Obtrusive Effects of Outdoor Lighting and relevant Australian Standards in the series AS/NZ 1158 – Lighting for Roads and Public Spaces.

4.4 Stockpiling

Stockpiling of construction materials and spoil will occur within Cleland Rd ancillary facility as well as short-term storage of stockpiles within rail corridor near Drake St as required to accommodate works in each area, i.e. temporary stockpile prior to backfilling, or prior to transport offsite to a nearby approved ancillary facility site or approved offsite disposal facility. Material to be stockpiled may include:

- Mulch;
- Excess spoil;
- Fill material; and
- Bulk materials required during construction (e.g. rail).

All stockpiles whether temporary or longer-term will be managed in accordance with the mitigation measures outlined in the Construction Environmental Management Plan – Environmental Risk Action Plan (ERAP) 3 and 5.

4.5 Waste Management

All waste is to be managed in accordance with the relevant legislative requirements and must be classified in accordance with the NSW Waste Classification Guidelines and the mitigation measures outlined in the Construction Environmental Management Plan – Environmental Risk Action Plan (ERAP) 4 and 8.

Construction Waste will be managed in accordance with the Waste Avoidance and Recovery Act 2001 and meet the recycling target objectives of the project. Where possible waste will be diverted from landfill and re used or recycled.

4.6 Storage of Dangerous and Hazardous Goods

Onsite storage of fuel will be kept to a minimum by using contractors to refuel construction vehicles, therefore removing the need to store fuel for refuelling construction vehicles within the ancillary facilities.

Storage of dangerous and hazardous goods will be limited to small quantities. Fuels and would be stored in sealed containers and bunded areas as per appropriate regulations and guidelines e.g. AS/NZS 1940: 2004. The storage of dangerous and hazardous goods on the project will be managed in accordance with the mitigation measures outlined in the Construction Environmental Management Plan – Environmental Risk Action Plan (ERAP) 7.

Dangerous goods, as defined by the Australian Dangerous Goods Code, must be stored and handled strictly in accordance with:

a) all relevant Australian Standards;

b) for liquids, a minimum bund volume requirement of 110% of the volume of the largest single stored volume within the bund;

c) Storing and Handling Liquids: Environmental Protection – Participants Manual (Department of Environment and Climate Change, May 2007); and

d) the Environmental Compliance Report: Liquid Chemical Storage, Handling and Spill Management – Part B Review of Best Practice and Regulation (Department of Environment and Conservation (NSW), 2005).

4.7 Traffic Management

The Construction Traffic Management Plan (CTMP) outlines the proposed management of worker parking for the project. It outlines that the induction process will promote the use of public transport. The CTMP also outlines that limited parking will be provided at the Cleland Rd ancillary facility.

Vehicles involved in project activities will only enter, operate within, or exit from a traffic flow in a manner according to the CTMP. Heavy Vehicle Routes and Traffic Control plans as included within CTMP – Appendix A. Access to Ancillary Facilities will be limited and mainly at the beginning and end of shift times. An indication of the number of heavy vehicles access each Ancillary Facility and Laydown is provided in Table 5. Generally heavy vehicles will not access Ancillary Facilities unless specific deliveries are required.

The access gates are located on narrow residential streets with cars parked on both sides of the road, which restricts the road width available for construction vehicles to manoeuvre. Parking may have to be removed on one side of the road and this may affect the parking options for residents and visitors of the street. If required further consultation with residents and local authorities approval will be obtained.

Access gates are located on residential streets; construction vehicles must not queue on these roads, but enter through the gate as soon as possible after arriving. Vehicle arrivals will be managed to avoid any 'waiting' outside the worksite by ensuring vehicles immediately enter the worksite.

During possessions, the residential streets of Drake St and Hopetoun Ave will be affected. It is expected that traffic control measures will be required for the delivery of plant and equipment before and during possession based works. Refer to **Table 6** for possession times. This is consistent with Section 2.1.4 of the Construction Traffic Management Plan. Traffic control plans for each ancillary facility have been developed where appropriate and can be found within the project CTMP – Appendix B.

Parking will be managed in accordance with Section 2.1.6 of the NCW CTMP in addition some onsite parking will be at Cleland Road, Elizabeth Street and Drake Street ancillary facilities with vehicles complying with parking restrictions specified in Figure 7 and figure 8 of the CTMP.

Parking spaces located in Parkes Road up to Hampden Road will also be also affected during possessions. These residential streets are located within close proximity of the Cleland Road ancillary facility. Please note that only one side of Parkes Street will be affected during possessions.

Public transport via train is expected to be the most common form of transport for workers. Artarmon Station is the closest station to the ancillary facilitates. Workers and staff would be expected to walk from the station to the ancillary facilities. Travel times from the Artarmon station to the work site are as follows;

- Artarmon Station to Cleland Road Ancillary Facility – 9 minutes/750m
- Artarmon Station to Brand Street Ancillary Facility – 3 minutes/220m

- Artarmon Station to Drake Street Ancillary Facility – 6 minutes/400m
- Artarmon Station to Elizabeth Street Ancillary Facility – 1 minute/120m
- Artarmon Station to 2 Orchard Road Ancillary Facility - 10minutes/750m

Frequency of train arrival times at Artarmon Station will vary, depending on the time of day/night and possessions. Staff and workers are to coordinate their own travel from home to the worksite and must account for frequency of public transport.

Where possession works make travel by public transport to Artarmon difficult, staff and workers who wish to drive by car may do so if they park outside of the restricted parking areas as shown in Figure 7 and Figure 8 of the CTMP.

Refer to Section 4.9 for noise and vibration management measures related to construction traffic.

4.8 Noise and Vibration

The project Construction Noise and Vibration Management Plan (CNVMP) Section 8 outlines the proposed management in relation to noise and vibration from the project and any associated ancillary facilities and laydown areas. This describes the overall approach to managing and mitigating noise and vibration impacts as a result of the NCW project based on the predicted impacts as summarised in the project CNVMP.

Section 6.1 of the NCW CNVMP identifies the Noise Management Levels (NML) applicable for the construction and operation of the ancillary facilities at the most-affected receptor adjacent to each ancillary facility (within 30m). Furthermore table 6.1 of the NCW CNVMP provides NMLs for standard and out of hour's construction periods.

Any noise generated by on-site vehicle movements is considered as construction noise and managed holistically with on-site mobile plant in accordance with the Interim Construction Noise Guideline (ICNG), Sydney Metro City and Southwest Construction Noise and Vibration Strategy (CNVS) and the Industrial Noise Policy (INP) as well as in accordance with the CEMP ERAP 1 – Nosie and Vibration and additional mitigation measures described in Section 8.2 of the CNVMP.

The mitigation measures that will be adopted during the NCW project in accordance with the Construction Noise and Vibration Impact Statement (CNVIS) – which presents the methodology, findings and recommendations of the noise and vibration impact assessment completed for construction aspects for this project] are described in Table 8.1 and Table 8.3 of the project CNVMP and will be implemented for the works to manage and potentially reduce construction noise and vibration impacts.

It should be noted that all construction activities will be undertaken as per the hours of work listed in Section 4.11 below.

Noise and vibration monitoring for NCW works will be implemented in accordance with the Construction Noise and Vibration Monitoring Program at the commencement of works throughout the project (i.e. when new construction activities commence) to quantify the airborne noise, ground-borne noise and vibration levels associated with construction activities. Monitoring would also be required in the event of a complaint being received or during OOHW where the Additional Mitigation Measures (AMM) has identified monitoring.

Impacts from construction traffic will be mitigated by minimising movements at all times (both within the rail corridor and on external roads), minimising periods of idling, avoiding reversing and using non-tonal reversing alarms. Mitigation measures from Section 7 of the Sydney Metro City and Southwest Construction Noise and Vibration Strategy (CNVS) will also be implemented.

There is no limit on vehicles movements outside of normal construction hours (evenings, night and weekends). Vehicles movements will be minimised however the amount of vehicles movements required will be dependent on the scope of the OOHW. Any vehicles movements during these times will be assessed as part of an OOHW application.

4.9 Air Quality

Construction and operation of each ancillary facility is to be undertaken to minimise impacts identified in the CEMP ERAP 3 – Dust and Air Quality. Mitigation measures are to be applied to minimise dust generation from stockpiles, and prevent carrying of loose potentially dusty material from each site.

Where vehicles are used onsite they are to be switched off when not in use for an extended period of time. Plant will be well maintained and serviced to reduce emissions. Plant emissions are to be assessed as part of the pre-acceptance process.

4.10 Working Hours

Work is to be undertaken during periods specified in the planning conditions. Any work outside these periods will be subject to risk assessment and approval from Sydney Metro and the ER in consultation with the AA.

In accordance with Condition of Approval (CoA) – E36 - Construction, except as allowed by Condition E48 (excluding cut and cover tunnelling), must only be undertaken during the following standard construction hours:

- 7:00am to 6:00pm Mondays to Fridays, inclusive:
- 8:00am to 1:00pm Saturdays; and

- At no time on Sundays or public holidays

It is noted that all ancillary facilities will be established during standard construction hours.

EPL12208 Condition O5.1 states that maintenance or construction must be undertaken within the above timeframe. Note that the EPL defines maintenance as “repair, upgrading or alteration of existing track and ancillary works on the licensed premises” and construction as “erection or installation of new track and ancillary works”. It is noted that as per the definition within Schedule 1 of the POEO Act 1997, site compounds are not considered “ancillary works” under Rail Systems Activities.

Out of Hours Works (OOHW) at this stage are proposed for a number of phases during construction of the NCW. Any works required to be undertaken outside these hours will follow the Out of Hours Works procedures documented in the Construction Noise and Vibration Management Plan (CNVMP), and will not commence until appropriate approvals have been obtained. Any activities at the ancillary facilities or laydown areas specified within this plan will be subject to modelling (and monitoring as required) and will be included in an OOHW application.

CoA - E44(c) states that works may occur outside of standard construction hours where permitted under an EPL. EPL conditions O5.2 and O5.4 provide further detail on OOHW work requirements for the project. These requirements are further detailed within the CNVMP.

Schedule of Possession Work

The following Possessions have been nominated for the project, it should be noted that these works will be conducted during Out of Hours.

Table 6 – Schedule of Possession Work

WE	Date of Possession	Track Access Points
47	19/05/18 – 20/05/18	Drake St, Hopetoun Ave
08	25/08/18 – 26/08/18	Drake St, Hopetoun Ave
14	06/10/18 – 07/10/18	Drake St, Hopetoun Ave
17	27/10/18 – 28/10/18	Drake St, Hopetoun Ave
18	03/11/18 – 04/11/18	Drake St, Hopetoun Ave
20	17/11/18 – 18/11/18	Drake St, Hopetoun Ave
24	15/1218 – 16/12/18	Drake St, Hopetoun Ave
34	23/02/19 – 24/02/18	Drake St, Hopetoun Ave
40	06/04/19 – 07/04/19	Drake St, Hopetoun Ave
51	22/06/19 – 23/06/19	Drake St, Hopetoun Ave
05	03/08/19 – 04/08/19	Drake St, Hopetoun Ave
23	07/12/19 – 08/12/19	Drake St, Hopetoun Ave

4.11 Worksite Handover, Decommissioning and Rehabilitation

Full decommissioning of worksites (sites accepted by Sydney Trains during handover and Sydney Trains established sites) would be undertaken by LORAC. All construction access points will be restored to their preconstruction state or upgraded in accordance with the NCW design, to the satisfaction of the relevant authority.

Dilapidation surveys would be completed for adjacent roads and ancillary facility areas (and ancillary facilities if required) that don’t form part of the permanent works. Once the ancillary facility is no longer required for construction activities all materials, buildings and equipment will be removed and the site reinstated to their preconstruction condition.

