

**Ancillary Site Establishment
Management Plan – Site 1C**
Revision B - Coffs Harbour Bypass

FERROVIAL GAMUDA JOINT VENTURE

DOCUMENT DETAILS

Document Title	Ancillary Site Establishment Management Plan – Site 1C
Project Name	Coffs Harbour Bypass
Client	Transport for New South Wales
Application No.	SSI-7666
Document Reference No.	CHBPW-FGJV-NWW-EN-PLN-000035
Principal Contractor	Ferrovial Gamuda Joint Venture

DOCUMENT AUTHORISATION

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DOCUMENT CONTROL

The current document version number and date of revision are shown in the document footer. All changes made to the Management Plan during its implementation on a live project are to be recorded in the amendment tables below.

Revision	Date	Description of changes
A	11/04/2023	Draft for TFNSW, ER, NSW EPA and City of Coffs Harbour Review
B	27/04/2023	Response to TFNSW, ER, NSW EPA and City of Coffs Harbour Comments. Submitted to DPE
C	22/05/2023	Response to DPE Comments.
D		

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1	ER/AA/EPA/CoCH	A, B
2	DPE	B, C
3		
4		
5		

LIST OF EMERGENCY AND KEY CONTACTS

Position	Name	Phone
EPA Pollution Hotline	N/A	131 555
Fire and Rescue NSW	N/A	000 (for pollution incidents that present an immediate threat to human health or property) 1300 729 579 (for pollution incidents that do not present an immediate threat to human health or property)
NSW Ministry of Health	N/A	02 9391 9000 for NSW Ministry of Health 02 6589 2120 for Port Macquarie Public Health Unit
SafeWork NSW	N/A	131 050
City of Coffs Harbour	N/A	02 6648 4000
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TERMS AND DEFINITIONS

Abbreviation	Expanded Text
ASS	Acid Sulphate Soils
ASEMP	Ancillary Site Establishment Management Plan
CEMP	Construction Environmental Management Plan
CEMS	Contractors Environmental Management System
Compliance Audit	Verification of how implementation is proceeding with respect to a Construction Environmental Management Plan (CEMP) (which incorporates the relevant approval conditions).
CSSI	Critical State Significant Infrastructure
DPE	Department of Planning and Environment
DPE, EESG	Department of Planning and Environment, Environment, Energy and Science Group
EIS	Environmental Impact Statement
EEC	Endangered Ecological Community
Ecologically sustainable development	Using, conserving and enhancing the community's resources so that the ecological processes on which life depends are maintained and the total quality of life now and in the future, can be increased (Council of Australian Governments, 1992)
EPA	NSW Environment Protection Authority
EPBC-CoA	Federal Conditions of Approval under the EPBC Act
EMS	Environmental Management System
Environmental aspect	Defined by AS/NZS ISO 14001:2015 as an element of an organisation's activities, products or services that can interact with the environment.
Environmental impact	Defined by AS/NZS ISO 14001:2015 as any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's environmental aspects.
Environmental incident	An unexpected event that has, or has the potential to, cause harm to the environment and requires some action to minimise the impact or restore the environment.
Environmental objective	Defined by AS/NZS ISO 14001:2015 as an overall environmental goal, consistent with the environmental policy, that an organisation sets itself to achieve.
Environmental policy	Statement by an organisation of its intention and principles for environmental performance.
Environmental target	Defined by AS/NZS ISO 14001:2015 as a detailed performance requirement, applicable to the organisation or parts thereof, that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives.
Environmental Representative	A suitably qualified and experienced person independent of project design and construction personnel employed for the duration of construction. The principal point of advice in relation to all questions and complaints concerning environmental performance.
EP&A Act	Environmental Planning and Assessment Act 1979 (NSW)
EPL	Environment Protection Licence
ESCP	Erosion and Sediment Control Plan
EWMS	Environmental work method statement
FGJV	Ferrovial Gamuda Joint Venture
Hold point	Is a verification point that prevents work from commencing prior to approval from Transport for NSW
MCoA	Minister's Conditions of Approval
Minister, the	Minister for Planning and Public Spaces (or delegate)
Non-compliance	Failure to comply with the requirements of the project approval or any applicable licence, permit or legal requirements.
Non-conformance	Failure to conform to the requirements of project system documentation including this CEMP or supporting documentation.
PESCP	Progressive Erosion and Sediment Control Plan
PIRMP	Pollution Incident Response Management Plan
Principal, the	TfNSW
POEO Act	Protection of the Environment Operations Act 1997 (NSW)
project, the	Coffs Harbour Bypass