De-mobilisation of the ancillary facility site will include the following activities:

- Remove all fencing / hoarding, signage and temporary ancillary facilities, including capping off or removing any underground utilities;
- Reinstate and stabilise the ground surface as per the original condition or as agreed in the relevant third party Development Agreement (Dilapidation Reports prepared before start of construction will be used to assess the quality of reinstated sites);
- Reinstate any existing or new planted areas, including maintenance;
- Reinstate any heritage items removed during construction; and
- Remove environmental controls (e.g. erosion and sediment controls) once the site is stabilised.

Rehabilitation will be carried out in accordance with the project approvals. This may include transplanting trees or re-turfing grassed areas, as well as maintenance requirements to ensure successful rehabilitation of revegetated areas.

The Elizabeth Street ancillary facility will be reinstated to the requirements of the land owner, Willoughby City Council.

The 2 Orchard Road ancillary facility will be reinstated to the requirements of the land owner Sydney Metro.

4.12 Cumulative Impacts

The NCW project site is situated adjacent to another large construction site (TSE) which will be operational at the same time and could potentially result in cumulative impacts in terms of traffic; however this would be managed through the implementation of the Construction Traffic, Management Plan (CTMP), including adherence to the haulage routes for the project in the CTMP.

Due to the location of the proposed ancillary facility sites and the distances between them, other cumulative impacts such as noise, dust and visual impacts to nearby receivers are not expected to be significant as the ancillary facility-based works will impact different receivers to the TSE project.

5. Environmental Risk Assessment and Control

Based on typical activities and associated impacts from ancillary facilities as identified above, the overall impacts/risks to the environment as a result of the ancillary facilities are listed in the Table 7 below.

The risks above have been assessed as per the Risk Assessment within Appendix C of the NCW CEMP. In accordance with the Environmental Risk Assessment Ranking (pages 107-108 of the NCW CEMP) each aspect has been assigned a risk rating of either “Low”, “Medium”, “High” or “Extreme”.

Significant environmental issues, with a risk ranking of High or Medium, will be controlled to a degree which is commensurate with the level of risk and the level of influence which the Company has over these issues. The control measures to address these issues are documented in Environmental Risk Action Plans (**Appendix D**) of the CEMP. In addition, each specific project area will also be managed in accordance with the project Environmental Control Maps (ECM).

Activities, aspect or impacts that represent an extreme risk, after control measures have been applied must be reviewed/ redesigned or have approval of the Regional Environmental Manager. There have been no instances of an environmental aspect being assessed as an extreme risk on NCW to date.

The key environmental risks as defined in the CEMP will be reviewed as and when required during the course of the contract when the following situations arise:

- 6 monthly during the periodic review of the Environmental Management Plan
- Client recommendations for changes (particularly following initial review)
- Changes to the Company’s standard system
- Opportunities for improvement or deficiencies in the project system are identified.
- Following an audit of the system or the occurrence of significant incidents and non-conformances.

It is expected that the Environmental Audits and Management Reviews will be within 3 months of commencing on site and approximately every 3-6 months thereafter.

Audits will be undertaken in accordance with Section 17 of the project CEMP with an audit report issued to management for action. Actions are to be followed up and closed out within one month of the issue of the report. The audit report is to be captured within the Laing O’Rourke assurance application Impact.

If additional risks are encountered on site, these will be addressed by updating the project CEMP and the CAFMP.

Table 7 – Summary of risks at Ancillary locations

Establishment of ancillary facilities and locations

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating			Management of Residual Risk
		P X	C =	Risk		P X	C =	Risk	
Noise									
Noise from establishment/ construction activities resulting in impact to residents and other sensitive receivers	Disturbance to residents or neighbouring businesses. Potential for complaints.	L	3	H	Standard mitigation measures will be applied as per the Sydney Metro City and South West Construction Noise and Vibration Strategy, in accordance with E32 as approved by DP&E. Implementation of Construction Noise and Vibration Management Plan and Standard/Additional mitigation measures as per Section 8 of the CNVMP. Control Measures as per Appendix D – Noise and Vibration to be implemented. Consult with the community in relation to upcoming activities that may result in concern. Monitor noise for compliance as the works progress at receiver locations. Provide periods of respite for high noise generating activities. Apply noise mitigation measures during entire site establishment. Noise efficient equipment to be used on site.	P	3	M	Noise performance will be continually monitored as per the requirements of the Construction Nosie and Vibration Management Plan. Additional mitigation measures to be applied as per Section 8.2 of the CNVMP and Section 7 of the CNVS. Where high impact noise is required, it will be restricted to the conditions of EPL 12208 with respite periods implemented.
Traffic									
Temporary loss of street car parking in adjacent residential streets and commercial areas during deliveries.	Loss of parking availability to adjacent residential and commercial properties could result in community complaints.	P	4	M	Community notifications. Site vehicles shall be parked within the rail corridor and not affect public parking area. Develop Traffic Management Plan / Traffic control procedures.	U	4	L	Complete regular toolbox talks on how to minimise impacts in relation to traffic. Undertake regular inspections of worksite and adjacent streets. Supervisor and traffic controller to enforce traffic management requirements
General construction traffic disturbing public access between local roads.	Disturbance to local residents resulting in complaints being made, limited access, potential for delays at local road access	P	4	M	Deliveries of plant and materials shall be undertaken outside of peak periods where possible. Site vehicles shall be parked within the rail corridor and not affect public parking areas. Scheduled road movements shall be minimised where possible and avoid local roads. Oversized deliveries would be undertaken in accordance with the requirements of NSW Police or Roads and Maritime Services.	U	4	L	Complete regular toolbox talks on how to minimise impacts in relation to traffic. Undertake regular inspections of worksite and adjacent streets.

	points resulting in complaints.				Approved Traffic Management Plans in consultation with relevant authorities. Detour routes to be advertised/ notified. Approved access routes, detailed Traffic Control Plans. Clear notifications / signage.				Supervisor and traffic controller to enforce traffic management requirements
Management of heavy vehicles / access routes.	Complaints from sensitive receivers due to increased level and frequency of noise.	**P**	**4**	**M**	Delivery drivers provided with haulage routes prior to travelling to site and delivery times. Deliveries of plant and materials shall be undertaken outside of peak periods where possible Site vehicles shall be parked within the rail corridor and not affect public parking areas Scheduled road movements shall be minimised where possible Oversized deliveries would be undertaken in accordance with the requirements of NSW Police or Roads and Maritime Services. Designated access routes. Approved Traffic Management Plans. Community Notifications. Pedestrian management with traffic controller in place where required.	**U**	**4**	**L**	Complete regular toolbox talks on how to minimise impacts in relation to traffic. Permits from local council and/or RMS
Vehicle deliveries	Non-conformance with project requirements. Noise impact to community / potential complaints.	**P**	**4**	**M**	Personnel training of noise awareness to community included in induction and toolboxes. Induction on Construction Hours for deliveries. Communication of delivery times to suppliers. Community Notifications on project activities occurring locally. Code of conduct / selection criteria in place for subcontractors. Out of hours works approval where required (Environmental Protection Licence/ Planning Approval/ Council) Approved traffic/access routes. Planning and staging of works in approved hours as much as practical.	**U**	**4**	**L**	Delivery drivers provided with haulage routes prior to travelling to site and delivery times. Complete regular toolbox talks on how to minimise impacts in relation to traffic.
Visual Amenity									
Temporay storage containers during establishment of ancillary facilities Plant and equipment movement	Surrounding aesthetic temporary altered during construction	**U**	**4**	**L**	The work area shall be maintained in an orderly manner Temporary acoustic fencing applied on boundary of ancillary facilities Screening applied to fencing surrounding ancillary facilities	**U**	**4**	**L**	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition

Operation of ancillary facilities and locations

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating			Management of Residual Risk
		P X	C =	Risk		P X	C =	Risk	
Noise									
Noise from general activities resulting in impact to residents and other sensitive receivers	Disturbance to residents or neighbouring businesses. Potential for complaints.	L	3	H	Standard mitigation measures will be applied as per the Sydney Metro City and South West Construction Noise and Vibration Strategy, in accordance with E32 as approved by DP&E. Implementation of Construction Noise and Vibration Management Plan Control Measures as per Appendix D – Noise and Vibration to be implemented. Consult with the community in relation to upcoming activities that may result in concern. Monitor noise for compliance as the works progress at receiver locations. Provide periods of respite for high noise generating activities. Apply noise mitigation measures during entire site establishment. Noise efficient equipment to be used on site.	P	3	M	Noise performance will be continually monitored as per the requirements of the Construction Nosie and Vibration Management Plan. Where high impact noise is required, it will be restricted to the conditions of EPL 12208 with respite periods implemented.
Noise during works required to be undertaken out of standard construction hours.	Disturbance to residents or neighbouring businesses with potential for complaints.	L	3	H	Implement noise mitigation strategies for out of standard hours work. Monitor noise for compliance to project goals. Mitigation measures will be applied as per the Sydney Metro City and South West Construction Noise and Vibration Strategy, in accordance with E32 as approved by DP&E. Furthermore standard and specific mitigation measures for sensitive receptors around the NCW works will be applied as per the Construction Nosie and Vibration Impact Statement – Section 8	P	3	M	Noise performance will be continually monitored as per the requirements of the Construction Nosie and Vibration Management Plan. Where high impact noise is required, it will be restricted to the conditions of EPL 12208 with respite periods implemented.
Waste									
Waste disposal during operation of facilities.	Incorrect disposal of waste, further costs incurred for classifications and disposal, fines may be issued.	P	2	H	Implement Project Waste Management Strategy. Identify opportunities to incorporate recovered materials into the permanent works. Provide facilities on site for source separation and recycling. Ensure accurate waste records are retained. Removal of wastes from the site would only be undertaken by a licensed contractor as required by the POEO Act and with appropriate approvals, if required, for contaminated materials, etc.	U	2	L	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition. Monitor and ensure reporting of all movements of waste form the worksite

					All material to be recovered off-site to be appropriately classified in accordance with the Resource Recovery Exemptions. All material that requires off-site disposal to be appropriately tested and classified against the Waste Classification Guidelines (DECC, 2008).				
Hazardous Materials									
Storage of hazardous substances, leaking plant and equipment and spillage from refuelling.	Localised ground contamination / pollution of stormwater and requiring clean-up and/or receiving fines. Risk of igniting volatile substances. Unauthorised access to site / potential vandalism/damage leading to pollution.	**U**	**3**	**M**	Induction, toolbox talks and training on appropriate handling and storage of liquids. All storm water drains should be identified prior to works. No fuels to be stored on site Storage areas to be away from sensitive areas and appropriately bunded. MSDS approved prior to bringing hazardous substances on site including risk assessment. Plans showing storage locations and associated controls e.g. spill kits, etc. (Environmental Control Maps). Training in use of spill kits Contingency plans would be developed to deal with any spills which might occur during construction. Clearly label containers. Regular auditing and inspection of storage areas and materials. Make storage areas restricted access areas. Reduce/eliminate need for hazardous substances. Ensure all work sites are secure before leaving the site. All liquids i.e. paint etc. are to be securely locked away at the end of each day.	**R**	**3**	**L**	Regular inspections of storage areas.
Fuel contaminated runoff from construction works leaving site	Fuel contaminated runoff entering stormwater or waterways (i.e. polluting - not compliant with discharge criteria).	**U**	**3**	**M**	All storm water drains should be identified prior to works and controls implemented. No fuels to be stored on site Appropriate bunding/storage of substances. Toolbox on site procedures for sediment controls and chemical storage. Educate site staff on project conditions and consequences of prosecution.	**R**	**3**	**L**	Regular inspections of works site to ensure all controls are in good health and working.
Air Quality									
General facility use. Movement of plant and machinery.	Dust activity in close proximity to residential and commercial premises, complaints received.	**U**	**4**	**L**	Inductions and toolbox training on Dust and Air Quality Management. Provide dust mitigation measures through water sprays/misting. Erosion and Sediment Control Plans approved before works commence. Controls are then reviewed for maintenance.	**U**	**4**	**L**	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.
Exhaust from plant and equipment.	Emissions resulting in air pollution.	**U**	**4**	**L**	Inductions and toolbox training on Dust and Air Quality Management. Well maintained plant/ equipment and pre-start checks and servicing. Non-complaint vehicles removed from site / repaired.	**R**	**4**	**L**	Review plant check list prior to operating on site.