Abbreviation	Expanded Text
REMMs	Revised Environmental Management Measures
ROL	Road occupancy licence
SAP	Sensitive Area Plan
SEAR's	Secretary's Environmental Assessment Requirements
TfNSW	Transport for NSW

1 INTRODUCTION

1.1 CONTEXT

This Ancillary Site Establishment Management Plan (ASEMP) has been developed for the Coffs Harbour Bypass (the Project) and has been prepared in accordance with the Minister's Condition of Approval (MCoA) A15.

This ASEMP has been prepared in accordance with:

- The Conditions of Approval (MCoA) granted to the project 2nd November 2020,
- The Coffs Harbour Bypass Environmental Impact Statement (EIS) 2019,
- The Coffs Harbour Bypass Submissions Report including the revised environmental management measures (REMM), June 2019; and
- All other applicable guidelines and legislation.

1.2 BACKGROUND

The Coffs Harbour Bypass EIS (ARUP 2019) assessed the impacts of construction and operation of the Project. The EIS included a description of the construction ancillary facilities within Chapter 6 and assessed the potential impacts in relation to the ancillary facilities in Chapters 8-27.

The EIS identified the potential for a range of minor impacts associated with ancillary facilities (and therefore site establishment works). However, it concluded any potential impacts could be managed by standard mitigation and management measures.

1.3 PROJECT DESCRIPTION

The project involves the construction of a 12-kilometre bypass of Coffs Harbour connecting the Pacific Highway between Englands Road to Korora Hill, and a 2-kilometre upgrade to the highway between Korora Hill and Sapphire. The works will include:

- Construction of a four-lane highway from south of Englands Road roundabout to the dual carriageway at Sapphire,
- Grade-separated interchanges at Englands Road, Coramba Road and Korora Hill,
- Excavation of three tunnels through Roberts Hill (190m), Shepherds Lane (360m), and Gatelys Road (450m),
- Construction of a bridge over the North Coast Railway,
- Establishment of pedestrian and cycling facilities, including a shared path linking to Solitary Islands Way and replacement of the Luke Bowen footbridge,
- Construction of one-way local access roads and service roads to connect existing infrastructure and properties,
- Relocation of the Korora Public School bus interchange,
- Noise attenuation measures such as noise barriers and at-property treatment as required; and
- Fauna crossing structures, including glider poles, underpasses, and fencing

The location of the project is shown in Figure 1.

The Ancillary Facility 1C located near Englands Road will facilitate the construction of the project through the following:

- Temporary construction facilities including office accommodation, lunchrooms, staff parking and ablutions
- Concrete batching plant to support insitu concreting works including tunnel support, bridge structures and road pavements