									Undertake verification checks as required.
Traffic									
Temporary loss of street car parking in adjacent residential streets and commercial areas during operation of facility.	Loss of parking availability to adjacent residential and commercial properties could result in community complaints.	**P**	**4**	**M**	Community notifications. Site vehicles shall be parked within the rail corridor and not affect public parking area. Develop Traffic Management Plan / Traffic control procedures.	**U**	**4**	**L**	Complete regular toolbox talks on how to minimise impacts in relation to traffic. Undertake regular inspections of worksite and adjacent streets. Supervisor and traffic controller to enforce traffic management requirements
General construction traffic disturbing public access between local roads.	Disturbance to local residents resulting in complaints being made, limited access, potential for delays at local road access points resulting in complaints.	**P**	**4**	**M**	Deliveries of plant and materials shall be undertaken outside of peak periods where possible. Site vehicles shall be parked within the rail corridor and not affect public parking areas. Scheduled road movements shall be minimised where possible and avoid local roads. Oversized deliveries would be undertaken in accordance with the requirements of NSW Police or Roads and Maritime Services. Approved Traffic Management Plans in consultation with relevant authorities. Detour routes to be advertised/ notified. Approved access routes, detailed Traffic Control Plans. Clear notifications / signage.	**U**	**4**	**L**	Complete regular toolbox talks on how to minimise impacts in relation to traffic. Undertake regular inspections of worksite and adjacent streets. Supervisor and traffic controller to enforce traffic management requirements
Management of heavy vehicles / access routes.	Complaints from sensitive receivers due to increased level and frequency of noise.	**P**	**4**	**M**	Delivery drivers provided with haulage routes prior to travelling to site and delivery times. Deliveries of plant and materials shall be undertaken outside of peak periods where possible Site vehicles shall be parked within the rail corridor and not affect public parking areas Scheduled road movements shall be minimised where possible Oversized deliveries would be undertaken in accordance with the requirements of NSW Police or Roads and Maritime Services. Designated access routes. Approved Traffic Management Plans. Community Notifications. Pedestrian management with traffic controller in place where required.	**U**	**4**	**L**	Complete regular toolbox talks on how to minimise impacts in relation to traffic. Permits from local council and/or RMS
Vehicle deliveries	Non-conformance with project requirements.	**P**	**4**	**M**	Personnel training of noise awareness to community included in induction and toolboxes. Induction on Construction Hours for deliveries.	**U**	**4**	**L**	Delivery drivers provided with haulage routes prior

	Noise impact to community / potential complaints.				Communication of delivery times to suppliers. Community Notifications on project activities occurring locally. Code of conduct / selection criteria in place for subcontractors. Out of hours works approval where required (Environmental Protection Licence/ Planning Approval/ Council) Approved traffic/access routes. Planning and staging of works in approved hours as much as practical.				to travelling to site and delivery times. Complete regular toolbox talks on how to minimise impacts in relation to traffic.
Visual Amenity									
Ancillary facilities (location) Temporay storage containers Plant and equipment movement Stockpiles and laydown Lighting	Surrounding aesthetic temporary altered during construction Lighting towers used during out of hours works may spill on nearby residents	**U**	**4**	**L**	The work area shall be maintained in an orderly manner Lighting required during night works shall be directed towards the work area and are from adjacent sensitive receivers. Temporary acoustic fencing applied on boundary of ancillary facilities Screening applied to fencing surrounding ancillary facilities	**U**	**4**	**L**	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition

6. Management / Mitigation Measures

This Section describes the overall approach and principles associated with managing and mitigating environmental impacts and risks associated with ancillary facilities for the Project

6.1 Site Environment Control Maps

The project Environmental Control Maps are prepared to assist in the planning and delivery of the Northern Corridor Works. It is specific to the site or work area and outlines the location of protection measures, monitoring requirements, and environmentally sensitive areas. It is the practical application of the proposed control measures.

The Environmental Control Map will be used in Northern Corridor Works inductions, work site set-up, reviewing ongoing environmental performance, included as information in tender documents to subcontractors were applicable and in support of ancillary environmental approvals.

The site specific Environmental Control Map shall include but not limited to:

- The worksite layout and boundary, including entry/exit points and internal roads and clearing limits;
- Location of adjoining land-use and noise assessment at nearest noise sensitive receivers; to include noise management plans.
- Key contact names and phone numbers
- Location and type of sediment and erosion control measures, including size / capacity of detention basins and wheel wash facilities;
- Location of site offices;
- Location of spill containment and clean-up equipment;
- Location of worksite waste management facilities;
- Hours of work applicable to the worksite;
- Document control and approval details;
- Location of environmentally sensitive areas (e.g. threatened species, critical habitat, contaminated areas, heritage zones, etc.);
- Vegetation and trees to be protected;
- Dust control and management through the application and engagement of a water cart on site;
- Location of known heritage (indigenous and non-indigenous) items;
- Location of stormwater drainage and watercourses leading to / from the worksite;
- Specific environmental management requirements from licenses, approvals or permit conditions; and
- Key environmental risk issues and the specific mitigation measures.

The plan is in addition to any erosion and sediment control plans or other documentation that specify the location of environmental controls on site.

The ECMs will initially be prepared to address site establishment works and will be progressively updated as construction progresses and conditions change within the NCW project area. Design of ECMs will be undertaken in accordance with Managing Urban Stormwater: Soils and Construction. Volume 2D: Main Road, DECC (2008) and Managing Urban Stormwater: Soils and Construction. Volume 1 of the 'Blue Book', Landcom (2004).

The Environment Representative will endorse each ECM to ensure compliance with the Project Approval prior to the commencement of works and re-endorse the ECMs as they are progressively updated to address tunnelling operations.

ECMs will be displayed at the crib sheds of Cleland Rd ancillary facility. Copies of ECMs will also be provided to Project Managers, Construction Managers, Superintendents and Supervisors, so they can be communicated amongst their teams

6.2 Mitigation and Management

As set out above, the ECMs will reference the Environmental procedures applicable to NCW project. Environment procedures detail key environmental management processes for the construction workforce, how they need to be carried out, and hold points for the implementation of controls, management and mitigation measures. Where possible, procedures include flow diagrams for any required processes or steps to be undertaken and provide an easy reference point for all site personnel. They provide a comprehensive and informative means of communicating environmental management requirements to site personnel.

Key mitigation measures for the project are defined in Appendix of the CEMP. Any additional Environment procedures will be developed as required during delivery of the project. The Environment procedures are a key site management tool and will be revised and updated as construction progresses and in response to any issues identified during implementation.

Specific noise and vibration mitigation measures for the project are define in Section 8 of the CNVMP.

7. Responsibilities and Authorities

Authorities and responsibilities for all Laing O'Rourke positions are defined and communicated in Job Descriptions and project documentation.

Key responsibilities and authorities for Laing O'Rourke personnel include:

Table 8- Key Responsibilities and Authorities

Position	Key Responsibilities and Authorities
Project Leader	• Ensure that project responsibilities and authorities are defined and communicated • Provide adequate resources to meet environmental objectives • Ensure that the CAFMP is effectively implemented and maintained • Take action to resolve environmental non-conformances and incidents • Ensure suppliers and subcontractors comply with requirements • Must complete corporate and project induction covering environmental responsibilities and LORs' environmental management system • Report environmental incidents to the client / local authorities as required
Environmental and Sustainability Manager	• Ensure that the CAFMP is effectively established, implemented and maintained at the project level • Ensure compliance with all relevant statutes, regulations, rules, procedures, standards and policies • Liaise with the Principal's Environmental Representative and/or Superintendent on environmental issues, including the written notification of non-conformances (incidents, emergencies or deviations from the CAFMP) • 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 • Ensure that non-conformances and environmental incidents are recorded and written reports provided to the Client's Representative and Environmental Manager within 24-hours. Liaise with the required stakeholders to confirm the nature of the corrective action required and comply with the timeframe within which corrective actions must occur. • Ensure that environmental controls, materials and equipment are maintained
Construction Manager	• Supervise all site construction activities and personnel by ensuring that 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 PEM • Report all environmental incidents • Take action to resolve non-conformances and incidents • Must complete corporate and project induction covering environmental responsibilities and LORs' environmental management system.
Safety Manager	• Reports to the Project Leader and Construction Manager • Ensure compliance with all relevant WHS statutes, regulations, rules, procedures, standards and policies • Ensure all H&S incidents and near misses are recorded and written reports provided to the Client's Representative and Environmental Manager within 24-hours • Take action to resolve non-conformances and incidents • Must complete corporate and project induction covering health and safety responsibilities and LORs' safety management system.

Position	Key Responsibilities and Authorities
Procurement Personnel	• Reports to the Project Leader and Construction Manager • Carefully select suppliers and subcontractors based upon their ability to meet stated requirements • Ensure that purchase orders and agreements include environmental requirements as necessary • Where practical, select materials which are “environmentally friendly” • Must complete corporate and project induction covering environmental responsibilities and LORs’ environmental management system
Sub-Contractors	• Comply with all legal and contractual requirements • Comply with site environmental requirements • Comply with management / supervisory directions • Participate in induction and training as directed • Report all incidents • Environmental qualifications as required by contract • Must complete project induction covering environmental responsibilities and LORs’ environmental management system
All Personnel	• Comply with the relevant Acts, Regulations and Standards • Comply with the Company’s environmental policy and procedures • Promptly report to management on any non-conformances, 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
Independent Environment Representative	• Consider and inform the Secretary on matters specified in the terms of the planning approval; • Consider and recommend any improvements that may be made to work practices to avoid or minimise adverse impact to the environment and to the community • Review all documents required to be prepared under the terms of the planning approval, ensure they address any requirements in or under the planning approval and if so, endorse them before submission to the Secretary (if required to be submitted to the Secretary) or before implementation (if not required to be submitted to the Secretary); • Consider any minor amendments to be made to the CEMP, CEMP sub-plans and monitoring programs that comprise updating or are of an administrative nature, and are consistent with the terms of the planning approval and the CEMP, CEMP sub-plans and monitoring programs approved by the Secretary and, if satisfied such amendment is necessary, approve the amendment. This does not include any modifications to the terms of the planning approval; • Assess the impacts of minor ancillary facilities as required by Condition A18 of the planning approval; and prepare and submit to the Secretary and other relevant regulatory agencies, for information, a monthly Environmental Representative Report detailing the ER’s actions and decisions on matters for which the ER was responsible in the preceding month (or other timeframe agreed with the Secretary). The Environmental Representative Report must be submitted within seven (7) days following the end of each month for the duration of works and construction of the CSSI, or as otherwise agreed with the Secretary.

Position	Key Responsibilities and Authorities
Acoustics Advisor	• Review all noise and vibration documents required to be prepared under the project approval and, should they be consistent with the CoA, endorse them prior to submission to the Secretary (if required to be submitted to the Secretary) or before implementation (if not required to be submitted to the Secretary); • Consider and provide recommendations on improvements that may be made to works practices to avoid or minimise noise and vibration impacts; • Regularly monitor the implementation of all noise and vibration documents required to be prepared under the project approval to ensure implementation is in accordance with what is stated in the document and the project approval; • Notify the Secretary of noise and vibration incidents in accordance with CoA A41; • Consider relevant minor amendments made to the CEMP, relevant sub-plans and noise and vibration monitoring programs that require updating or are of an administrative nature, and are consistent with the terms of the project approval and the management plans and monitoring programs approved by the Secretary and, if satisfied such amendment is necessary, endorse the amendment. • Assess the noise impacts of minor ancillary facilities as required by Condition A18 of the project approval
Community Place Manager	• Provide key stakeholders and the community with information about construction progress. • Ensure people understand the scope of the works and mitigation measures. • Ensure key stakeholders and the community understand the proposed timing of the works. • Take steps to minimise potential impacts from construction works. • Work closely with the Northern Corridor Works to coordinate consultation activities with the community and other stakeholders. • Be the single point of contact for affected stakeholder and the community and the project team, who will proactively doorknock properties and also respond quickly to any issues or complaints raised. • Be available at all times that any activities are being performed on any construction site to answer any questions, concerns, complaints or enquires in relation to activities. • Produce and distribute all community notifications relating to contractor activities. • Develop, produce and distribute site specific quarterly newsletters to inform the community of the progress and key milestones or activities taking place during the following three months. • Distribute newsletters to all affected commercial and residential properties within a minimum of 500m radius of the construction site. • Record all interactions with stakeholders on Consultation. • Provide an initial response to email/written correspondence (letters/faxes) within 48 hours. • Provide feedback to requests for information from the Sydney Metro Communication and Engagement team Sydney Metro Communication and Engagement team within two hours. • Refer enquiries not associated with contractor activities to Sydney Metro Project Communications team immediately. • Record all interactions with stakeholders on Consultation Manager in accordance with Consultation Manager data entry procedure within 48 hours. • Manage calls to the community information line and redirect to appropriate team members or contractors. • Provide at least an oral response to calls forwarded from the community information line within two hours unless otherwise agreed. • Lead or be involved in any consultation activities arising from community enquiries as notified by the contractor.