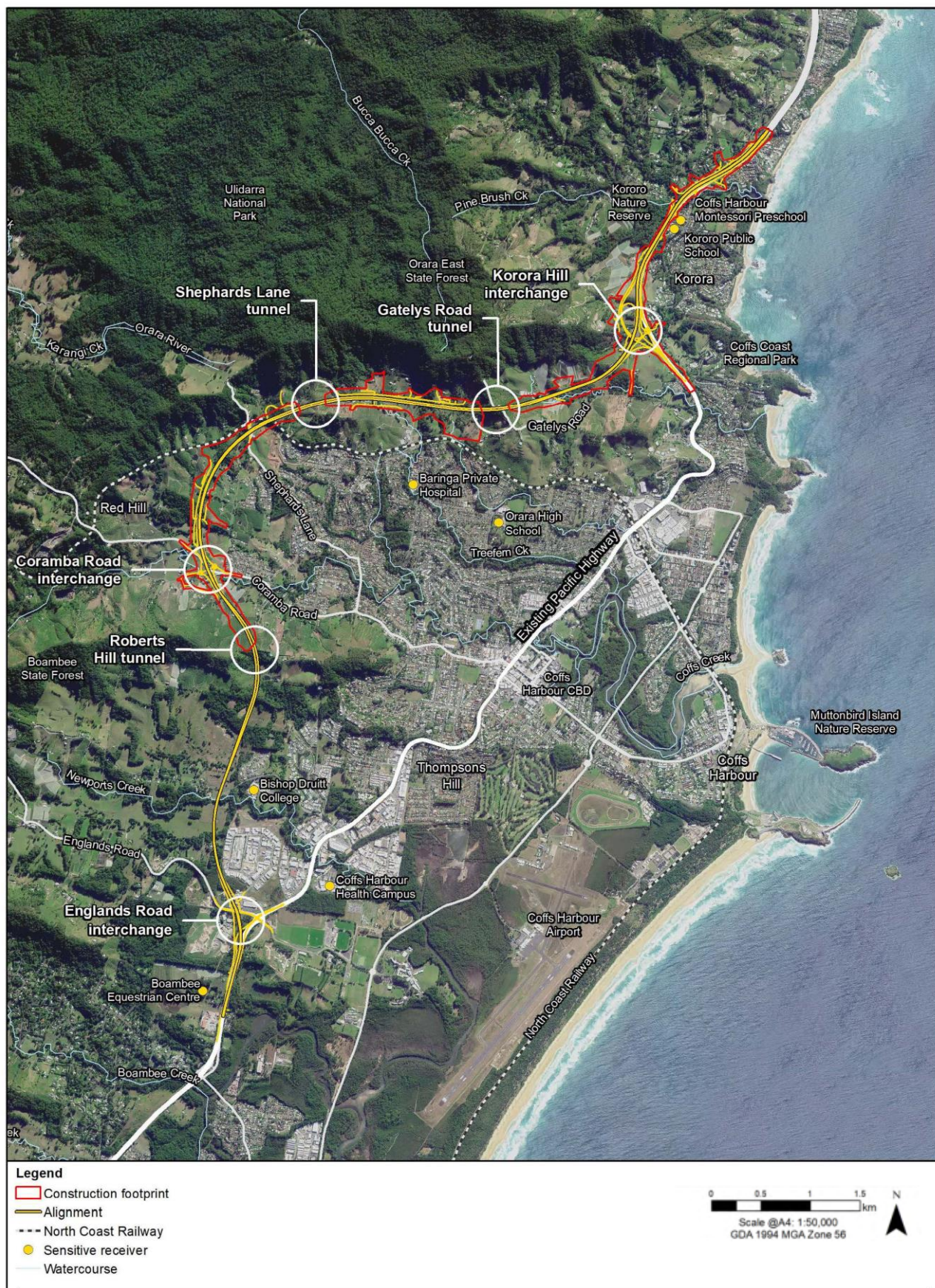


FIGURE 1 LOCATION OF COFFS HARBOUR BYPASS (SOURCE: FIGURE 1-2 AMENDMENT REPORT)

2 PURPOSE AND OBJECTIVES

2.1 SCOPE

The scope of this ASEMP is to describe the environmental management practices and procedures which will be implemented for the establishment of Ancillary Facility 1C.

The key activities to be established under this Plan include the:

- General site clearance, site establishment work, fencing and signage,
- Establishment of temporary ancillary facilities including the site office, crib sheds and concrete batching plant,
- Progressive installation of environmental controls including temporary or permanent fencing, and erosion and sediment control measures,
- Clearing and removal of vegetation (non-threatened species),
- Earthworks and site levelling
- Relocation, connection and/or protection of utilities; and
- Condition surveys and dilapidation assessments

This ASEMP is applicable to all activities required to establish the Ancillary Facility 1C. All FGJV staff and subcontractors are required to operate under the requirements of this ASEMP, over the duration of the establishment works.

Operation of the construction ancillary facilities will be undertaken in accordance with the Construction Environmental Management Plan (CEMP) and associated sub-plans.

2.2 PURPOSE

The purpose of this ASEMP is to outline the environmental management practices and procedures to be followed during establishment of the Ancillary Facility 1C. This ASEMP meets the requirements of MCoA A15 to prepare an Ancillary Site Establishment Management Plan, to be endorsed by the Environment Representative (ER) before it is submitted to the Department of Planning and Environment (DPE) Secretary for approval one month before the establishment of any construction ancillary facilities.

Details of the proposed ancillary facility site establishment activities and potential environmental impacts are summarised in Section 5. Management of these potential environmental impacts are summarised in Section 6 and will be undertaken in accordance with this ASEMP.

Definitions relating to the ASEMP included in the Instrument of Approval are provided in Table 1.