8. Community Engagement

LORAC's engagement strategy aims to inform and engage community and relevant stakeholders in a constructive, transparent and fair process. To ensure this happens, detailed and timely information will be provided to Sydney Metro to assist them with fulfilling the consultation and notification requirements. Further details of LORAC's commitment to community consultation can be obtained from the Sydney Metro Community Consultation Strategy – Early Works (CCS-EW).

The CCS-EW describes the approach Transport for NSW will use to manage engagement and ongoing consultation with stakeholders and the community with an interest in, or potentially affected by Sydney Metro City & Southwest early works between Chatswood and Sydenham.

Specifically the CCS-EW Section A.2 Chatswood to Artarmon rail corridor provides a summary of the potential issues and stakeholder overview for Northern Corridor Works project.

Engagement before and during early works, will lay a good foundation for engagement throughout major construction by the Principal contractors. Engagement will focus on stakeholders and the community adjacent to construction sites who have an interest in, or who are likely to be affected by early works activities.

Provide key stakeholders and the community with information about construction progress.

- Ensure people understand the scope of the works and mitigation measures
- Ensure key stakeholders and the community understand the proposed timing of the works
- Take steps to minimise potential impacts
- Maintain and protect Sydney Metro's reputation.

A full suite of Sydney Metro's communication tools are outlined in the Overarching Community Communications Strategy. The stakeholder and community engagement tools to be used during early works will include:

- Place Managers to be the single point of contact for affected stakeholder and the community and the project team, who will proactively doorknock properties and also respond quickly to any issues or complaints raised;
- Notifications, signage, newsletters including maps to keep stakeholders and the community informed, explaining the purpose of the works, what they can expect, and any potential impacts (delivered in paper or electronic format);
- Newsletter to provide a three month look-ahead to properties within 500 metres of the construction site on a quarterly basis;
- Fact sheets (as required) to provide detail on aspects of the work and the project;
- Newspaper advertising to advise of work starting, the community contact facilities and road closures for example;
- Mobile community information centre;
- Communications Management Control Group, Sydney Metro will establish a new group or attend existing forums to discuss project activities with neighbouring infrastructure projects.

In relation to specific consultation conducted adjacent to Ancillary facilities, please refer to Table 9 below.

Further consultation with sensitive receptors around Ancillary Facilities will be undertaken as the project progresses where sensitive periods can be refined based on the type of activities, expected impacts and the particular circumstances of the receptor at that time. All consultation will be undertaken prior to the start of the relevant portion of works predicted to affect those receptors.

Copies of specific consultation can be found on the Sydney Metro website https://www.sydneymetro.info/station/waitara-waverton.

Table 9 – Community Consultation Undertaken

Date	Receptors	Summary
October 2016	Cleland Road, Artarmon	Community notification distributed to residents in Cleland Road, Olive Lane and Parkes Road, notifying residents about temporary site compound will be established within the rail corridor at Cleland Road, Artarmon
January 2018	Drake Street and Brand Street, Artarmon	94 community notifications distributed to residents living in and near Drake Street, Artarmon (Hampden Road (rail corridor side), Brand Street, Hawkins Street, Drake Street, Raleigh Street and to properties in Raleigh Street).
April/May 2018	Elizabeth Street and Brand Street, Artarmon	Doorknock residents 100 meters from location about temporary site office plans for the Old Artarmon Library at 2 Elizabeth Street, Artarmon. Notification to follow once approved. Residents briefed about the project and the use of the site, visual impacts associated with use. Residents briefed about standard and out of hours use of the site Businesses consulted regarding onsite parking for the project with no concern or impact to customer parking raised. Deliveries to businesses discussed and was agreed the se of the site would have no disruption to deliveries. Specific notification distracted on the 27 April, weekly email updates to affected residents and businesses regarding ongoing works and site specific impacts Artarmon progress Associated (APA) briefed on the 2 May regarding project works and the use of the Elizabeth Street site as a project office, no comments or feedback noted. APA to circulate minutes in the next Artarmon Gazette which is received by over 5000 members. Willoughby City Council to not place screening around the site through license deed for DP441481. In addition the site has been beautified through painting, bricklaying and revegetation further minimizing the visual impact of the project office at the site.

9. Training, Awareness and Competence

Environmental training will be carried out in accordance with Section 9 of the project CEMP.

All employees will receive suitable environmental induction / training to ensure that they are aware of their responsibilities and are competent to carry out the work.

Environmental requirements will be explained to employees during site induction and on-going training via toolbox meetings, briefings, notifications and the like.

All employees (including subcontractors) will receive induction/ training in the following:

- Environmental Policy
- Site environmental objectives and targets
- Understanding individual authorities and responsibilities
- Site environmental rules
- Potential consequences of departure from rules
- Emergency procedure and response (e.g. Spill clean-up)
- Basic understanding of their legal obligations

Personnel performing tasks, which can cause significant environmental impacts, will be competent based on appropriate education, training and / or experience.

All Laing O'Rourke operational staff on this project will be provided with training in the requirements and implementation of the project CEMP.

Initial training in the project CEMP shall be undertaken within 1 month of the HSEQ Launch.

Training in the operation and implementation of Laing O'Rourke's Environmental Management System shall be provided for all operational staff. Training in aspects outlined below shall be undertaken as the project progresses. An outline of the proposed training is provided below. The training shall be scheduled to reflect the requirements of the construction program.

It should be noted that upon commencement of new personnel, the induction process covers the environmental management and legislative requirements specific to the project.

Ongoing training will be undertaken through toolbox talks and daily pre-start meetings. These will include environmental and community issues relevant to the site personnel and the aspects, impacts and risks pertaining to the proposed works. Attendance of all work meetings is recorded and signed off by personnel in attendance.

All required evidence of training is maintained on the On Site Track Easy System (Pegasus). The Site Induction Register is maintained on the projects K/; Drive. Staff qualifications are maintained on LOR's Success Factors portal.

All training and tool box meetings will be recorded. The name of trainee, when the person was trained, the name of the trainer, and a general description of the training content will be included in the recording of training and tool box meetings.

10. Enquiries, Complaints

All environmental enquiries and complaints will be managed in accordance with Section 16 of the project CEMP. This includes internal and external notification, recording, reporting and response processes.

All communications from the Client (including CAR's and Audit reports) expressing concern or dissatisfaction with the implementation or operation of the CEMP shall be documented in the Assurance Application in Laing O'Rourke's HSE online management system and database "IMPACT".

Public Complaints shall be logged into IMPACT and are to be responded to in accordance with the Sydney Metro Community Communication Strategy (CCS). Environmental Management related complaints will be forwarded to the Environment Manager.

Management system non-conformances and recurring environmental incidents will be handled in accordance with the Environmental Management System – Corrective and Preventative Action.

Corrective and preventive actions may include:

- Site remediation and rehabilitation
- Increased site inspections and monitoring
- Increase environmental awareness (re-training, tool-box meetings)
- Review and improve existing environmental controls and job safety analyses/ work method statements

Lines of enquiries will be made available for the project, including a 24-hour community information line, which has already been set up (1800-171-386), a postal address and email address for receipt of complaints and enquiries, as well as a Project website which includes all these contact details. Community notifications will also include relevant project contact details in the event of an enquiry or complaint.

Additionally business cards containing project contact information for the community will be available at each site for project personnel to issue if approached directly by a member of the public with an enquiry or complaint.

If any public authority has a request or complaint this should be raised with Sydney Metro who will consider their request or carry out an initial investigation into the complaint. Should an environmental non-conformance be identified as a result of the request or complaint, a non-conformance report will be raised on their behalf by Sydney Metro.

11. Incidents Management

Environmental incidents will be managed in accordance with the Environmental Incident Management Procedure provided in Section 16 of the project CEMP.

Environmental control and performance will be continually monitored on site, with site inspections completed by the Environmental Manager and as required by TfNSW's appointed Environmental Representative. All identified incidents will be registered on IMPACT, Laing O'Rourke's online incident reporting system. IMPACT will allocate a number to the identified incident to ensure traceability. Depending on the severity of the incident, it will be categorised as Class 1, Class 2 or Class 3 with Class 1 being the most serious and Class 3 being the least serious. Incidents are to be logged in Impact within 48 hours of occurrence. For Class 1 and Class 2 incidents, an investigation must also be logged into IMPACT. The Regional Environmental Manager, HSE General Manager and Head of Legal shall be notified by telephone as soon as practicable after any Actual or Potential Class 1 & Class 2 Incidents.

The classifications are explained in detail with examples in the Laing O'Rourke Environmental Incident Classification Guidelines which is available in the Environmental Management System.

Class 3 Incidents

Where a Class 3 incident has occurred, the Laing O'Rourke Construction Manager or immediate supervisor is to be informed. Class 3 incidents must be logged directly into IMPACT.

Actual or Potential Class 2 Incidents

Where an actual or potential Class 2 incident has occurred, Group Management is to be informed via the Project Leader.

Class 1 Incidents

Where a Class 1 incident occurs the Laing O'Rourke HSE General Manager and the Head of Legal are to be informed immediately. The requirements of the Figure 1 in **Appendix H** of the CEMP are to be applied to all actual or potential Class 1 environmental incidents.

All Class 1 & Class 2 incidents will be reported to the relevant State & Federal Authorities as required under relevant Acts & Regulations. Further details are provided in the section 16.2 - External Incident Reporting, of the project CEMP.

Correspondence with Sydney Metro Incident Classifications

All environmental incidents and non-conformances must also be reported to the ER and Sydney Metro in accordance with TfNSW Environmental Incident Classification Procedure SMNW ES-PW-303/1.0. The corresponding Sydney Metro incident classifications are outlined below.

Table 10- Environmental Incident Classification

LOR Incident Classification					
Class 3			**Class 2**	**Class 1**	
Class Three Environmental Incidents typically cause short term or nuisance damage. The damage is easily rectified usually within one day. Class 3 incidents do not cause medium or long term damage.			Class Two Environmental Incidents 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.	Class One Environmental Incidents 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.	
Corresponding Sydney Metro Incident Classification					
C6	**C5**	**C4**	**C3**	**C2**	**C1**
No appreciable changes to environment and/or highly localised event	Change from normal conditions within environmental regulatory limits and environmental effects are within site boundaries	Short-term and/or well-contained environmental effects. Minor remedial actions probably required	Impacts external ecosystem and considerable remediation is required	Long-term environmental impairment in neighbouring or valued ecosystems Extensive remediation required	Irreversible large-scale environmental impact with loss of valued ecosystems

12. Monitoring, Measurement and Reporting

All monitoring and reporting will be undertaken in accordance with Section 15 of the project CEMP.

12.1 Inspections

Inspections of construction ancillary facilities and worksites will include:

- compliance with erosion and sediment (ESC) controls;
- any tracking of material onto the surrounding road network;
- waste storage, collection and disposal;
- appropriate chemical and fuel storage;
- inspection of hoardings and boundary fences for graffiti or advertising material; and
- compliance with traffic control plan measures.