TABLE 1 DEFINITIONS

Term	Definition
Ancillary Facility	A temporary facility for construction of the CSSI including an office and amenities compound, construction compound, material crushing and screening plant, materials storage compound, maintenance workshop, testing laboratory and material stockpile area Note: where an approved CEMP contains a stockpile management protocol, a material stockpile area located within the construction boundary is not considered to be an ancillary facility
Construction	Includes all work required to build the CSSI as described in the documents listed in Condition A1, including commissioning trials of equipment and temporary use of any part of the CSSI and site demobilisation, but excluding the following low impact work which is completed prior to approval of the CEMP: (a) survey work including carrying out general alignment survey, installing survey controls (including installation of global positioning systems (GPS)), installing repeater stations, carrying out surveys of existing and future utilities and building and road dilapidation surveys; (b) investigations including investigative drilling, contamination investigations and excavation; (c) site establishment work approved under an Ancillary Site Establishment Management Plan; (d) operation of ancillary facilities if the ER has determined the operational activities will have minimal impact on the environment and community; (e) minor clearing and relocation of native vegetation (including translocation of threatened species in accordance with a plan required by the conditions of this approval), as identified in the documents listed in Condition A1;

Term	Definition
	(f) installation of mitigation measures including erosion and sediment controls, temporary exclusion fencing for sensitive areas and acoustic treatments; (g) property acquisition adjustment work including installation of property fencing, and relocation and adjustments of utilities to property including water supply and electricity; (h) relocation and connection of utilities where the relocation or connection has a minor impact to the environment as determined by the ER; (i) archaeological testing under the <i>Code of practice for archaeological investigation of Aboriginal objects in NSW (DECCW, 2010)</i> or archaeological monitoring undertaken in association with [(a)]-[(h)] above to ensure that there is no impact on heritage items; (j) archaeological and cultural salvage undertaken in accordance with a strategy or salvage operation required by the conditions of this approval; (k) maintenance of existing buildings and structures required to facilitate the carrying out of the CSSI; and (l) other activities determined by the ER to have minimal environmental impact which may include but not be limited to construction of minor access roads, temporary relocation of pedestrian and cycle paths and the provision of property access. However, where heritage items (excluding those impacted by activities (i) and (j) above), or threatened species (excluding translocation of threatened species in accordance with a translocation plan developed in consultation with EESG) or threatened ecological communities (within the meaning of the Biodiversity Conservation Act 2016 or Environment Protection and Biodiversity Conservation Act 1999) are affected or potentially affected by any low impact work, that work is construction, unless otherwise determined by the Planning Secretary in consultation with Heritage NSW, EESG (and DPI Fisheries in the case of impact upon fish, aquatic invertebrates or marine vegetation). Note: <i>The low impact work described in this definition becomes Construction with the approval of a Construction Environmental Management Plan. Where low impact work has already commenced, this is considered to remain as low impact work and is managed in accordance with the framework under which it commenced.</i>
Work	Any physical activities to construct or facilitate the construction of the CSSI, including environmental management measures and utility works. However, does not include activities that inform or enables the detailed design of the CSSI and generates noise that is no more than 5 dB(A) above the rating background level (RBL) at any sensitive land use.

MCoA No.	Requirement	Timing	CEMP Reference
E87	Local roads proposed to be used by heavy vehicles to directly access the construction boundary that are not shown in Figure 4.5-1 Response to Submissions Report must be approved by the Planning Secretary and included in the Traffic and Transport Management Sub-plan	Site establishment / Construction	Section 5.1.2

3.2 REVISED ENVIRONMENTAL MANAGEMENT MEASURES

Relevant REMM from the EIS Submissions and Amendment Reports are listed in Table 3 below. This includes reference to required outcomes, the timing of when the commitment applies, relevant documents or sections of the environmental assessment influencing the outcome and implementation.