The NCW project Environmental and Sustainability Manager (ESM) is responsible for ensuring effective environmental inspections are carried out and appropriately documented as required using E-T-8-1227 Environmental Inspection Report. This will be a combination of informal daily checks by the Site supervisor, noted in the Daily Site Report, as well as in the site environmental checklist E-T-8-0905 Management H & S and Environmental Checklist. These inspections will be carried out weekly and following heavy rain events, and will ensure environmental controls as per the ECMs contained within the project CEMP.

The ESM would be in attendance at any periodic ER site inspections. The ESM will be responsible for actioning and responding to any identified corrective actions in accordance with the CAR Register with timeframes as agreed with the ER.

Non-conformance to operational control procedures or to the Environmental Management System that cannot be rectified immediately will be recorded and addressed by logging it into the IMPACT via the assurance application.

Where environmental inspection or monitoring outcomes will be recorded into IMPACT, a workplace visit is to be created and the associated actions generated. Where deemed necessary by the Project Environmental Manager and as a result of revisions to project scope or changes to project risks, additional Environmental Risk Action Plans to control potential impacts will be developed.

12.2 Monitoring

Project environmental performance will be measured through regular environmental performance reviews. These will be based on the measurable outcomes identified in each environmental management plan, including the CEMP and Subs Plans.

A Construction Noise and Vibration Monitoring Program has been developed for the Project. The Monitoring Program is supplementary to the Construction Noise and Vibration Management Plan.

Monitoring of works associated with the establishment and operation of the ancillary facilities will be undertaken in accordance with the requirements of the Sydney Metro City & Southwest Construction Noise and Vibration Strategy (CNVS), Conditions of Approval and EPL. There are no high impact noise works associated with the establishment or operation of the ancillary facilities. The establishment of the ancillary facilities will occur during normal construction hours. The ancillary facilities will be used during standard and Out of Hours construction hours. Use of the ancillary facilities outside of standard construction hours will be subject to noise modelling and will be included in an OOHW Application. Monitoring will occur at the nearest sensitive receiver to the ancillary facilities where noise modelling indicates that noise levels will exceed the levels specified within Table 14 of the CNVS.

There will be no vibratory works associated with the establishment or operation of the ancillary facilities identified within this plan. Furthermore, there are no heritage structures or sensitive facilities within the screening zone of plant that will operate within the ancillary facilities. As such, there will be no vibration monitoring unless there is a complaint from a nearby property.

Any monitoring to occur would be attended monitoring, unless otherwise requested and agreed by the Department of Planning and Environment, the NSW EPA, Sydney Metro or an affected resident or business.

Project environmental performance is measured through compliance with the various environmental management plans including the CEMP and Sub Plans, and through the ongoing environmental monitoring program as outlined in the Sub Plans.

Should an environmental non-conformance be identified as a result of a monitoring result, a non-conformance report will be raised on their behalf by the NCW ESM in accordance with the Project Quality Management Plan.

12.3 Non-Compliances and Corrective Actions

Non-conformance arising out of the above monitoring, inspections and audit outcomes shall be recorded and addressed by raising a Non-Conformance Report F 0103 and logged within IMPACT. TfNSW or the Environmental Representative may raise non-compliances against environmental requirements. All communications from TfNSW (including CAR's and Audit reports) expressing concern or dissatisfaction with the implementation or operation of the project CEMP shall be documented in the Assurance application in IMPACT. Management system non-conformances and recurring environmental incidents will be handled in accordance with the LOR EMS – Corrective and Preventative Action Procedure by the ESM.

12.4 Reporting

Project reporting shall be completed in accordance with Section 15 of the project CEMP. This includes monthly Sydney Metro City and Southwest Environmental and Sustainability reports with each report is to be included in the Monthly Project Review.

On a monthly basis, environmental indicators, energy use, water consumption and waste information shall be entered into IMPACT.

- Monthly Environmental Metrics, which includes tool-box talks, and inspections (This is part of Laing O'Rourke's online reporting system IMPACT, which has data reporting requirements)
- Waste consumption
- Water usage including volume of water extracted from surface water sources and ground water sources
- Subcontractor energy and emissions data

Monthly oversight of inspection outcomes, audit issues and corrective actions provided through the Actions created within the Impact Assurance application. Actions are to be addressed in accordance with the timeframes outlined in Section 15 of the project CEMP.

Other Environmental reporting includes;

- Compliance tracking program (MCoA A29)
- Construction compliance reports (MCoA A34)
- Environmental auditing program (MCoA A37)
- Construction monitoring programs (MCoA C12)
- Environmental Inspections undertaken by ER
- Environmental Inspections undertaken by Acoustic Advisor

Reports on compliance with the approval or any other statutory requirements will be submitted to TfNSW for inclusion in the Construction Compliance Reports prepared and submitted by TfNSW to the Secretary for information every six (6) months from the date of the commencement of construction or within another timeframe agreed with the Secretary, for the duration of construction. The Reports will include. The Compliance Tracking Reports will be provided to the Environmental Representative for information.

13. Issue, Revision and Re-issue

The initial issue of this Sub Plan has been reviewed by the Regional Environmental Manager to ensure it meets the requirements of the current Environmental Management System and policy, contract, specifications and standards. The plan is approved for use on the project by the Project Leader. Evidence of initial review and approval is by signatures on the cover sheet.

Revisions of this plan may be required throughout the duration of the project to reflect changing circumstances or identified deficiencies.

Revisions may result from:

- Management Review
- Audit (either internal or by external parties)
- Client complaints or non-conformance reports
- Changes to the Company's standard system

Revisions shall be reviewed and approved by the Project Leader prior to issue. Updates to this plan are numbered consecutively and issued to holders of controlled copies. Updates will be undertaken on a 6 monthly basis.

The ER in accordance with CoA A24 (j), must consider "minor" amendments to the CEMP, CEMP Sub plans and monitoring programs that comprise updating or are of an administrative nature, and are consistent with, the terms of this approval and the CEMP, CEMP sub-plans and monitoring programs approved by the Secretary and, if satisfied such amendment is necessary, approve the amendment. This does not include any modifications to the terms of this approval.

Furthermore, in accordance with CoA A27, (g) in conjunction with the ER, the AA must (iv) consider relevant "minor" amendments made to the CEMP, relevant sub-plans and noise and vibration monitoring programs that require updating or are of an administrative nature, and are consistent with the terms of this approval and the management plans and monitoring programs approved by the Secretary and, if satisfied such amendment is necessary, endorse the amendment. This does not include any modifications to the terms of this approval.

13.1 Client Review and Approval

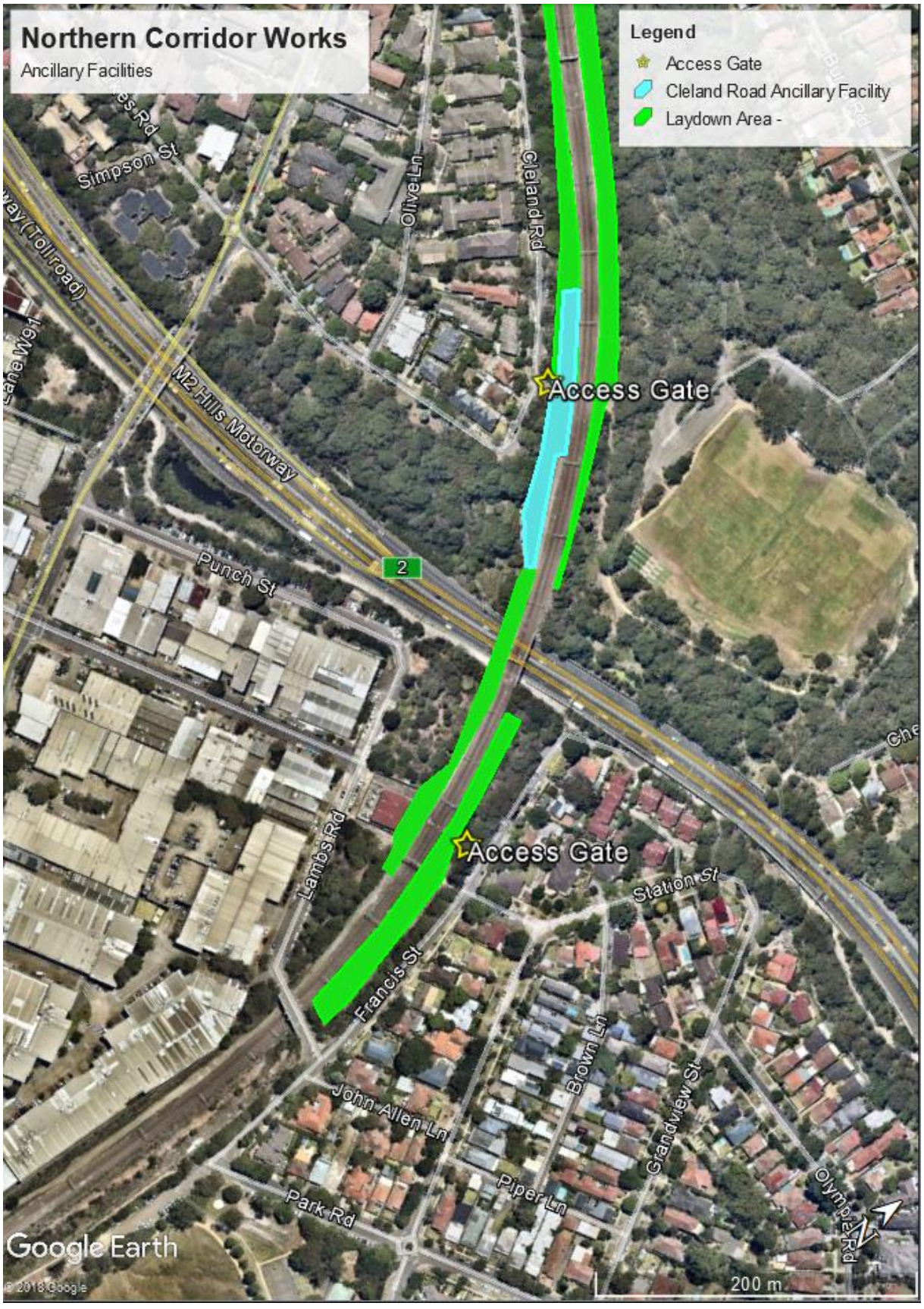
This CAFMP must be approved by TfNSW and the ER at least 30 days prior to the commencement of any construction work associated with the Project as required by The Contract.

13.2 Secretary Approval

In accordance with CoA C7, the CEMP and Sub-plans must be endorsed by the ER and then submitted to the Secretary for approval no later than one (1) month before the commencement of construction or within another timeframe agreed with the Secretary.

APPENDIX A – Ancillary Facilities and Laydown Area Locations

Note: Brand Street ancillary facility to only be used during rail



APPENDIX B – Stakeholder Comment Register

Sydney Metro City & Southwest
Stakeholder Comment Tracker

Document: Construction Ancillary Facilities Management Plan
Version: 2

Date of review: 22/01/2018

RESPONSE STATUS
O Open
C Closed

Item No	Contract	Contractor	Doc Rev	Item Description, Page, Para, Drg ref	Stakeholder	Reviewer	Date	Requirement Ref (COA or REMM)	Stakeholder comment	TfNSW/Contractor Response	Date	Response Status (date)	Stakeholder response (date)	TfNSW/Contractor Response	Response Status (date)
1	North Shore Corridor Works Project	Laing O'Rourke	V2	Whole document	EPA	Claire Miles	02-Jan-2018	A9 & A17	Hello Christopher, The EPA's position on all post approval management plans is to encourage the development of such plans to ensure that proponents have determined how they will meet their statutory obligations and designated environmental objectives. However, we do not approve or endorse these documents as our role is to set environmental objectives for environmental management and not to be directly involved in the development of strategies to achieve those objectives. Therefore the EPA submits a nil comment response in relation to the Construction Ancillary Facilities Management Plan for the NCW package. Please do not hesitate to contact me to discuss this if you require further information.	Noted.	03-Jan-2018	C			
2	North Shore Corridor Works Project	Laing O'Rourke	V2	Whole document	Willoughby City Council	Gordon Farrelly	15-Jan-2017	A9 & A17	1) On page 15 within the Compliance Table with CoA A16 in reference to A16.vii) the comments state "No vegetation clearing is required for any facility locations." Plans and aerial photos from page 34 onwards indicates potential for significant impact on trees. Although it may not require removal of trees, stockpiling or structures located around the base of trees can significantly impact the health of the tree. Council would like further assurances and an outline of the methods to be undertaken for tree protection to be undertaken by Laing O'Rourke to ensure the conditions are met. I note that on page 48 the target relates only to trees marked as protected. It should be noted that impacts on any trees in Willoughby City Council is of concern to and may receive strong opposition from the local community.	This is correct, no vegetation clearing will be requred to set up any of the ancillary facilities proposed. Erosion and sediment controls and exclusion zones will be set up surrounding laydown and storage areas. Please note - all works is contained within the rail corridor.	22-Jan-2018	C	Hi Chris Council has reviewed the comments provided by Laing O'Rourke in response to Council's comments, as outlined in the attached document. Council is satisfied with the response to the comments. Council notes that a new version of the plan has been created and forwarded. If there are any new issues that relate to Willoughby Council, generated as a consequence of the review process, then Laing O'Rourke should identify these specific issues and advise Council for it to consider (Council does not have the resources or time to review the complete plan again). If there are no new issues in the revised plan that relate to Willoughby Council, then Council has no objections to the plan. Regards Gordon		
3	North Shore Corridor Works Project	Laing O'Rourke	V2	Whole document	Willoughby City Council	Gordon Farrelly	15-Jan-2017	A9 & A17	2) Community consultation in proximity to the ancillary facilities sites is critical. Consultation is particularly necessary for out-of-hours activities to be undertaken as part of the Plan.	Communities have been consulted and continue to be consulted as per the Sydney Metro City and South West Strategy. Specific consultation, letter box drops, individual briefings, phone calls are undertaken prior to any works being undertaken during the project. Road occupancy will be required on Drake Street and Hopetoun Ave during rail possessions t facilitate deliveries to the site, subject to WCC approval. Any traffic management is undertaken through the project CTMP.	22-Jan-2018	C	See response to item 2		
4	North Shore Corridor Works Project	Laing O'Rourke	V2	Whole document	Willoughby City Council	Gordon Farrelly	15-Jan-2017	A9 & A17	3) Table 2: Overview of compounds and temporary laydown areas refers to changes to parking arrangements to implement no parking on certain streets or on one side of certain streets. Any permanent changes to on-street parking restrictions and other regulatory, advisory and information signposting proposed for installation on the local road network will need to be referred to Council for approval. The process will involve Council consideration, resident notification/consultation, liaising with the Local Traffic Committee and Council decision. Council has the final decision on any changes to traffic management and regulatory, advisory and information on the non-State Road network in Willoughby local government area. Temporary parking changes to support short term traffic control plans can also lead to community concerns and may receive strong opposition from the local community. Every effort must be made to minimise the impact on on-street parking with the work to be undertaken as part of the Plan.	No parking is permitted for construction vehicles on residential streets surrounding the project site and any ancillary facility. NCW is aware of the approval process for road occupany and will consult with council accordingly in the event an ROL is required for works. Construction sites would be managed to minimise construction staff parking on surrounding streets. As mentioned above community consultation will be udertaken through the Community Consultation Strategy. In particular, the community would be notified in advance of proposed road and pedestrian network changes through media channels and other appropriate forms of community liaison.	22-Jan-2018	C	See response to item 2		
5	North Shore Corridor Works Project	Laing O'Rourke	V2	Whole document	Willoughby City Council	Gordon Farrelly	15-Jan-2017	A9 & A17	4) Council would like all record/reports on road dilapidation surveys to be submitted to Council for information prior to the commencement of major works on-site to be undertaken as part of the Plan.	Noted. Delapidation reports have been submitted to WCC.	22-Jan-2018	C	See response to item 2		

6	**North Shore Corridor Works Project**	**Laing O'Rourke**	**V2**	Whole document	Willoughby City Council	Gordon Farrelly	15-Jan-2017	A9 & A17	5) Council is concerned with the potential for staff and workers of Laing O'Rourke and associated contractors parking in the non-State Road network in Willoughby local government area in the vicinity to all sites captured in the Plan. Council notes that a Construction Traffic Management Plan will be produced which will consider and address all traffic, transport and parking issues. Council would like further assurances and an outline of the methods to be undertaken to ensure public and active transport and on-site parking is used by Laing O'Rourke and associated contractors to ensure the conditions are met. Every effort must be made to minimise the impact on on-street parking with the work to be undertaken as part of the Plan.	No parking is permitted for cnstruction vehicles on residential streets surrounding the project site and any ancillary facility. NCW is aware of the approval process for road occupany and will consult with council accordingly in the event an ROL is required for works. Construction sites would be managed to minimise construction staff parking on surrounding streets. It is noted that WCC has been consulted during the development of the CTMP for NCW and has incorporated comments provided by council into the plan.	22-Jan-2018	**C**	See response to item 2		

Register No.	*Issued to:*	*Date of Issue*
Register No.1	EPA, WCC	18/12/2017
Register No.2		

Standing, Christopher

From: Claire Miles <Claire.Miles@epa.nsw.gov.au>
Sent: Tuesday, 2 January 2018 9:57 AM
To: Standing, Christopher
Cc: Hendy, Andrew; Singh, Sunny; Deacy, Anthony
Subject: RE: Northern Corridor Works - Construction Ancillary Facilities Management Plan

Hello Christopher,

The EPA's position on all post approval management plans is to encourage the development of such plans to ensure that proponents have determined how they will meet their statutory obligations and designated environmental objectives.

However, we do not approve or endorse these documents as our role is to set environmental objectives for environmental management and not to be directly involved in the development of strategies to achieve those objectives. Therefore the EPA submits a nil comment response in relation to the Construction Ancillary Facilities Management Plan for the NCW package.

Please do not hesitate to contact me to discuss this if you require further information.

Claire Miles
A/Unit Head - Metropolitan Infrastructure
Metro, NSW Environment Protection Authority
Ph: 02 9995 5167 Mob: 0436 682 226
claire.miles@epa.nsw.gov.au www.epa.nsw.gov.au @EPA_NSW
Report pollution and environmental incidents 131 555 (NSW only) or +61 2 9995 5555

From: Standing, Christopher [mailto:cstanding@laingorourke.com.au]
Sent: Monday, 18 December 2017 1:12 PM
To: Claire Miles <Claire.Miles@epa.nsw.gov.au>
Cc: Hendy, Andrew <Andrew.Hendy@transport.nsw.gov.au>; Singh, Sunny <Sunny.Singh@transport.nsw.gov.au>; Deacy, Anthony <ADeacy@laingorourke.com.au>
Subject: Northern Corridor Works - Construction Ancillary Facilities Management Plan

Dear Claire,

Laing O'Rourke has been engaged by Sydney Metro Delivery Office for the Norther Corridor Works (NCW) as part of the approved Sydney Metro Chatswood to Sydenham project.

Please see attached Laing O'Rourke's Construction Ancillary Facilities Management Plan for the NCW package component of the project. Condition A17 of the planning approval requires the project to develop the plan in consultation with the EPA.
A copy of the planning approval conditions for the project can be found here.

As such, Laing O'Rourke would like to formally submit the attached management plan for comment. The earliest EPA response would be very much appreciated, however project team need comments back by no later than Friday December 22nd 2017.

Thank you for your help and understanding and please do not hesitate in contacting me if required to discuss.

Yours sincerely,
Chris

Chris Standing
Environmental and Sustainability Manager
North Shore Corridor Works Project

Laing O'Rourke Australia
Level 8 | 100 Christie Street | St. Leonards | NSW 2065
Tel: +61 2 9903 0000 | Mob: +61 431 338 578 | Fax: +61 2 9903 0333
E-mail: CStanding@laingorourke.com.au
Web: www.laingorourke.com.au

Standing, Christopher

From: Farrelly, Gordon <Gordon.Farrelly@Willoughby.nsw.gov.au>
Sent: Friday, 2 March 2018 11:51 AM
To: Standing, Christopher
Subject: RE: (DWS Doc No 147982158) Construction Ancillary Facilities Management Plan
Attachments: NCW CAFMP- Metro stakeholder comment register.xlsx

Hi Chris

Council has reviewed the comments provided by Laing O'Rourke in response to Council's comments, as outlined in the attached document.

Council is satisfied with the response to the comments.

Council notes that a new version of the plan has been created and forwarded. If there are any new issues that relate to Willoughby Council, generated as a consequence of the review process, then Laing O'Rourke should identify these specific issues and advise Council for it to consider (Council does not have the resources or time to review the complete plan again).

If there are no new issues in the revised plan that relate to Willoughby Council, then Council has no objections to the plan.

Regards

Gordon

From: Standing, Christopher [mailto:cstanding@laingorourke.com.au]
Sent: Thursday, 1 March 2018 4:56 PM
To: Farrelly, Gordon
Cc: Hayward, Mark; Keegan, Daniel
Subject: (DWS Doc No 147982158) Construction Ancillary Facilities Management Plan

Gordon,

Please disregard the previous excel file and refer to the comment register attached only.

Regards,
Chris

Chris Standing
Environmental and Sustainability Manager
North Shore Corridor Works Project

Laing O'Rourke Australia
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E-mail: CStanding@laingorourke.com.au
Web: www.laingorourke.com.au

From: Standing, Christopher
Sent: Thursday, 1 March 2018 4:54 PM
To: 'Farrelly, Gordon' <Gordon.Farrelly@Willoughby.nsw.gov.au>
Cc: 'Hayward, Mark' <mark.hayward@willoughby.nsw.gov.au>; Keegan, Daniel <Daniel.Keegan@jhlorjv.com.au>
Subject: RE: Construction Ancillary Facilities Management Plan - Willoughby Council advice

Hi Gordon,

Please find attached the updated revision of the NCW Construction Ancillary Facilities Management Plan incorporating comments from WCC dated 12 Jan 2018.

For further reference please find attached the consolidated comment register pertaining to this plan,.

If you could please confirm your satisfaction with the response to the comments and the plan as required by Condition A17, consultation with relevant local government authorities.

Best regards,
Chris

Chris Standing
Environmental and Sustainability Manager
North Shore Corridor Works Project

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Web: www.laingorourke.com.au

From: Farrelly, Gordon [mailto:Gordon.Farrelly@Willoughby.nsw.gov.au]
Sent: Friday, 12 January 2018 4:20 PM
To: Standing, Christopher <cstanding@laingorourke.com.au>
Subject: Construction Ancillary Facilities Management Plan - Willoughby Council advice

Dear Mr Standing

Willoughby City Council has now reviewed the Construction Ancillary Facilities Management Plan (Plan) Draft (Rev 02) and raises no objections to the information provided in the Plan.

Notwithstanding, Council offers the following comments:

1) On page 15 within the Compliance Table with CoA A16 in reference to A16.vii) the comments state *"No vegetation clearing is required for any facility locations."* Plans and aerial photos from page 34 onwards indicates potential for significant impact on trees. Although it may not require removal of trees, stockpiling or structures located around the base of trees can significantly impact the health of the tree. Council would like further assurances and an outline of the methods to be undertaken for tree protection to be undertaken by Laing O'Rourke to ensure the conditions are met. I note that on page 48 the target relates only to trees marked as protected. It should be noted that impacts on any trees in Willoughby City Council is of concern to and may receive strong opposition from the local community.
2) Community consultation in proximity to the ancillary facilities sites is critical. Consultation is particularly necessary for out-of-hours activities to be undertaken as part of the Plan.
3) Table 2: Overview of compounds and temporary laydown areas refers to changes to parking arrangements to implement no parking on certain streets or on one side of certain streets. Any

permanent changes to on-street parking restrictions and other regulatory, advisory and information signposting proposed for installation on the local road network will need to be referred to Council for approval. The process will involve Council consideration, resident notification/consultation, liaising with the Local Traffic Committee and Council decision. Council has the final decision on any changes to traffic management and regulatory, advisory and information on the non-State Road network in Willoughby local government area. Temporary parking changes to support short term traffic control plans can also lead to community concerns and may receive strong opposition from the local community. Every effort must be made to minimise the impact on on-street parking with the work to be undertaken as part of the Plan.

4) Council would like all record/reports on road dilapidation surveys to be submitted to Council for information prior to the commencement of major works on-site to be undertaken as part of the Plan.
5) Council is concerned with the potential for staff and workers of Laing O'Rourke and associated contractors parking in the non-State Road network in Willoughby local government area in the vicinity to all sites captured in the Plan. Council notes that a Construction Traffic Management Plan will be produced which will consider and address all traffic, transport and parking issues. Council would like further assurances and an outline of the methods to be undertaken to ensure public and active transport and on-site parking is used by Laing O'Rourke and associated contractors to ensure the conditions are met. Every effort must be made to minimise the impact on on-street parking with the work to be undertaken as part of the Plan.

Please call me to discuss any comments should you require further information.

Yours faithfully

Gordon

From: Farrelly, Gordon
Sent: Monday, 18 December 2017 3:58 PM
To: 'cstanding@laingorourke.com.au'
Subject: (DWS Doc No 144475905) CAFM Plan - Willoughby Council advice sent to Laing ORourke

Dear Mr Standing

Thank you for your communication dated 18 December 2017 requesting comments from Willoughby City Council for the Construction Ancillary Facilities Management Plan (Plan), copy provided below.

Council will review the Plan and provide comments. It is noted that project team has requested comments back by no later than Friday December 22nd 2017.

Unfortunately Council is unable to review the Plan and provide a considered response within 1 working week.

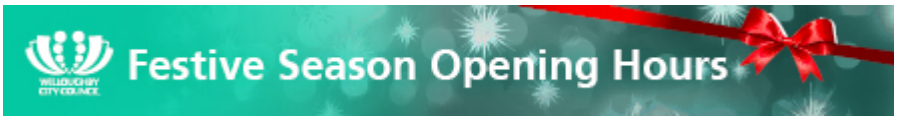
Given Council's existing work commitments and noting that there is the Christmas and New Year holiday period Council comments will be provided on or before 12 January 2017.

Please call me to discuss any comments should you require further information.

Yours faithfully

Gordon

Gordon Farrelly - *Traffic & Transport Team Leader*
WILLOUGHBY CITY COUNCIL
PO Box 57 Chatswood NSW 2057
P +61 2 9777 7705 | M +61409907678
E Gordon.Farrelly@Willoughby.nsw.gov.au
willoughby.nsw.gov.au | visitchatswood.com.au | theconcourse.com.au



From: Standing, Christopher [mailto:cstanding@laingorourke.com.au]
Sent: Monday, 18 December 2017 1:12 PM
To: Yip, Ron; Hayward, Mark
Cc: Hendy, Andrew; Singh, Sunny; Deacy, Anthony
Subject: Northern Corridor Works - Construction Ancillary Facilities Management Plan

Dear Ron,

Laing O'Rourke has been engaged by Sydney Metro Delivery Office for the Norther Corridor Works (NCW) as part of the approved Sydney Metro Chatswood to Sydenham project.

Please see attached Laing O'Rourke's Construction Ancillary Facilities Management Plan for the NCW package component of the project. Condition A17 of the planning approval requires the project to develop the plan in consultation with the relevant local councils(s).
A copy of the planning approval conditions for the project can be found here.

As such, Laing O'Rourke would like to formally submit the attached management plan for comment. The earliest council response would be very much appreciated, however project team need comments back by no later than Friday December 22nd 2017.

Thank you for your help and understanding and please do not hesitate in contacting me if required to discuss.

Yours sincerely,
Chris

Chris Standing
Environmental and Sustainability Manager
North Shore Corridor Works Project

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APPENDIX C – Environmental Performance Outcomes

Relevant Secretary's environmental assessment requirement desired performance outcomes	Environmental performance outcome	Implementation for NCW Ancillary Facilities
Construction Traffic and Transport		
Transport and traffic 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. Works are compatible with existing infrastructure and future transport corridors.	The project would minimise impacts to the road network	– The ancillary facilities are managed in accordance with the CTMP. The CTMP has been developed to mitigate the impacts to the local road network. – Heavy Vehicle access would not be required for the Elizabeth Street and 2 Orchard Road ancillary facilities as these are pre-existing buildings to be used as engineering office space.
	Pedestrian and cyclist safety would be maintained	– The Cleland Road, Brand Street and Drake Street ancillary facilities are located within the rail corridor away from pedestrian and cyclist thoroughfares. Similarly, the Elizabeth Street and 2 Orchard Road ancillary facilities will be fenced off from the public. Access gates and appropriate signage will be in place at access points to maintain driver alertness and maintain pedestrian and cyclist safety.
	Effective coordination would be carried out to minimise cumulative network impacts	– Sydney Metro will hold regular coordination meetings to coordinate NCW with other projects and the Sydney Trains operational requirements. Any impacts relating to the establishment and operation of the ancillary facilities identified in this plan will be raised at the meeting.
	Access to properties would be maintained.	– The Cleland Road, Brand Street and Drake Street ancillary facilities will be located within the rail corridor and will be accessed via rail corridor gates. The Elizabeth Street ancillary facility is on private land adjacent to the rail corridor. The access to the Elizabeth Street ancillary facility is directly onto Elizabeth Street, the facility will not impact on access to other nearby properties. The 2 Orchard Road ancillary facility shares a common access track with neighbouring properties. This access track will be maintained at all times to allow access for other properties. There will be no parking within the vicinity of the ancillary facilities in accordance with the CTMP.

Construction Noise and Vibration		
Noise and vibration – amenity Construction noise and vibration (including airborne noise, ground-borne noise and blasting) are effectively managed to minimize adverse impacts on acoustic amenity. **Noise and vibration – structural** Construction noise and vibration (including airborne noise, ground-borne noise and blasting) are effectively managed to minimize adverse impacts on the structural integrity of buildings and items including Aboriginal places and environmental heritage.	Noise levels would be minimised with the aim of achieving the noise management levels where feasible and reasonable	– Noise would be minimised in accordance with the controls outlined in in ERAP1 Noise and Vibration of the CEMP.
	The project would avoid any damage to buildings from vibration.	– As identified in Section 11.2, vibratory works will not occur as part of the establishment of operation of the ancillary facilities.
Land use and Property		
Socio-economic, land use and property The project minimises impacts to property and business and achieves appropriate integration with adjoining land uses, including maintenance of appropriate access to properties and community facilities, and minimisation of displacement of existing land use activities, dwellings and infrastructure.	The project would be appropriately integrated into local landuse planning strategies	– The Cleland Road, Brand Street and Drake Street ancillary facilities will be placed on land zoned for Transport. It is common to observe temporary construction facilities within the rail corridor; as such the landuse is appropriate. – The Elizabeth Street and 2 Orchard Road ancillary facilities will be located within a existing buildings and will predominantly be used by engineers as a site office.
	The surface footprint of the project would be minimised	– The footprint of the ancillary facilities has been minimised to limit impacts and to mitigate the requirements for rehabilitation of the land.
	The project would provide substantial future development opportunities	– Not relevant to this Plan
Business Impacts		
Socio-economic, land use and property The project minimises adverse social and economic impacts and capitalises on opportunities potentially available to affected communities. The project minimises impacts to property and business and achieves appropriate integration with adjoining land uses, including maintenance of appropriate access to properties and community facilities, and minimisation of	The project would minimise impacts on businesses during construction	– The Cleland Road, Brand Street, Drake Street and 2 Orchard Road ancillary facilities are located several hundred meters away from local businesses. Therefore, traffic and parking associated with the project is unlikely to affect local businesses. – The Elizabeth Street ancillary facility is located adjacent to a number of businesses. Due to parking restrictions, impacts on parking for local businesses are expected to be

displacement of existing land use activities, dwellings and infrastructure.		minimal. The project will continue to consult with local businesses to mitigate the risk of any impacts. – The presence of more workers in the area may have positive impacts on local businesses by providing more customers.
	During operation, the project would improve access to businesses for employees and customers, and connectivity between businesses within the global economic corridor.	– Not relevant to this Plan
Non-Aboriginal heritage		
Heritage 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 environmental heritage and 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 environmental heritage and Aboriginal objects and places.	The project would be sympathetic to heritage items and, where feasibl and reasonable, avoid and minimise impacts to non-Aboriginal heritag items and archaeology	– There are no known heritage items within the vicinity of each of the ancillary facilities. An unexpected finds procedure will be implemented during the works.
	The design of the project would reflect the input of an independent heritage architect, relevant stakeholders and the design review panel.	– Not relevant to this Plan
Aboriginal heritage		
Heritage 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 environmental heritage and 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 environmental heritage and Aboriginal objects and places.	The project would be sympathetic to heritage items and, where feasibl and reasonable, avoid and minimise impacts to Aboriginal heritage items and archaeology The design of the project would reflect the input of an independent heritage architect, relevant stakeholders and the design review panel.	– There are no known heritage items within the vicinity of each of the ancillary facilities. An unexpected finds procedure will be implemented during the works.
Landscape character and visual amenity		
Urban design The project design complements the visual amenity, character and quality of the surrounding environment.	During operation, the project would make a positive contribution to the quality of the urban environment at each station site	– Not relevant to this Plan

The project contributes to the accessibility and connectivity of communities. **Visual amenity** The project minimises adverse impacts on the visual amenity of the built and natural environment (including public open space) and capitalises on opportunities to improve visual amenity	During operation, the project would minimise change to landscape character in the vicinity of the dive structures and Artarmon substation The project would be visually integrated with its surroundings.	
Groundwater and geology		
Water – hydrology Long term impacts on surface water and groundwater hydrology (including drawdown, flow rates and volumes) 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 achieved) or improved and maintained (where values are not achieved). Sustainable use of water resources.	The project would make good any impacts on groundwater users	– Not relevant to this Plan
	The project would avoid any damage to buildings from settlement.	– Not relevant to this Plan
Soils, contamination and water quality		
Soils The environmental values of land, including soils, subsoils and landforms, are protected. Risks arising from the disturbance and excavation of land and disposal of soil are minimised, including disturbance to acid sulfate soils and site contamination. **Water – quality** 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 to the extent of the project impact including estuarine and marine waters (if applicable).	Erosion and sediment controls during construction would be implemented in accordance with Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom, 2004) and Managing Urban Stormwater: Soils and Construction Volume 2 (Department of Environment and Climate Change, 2008a)	- Erosion and sediment controls will be applied to ancillary facilities is accordance with Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom, 2004) and Managing Urban Stormwater: Soils and Construction Volume 2 (Department of Environment and Climate Change, 2008a)
	There would be no impacts on aquatic environments associated with the disturbance of acid sulfate soils during construction	- There are no acid sulphate soils at the ancillary facility locations
	Any contamination on project sites would be remediated to suit future land use	- There is no known contamination at the ancillary facility locations. Any contamination encountered will be managed in accordance with the unexpected finds procedure
	The project would protect or contribute to achieving the Water Quality Objectives during construction and operation	- Not relevant to this Plan

	Construction water quality discharge would comply with the requirements of an environment protection licence issued to the project	- Water discharge from the ancillary facilities is not expected. Any discharge would be undertaken in accordance with the EPL and Sydney Metro requirements.
	Operation water quality discharge would comply with a discharge criteria determined in consultation with the NSW Environment Protection Authority	- Not relevant to this Plan
Social impacts and community facilities		
Socio-economic, land use and property The project minimises adverse social and economic impacts and capitalises on opportunities potentially available to affected communities. The project minimises impacts to property and business and achieves appropriate integration with adjoining land uses, including maintenance of appropriate access to properties and community facilities, and minimisation of displacement of existing land use activities, dwellings and infrastructure.	The project would avoid long term impacts (during operation) on the availability and quality of public open space and community facilities	- Not relevant to this Plan
	The project, during operation, would help to improve access to local facilities, services and destinations, supporting opportunities for community interaction.	- Not relevant to this Plan
Biodiversity		
Biodiversity The project design considers all feasible measures to avoid and minimise impacts on terrestrial and aquatic biodiversity. Offsets and/or supplementary measures are assured which are equivalent to any remaining impacts of project construction and operation.	The biodiversity outcome would be consistent with the Framework for Biodiversity Assessment	- No biodiversity impacts will occur as a result of the establishment or operation of the ancillary facilities
	The project would minimise impacts to biodiversity	- All control measures to minimise impacts to biodiversity to be implemented in accordance with the controls outlined in ERAP 2 Tree Protection of the CEMP.
Flooding and Hydrology		
Flooding The project minimises adverse impacts on existing 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. **Water – hydrology**	Changes to overland flow diversions during construction would meet the following criteria: - Not worsen existing flooding characteristics up to and including the 100 year annual recurrence interval event in the vicinity of the project (not worsen is defined as a maximum increase flood levels of 50mm in a 100 year Average Recurrence Interval flood event, a maximum increase in time of inundation of	- The Cleland Road, Brand Street and Drake Street ancillary facilities are small in nature. All sheds will be on stilts. Therefore, the facilities will not impact on flood storage or existing flow regimes. The impact on flooding during the establishment and operation of the facilities will be negligible. - The Elizabeth Street ancillary facility makes use of existing buildings, as such there will be no change to

Long term impacts on surface water and groundwater hydrology (including drawdown, flow rates and volumes) 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 achieved) or improved and maintained (where values are not achieved). Sustainable use of water resources.	one hour in a 100 year Average Recurrence Interval flood event, and no increase in the potential for soil erosion and scouring from any increase in flow velocity in a 100 year Average Recurrence Interval flood event).	flooding or flow regimes as a result of the use of these building. - The 2 Orchard Road ancillary facility is located on high ground, and is not subject to flooding. The ancillary facility will be located within an existing building and will not change flood volumes or flow regimes.
	Dedicated evacuation routes would not be adversely impacted in flood events up to and including the probable maximum flood.	- The Cleland Road, Brand Street and Drake Street ancillary facilities are located within the rail corridor and will not impact on flood evacuation routes. - The Elizabeth Street and 2 Orchard Road ancillary facilities makes use of existing buildings, located adjacent to the rail corridor on a local road. As such, flood evacuation routes will not be impacted
	There would be no additional private properties affected by flooding up to and including the 100 year average recurrence interval event during operation	- The ancillary facilities are minor in nature, any impact on flooding will be negligible
	Flood levels would be increased by a maximum of 470 mm during the 100-year average recurrence interval event in the vicinity of the Marrickville dive structure during operation	- Not relevant to this Plan
	The performance of the downstream drainage network would be maintained during operation	- Not relevant to this Plan
Air Quality		
There are no Secretary's environmental assessment requirements relevant to air quality	Dust and exhaust emissions during construction would be minimised.	- Air quality would be managed at the ancillary facilities in accordance with the controls outlined in ERAP 3 Dust and Air Quality of the CEMP.
Hazard Risk		
There are no Secretary's environmental assessment requirements relevant to hazard and risk.	The storage, use and transport of dangerous goods and hazardous substances would comply with Hazardous and Offensive Development Application Guidelines: Applying SEPP 33 (Department of Planning, 2011)	- Storage, use and transport of hazardous materials would be managed at the ancillary facilities in accordance with the controls outlined in ERAPs 7 and 9 of the CEMP.
	There would be no unplanned or unexpected disturbance of utilities.	- There are no disturbances to utilities required for the establishment and operation of the ancillary facilities.
Waste Management		

Waste All wastes generated during the construction and operation of the project are effectively stored, handled, treated, reused, recycled and/or disposed of lawfully and in a manner that protects environmental values.	All waste would be assessed, classified, managed and disposed of in accordance with the NSW Waste Classification Guidelines	- All waste generated at the ancillary facilities will be classified and disposed of in accordance with the NSW Waste Classification Guidelines
	100 per cent of spoil that can be reused would be beneficially reused in accordance with the project spoil reuse hierarchy.	- No spoil will be generated from the ancillary facilities
	A recycling target of at least 90 per cent would be adopted for the construction of the project.	- The 90% recycling target will be implemented for waste generated at the ancillary facilities in accordance with ERAP 4 Waste and Resource Management of the CEMP.

Sustainability

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 would be carried out in accordance with the Sydney Metro City & Southwest Environment and Sustainability Policy	- The ancillary facilitates will be established and operated in accordance with this Policy
	25 per cent of the greenhouse gas emissions associated with consumption of electricity during construction would be offset	- This target will be applied to the ancillary facilities through the Construction Sustainability Management Plan.
	100 per cent of the greenhouse gas emissions associated with consumption of electricity during operation would be offset.	- Not relevant to this Plan

APPENDIX D – Indicative Construction Program

NCW Activities	2017												2018												2019												2020												2021											
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Mobilise Project and Design Consultant Teams																																																											
Design and Approvals Period																																																											
Construction Packages Procurement Period																																																										
Site Establishment and Facilities Installation																																																										
Construction Commencement																																																										
Possession WE47 (19 May 2018 - 20 May 2018) - Construct stormwater basin temporary sheet piles (stage 1). OHWS footings at 4 locations. OHWS steel erection at 3 locations. Signal sighting slew.																																																										
Non-possession (12 May 2018 - 24 Aug 2018) - Construct detention basin																																																										
Possession WE08 (25 Aug 2018 - 26 Aug 2018) - Construct stormwater basin temporary sheet piles (stage 2). OHWS footings in 4 locations. OHWS steel erection in 4 locations. Construct retaining wall piles. Remove Nelson st bridge western span.																																																										
Non-possession (27 Aug 2018 - 05 Oct 2018) - Continue stormwater basin construction. Construct Cess drain and Brand street drainage crossing.																																																										
Possession WE14 (6 Oct 2018 - 7 Oct 2018) - OHWS footings in 3 locations. OHWS steel erection in 4 locations. Continue retaining wall piles. Remove Nelson St bridge central and eastern spans.																																																										
Non-possession (8 Oct 2018 - 26 Oct 2018) - Trim retaining wall piles. Form, reo, pour pile caps.																																																										
Possession WE17 (27 Oct 2018 - 28 Oct 2018) - Remove CSW portion of existing turnback siding. OHWS footings in 3 locations. OHWS steel erections in 3 locations. Install track side equipment for track circuits and warning slights. Demolish Nelson street bridge south end.																																																										
Non-possession (29 Oct 2018 - 02 Nov 2018) - Construct Up side CSR Permanent route. Install local cable routes. Install tail cables for track circuits and warning lights.																																																										
Possession WE18 (3 Nov 2018 - 4 Nov 2018) - OHWS footings at 4 locations. OHWS steel erection at 3 locations. Install 4 signal bases. Install 10 local cable routes. Remove existing noise wall and install retaining wall post and panels.																																																										
Non-possession (5 Nov 2018 - 16 Nov 2018) - Install drainage at 10.800. Install tail cables for signals. Prewire 9 train stops. Install 10 local cable routes for temporary slew.																																																										
Possession WE20 (17 Nov 2018 - 18 Nov 2018) - OWHS footings at 3 locations. OHWS steel recertions at 2 locations. Install tail cables for signals, trains stops and track side equipment. Excavation and blinding of retaining wall. Install deck widening formwork on Mowbray Road Bridge.																																																										
Non-possession (19 Nov 2018 - 14 Dec 2018) - Carry out signal circuit modification. Form, reo and pour concrete retaining wall.																																																										
Non-possession (17 Dec 2018 - 15 Feb 2019) - Install tail cables for temporary signals and tracks circuits. Continue retaining wall construction. Hopetoun avenue pile wall and capping beam. Hopetoun avenue track drainage and cess drain. Demolish and construct Mowbray road bridge footpath and barrier.																																																										
Possession WE33 (16 Feb 2019 - 17 Feb 2019) - 3 ULX around 11.250. OHWS footings at 3 locations. OHWS steel erections at 2 locations. Install 4 signals, train stops, and tail cables for signals and track circuits. Construct retaining wall piles. Nelson St bridge - demolish existing																																																										
Non-possession (18 Feb 2019 - 05 April 2019) - OHWS steel erections at 2 locations, signal equipment modifications, cable installs																																																										
Possession WE40 (06 Apr 2019 - 07 April 2019) - Install retaining walls, modify and terminate cables																																																										
Non-possession (08 Apr 2019 - 21 Jun 2019) - Cable installation																																																										
Possession WE51 (22 Jun 2019 - 23 June 2019) - OHW structures installation																																																										
Non-possession (24 Jun 2019 - 02 Aug 2019) - Cess Drains at 11.200 and pit and pipe at 10.800. Install tall cables for signals on down. Mowbray road bridge - formwork and reinforcement for deflection wall slab.																																																										
Possession WE05 (03 Aug 2019 - 04 Aug 2019) - Building temporary down NSL. OHWS steel erections at 2 locations. Install tail cables for signals and track side equipment. Remove existing noise wall and install retaining wall posts and panels. Mowbray road bridge - construct pier protection.																																																										
Non-possession (05 Aug 2019 - 06 Dec 2019) - Mowbray road bridge - form, reo and pour deflection wall.																																																									
Possession WE23 (07 Dec 2019 - 08 Dec 2019) - Build temporary down NSL. OHW slew for proposed NSL Up. Install and tie-back cantilevers for temporary down. Install tail cables, signals and train stops. Continue retaining wall construction and Mowbray road bridge pier protection.																																																										

Non-possession (09 Dec 2019 - 06 Mar 2020) - Populate CWP package. Mowbray road bridge - strip formwork.			
Possession WE36 (07 Mar 2020 - 08 Mar 2020) - Slew and commission temporary down. OHW slew and demolish redundant footings. Commission temporary down signals. Continue retaining wall construction.			
Non-possession (09 Mar 2020 - 12 Jun 2020) - Remove redundant track.			
Possession WE50 (13 Jun 2020 - 14 Jun 2020) - Drainage system 10.750. Remove redundant track at tie-ins. OHWS steel erections at 2 locations. Continue retaining wall construction.			
Non-possession (15 Jun 2020 - 28 Aug 2020) - Pits and pipe at 11.100. Build final down NSL.			
Possession WE09 (29 Aug 2020 - 30 Aug 2020) - 2 ULX at 10.900. Preparation works for down NSL ohw run. Continue retaining wall construction			
Non-possession (31 Aug 2020 - 06 Nov 2020) - Build final down. OHWS footings and steel erections at 10 locations. Down shore final slew.			
Possession WE19 (07 Nov 2020 - 08 Nov 2020) - Preparation works for final down NSL. Install impedance bond and bonding.			
Possession WE31 (30 Jan 2021 - 31 Jan 2021) - Decommission and remove temporary down NSL. Slew of final down NSL. Commission of signalling infrastructure. Remove redundant signalling infrastructure.			
Non-possession (01 Feb 2021 - 19 Mar 2021) - Remove redundant cabling reclamation. Remove off track equipment.			
Possession WE38 (20 Mar 2020 - 21 Mar 2020) - Pits and pips at 10.800. 3 ULX at 10.700. Cess drains at 11.250. Track and OHW removal of Down side			
Additional non-possession - Pits and pipes at 10.800. Cess drains at 10.800			
Additional possession - Pits and pipes at 10.900. 3 ULX at 11.100			
Additional non-possession - Cess drains at 10.900			
Additional possession - Pits and pipes at 11.000			
Additional non-possession - Cess drains at 11.000			
Construction Activities 40			

APPENDIX F – Environmental Representative Endorsement Letter