TABLE 3 REVISED ENVIRONMENTAL MANAGEMENT MEASURES

REMM No.	Commitment	Timing	ASEMP Reference
NV08	Ancillary facilities will be designed to ensure that primary noise sources are at a maximum distance from residences (where reasonable and feasible), with solid structures (sheds, containers, etc.) placed between residences and noise sources (and as close to the noise sources as is practical).	Site establishment / Construction	Section 5.2
WM02	Spoil would be beneficially reused as part of the project before alternative spoil disposal options are pursued. Any excess spoil would be managed using the following order of priorities: - Review alignment and profile refinements during detailed design - Assess opportunities to reuse excess spoil in works such as landscaping and noise barriers within the construction footprint or in adjacent land (subject to property owner agreement and/or any project approval or POEO Act requirements) - Beneficial reuse within the construction footprint for rehabilitation of ancillary sites used for the project (where it is within the requirements of the project approval) - Transfer to other nearby Roads and Maritime projects for immediate use, where possible, pending construction of other projects or for use on future projects or routine maintenance - Transfer to a Roads and Maritime approved site for reuse on concurrent private/local government projects (with appropriate approvals as required, eg a section 143 notice under section 143(3A) of the POEO Act) - Disposal at an approved materials recycling or licensed waste disposal facility.	Site establishment / Construction	Section 5.9
WM03	Prior to construction, suitable areas within the ancillary sites or in other appropriate areas within the construction footprint would be allocated which provide adequate space and access for: - Progressive installation of environmental controls including temporary or permanent fencing, and erosion - Separated storage of building materials - Separated storage and sorting of construction waste - Removal of construction waste for recycling, reuse or disposal - Separated storage of known previously contaminated materials and contingency for unknown contaminated materials.	Site establishment / Construction	Section 4
WM06	Where reasonable and feasible, water captured within the construction footprint will be prioritised for reuse as construction water or dust suppression.	Site establishment / Construction	Section 5.14
HZ05	Appropriate spill containment equipment will be provided on-site and located at strategic, accessible locations.	Site establishment / Construction	Section 5.10
CI01	Where relevant, consultation would be undertaken with proponents of other nearby developments to increase the overall awareness of project timeframes and impacts.	Site establishment / Construction	Section 8.3

3.3 ADDITIONAL APPROVALS, LICENCES, PERMITS AND REQUIREMENTS

A number of approvals, permits and licenses have and/or will be obtained for the Project, these have been identified in Section 3.3.2 of the CEMP.

An Environment Protection Licence (EPL) (#21766) was issued for the Project by the NSW EPA on 21 March 2023.

4 SITE ESTABLISHMENT WORKS

4.1 ANCILLARY SITE ESTABLISHMENT ACTIVITIES

Table 4 describes the activities to be undertaken during establishment of the construction Ancillary Facility 1C and Table 5 includes scheduling and duration of work to be undertaken at the site.

An indicative layout for Ancillary Facility 1C is shown in Figure 2 and cross section for cut to fill earthworks in Figure 3.

TABLE 4 SITE ESTABLISHMENT ACTIVITIES

Activity	
Site preparation works	• Provision of site security such as temporary fencing panels and perimeter fencing • Provision of minimum WHS requirements including toilet facilities (via portaloo) • Signage and pedestrian diversions (installation of traffic barriers) including way-finding signage • Set up of traffic controls as required and controlled entry and egress points • Ground penetrating radar or electromagnetic ground investigation • Utility investigation by potholing with a vacuum truck • Installation of clearing limit fencing, including retention of vegetation (if applicable) • Formalisation of access and egress points
Initial environmental controls	• Erosion, sediment and water flow controls • Delineation of sensitive areas and temporary fencing
Clearing	• Clearing and grubbing which will involve the use of chain saws, excavators and mulchers
Earthworks, site levelling and minor stockpile area	• Site levelling, grading and compaction which will involve the use of vibratory rollers (including within the area of the proposed future Concrete plant). • Management of existing slurry bays from previous land owner. • Designated stockpile (topsoil) /laydown area/materials storage area • Sealing of hardstand areas, which will involve the use of vibratory rollers • Temporary stabilisation of hardstand areas with soil binding polymer where required. • Hardstand area will be finished with imported road base material (cement stabilised if required) if required depending on construction staging.
Utilities: • Electrical • Water • Communications	• Protection of existing services (if required) • Installation of services to the site including water, power, communications • Electricity will be supplied to the site via generator, with the feasibility of a permanent mains connection to be determined at a later stage. • Potable water may be required to be provided via tanker until connection to council infrastructure is completed
Installation of concrete batching plant	• Concrete works will be required for certain areas which require slab foundations or pad footings. • Equipment will be delivered to site which includes: – Cement and Fly Ash Silo's – Conveyors and Loading Bins as required – Twin Dry Concrete Batch Plant Unit – Genset – Water Storage Units – Water Chiller – Office, Crib, Ablution facilities • Aggregate will be stored in stockpiles surrounding plant.

Activity	
	Commissioning of the plant.
Installation of crib and amenities	- Installation of one crib building and shipping containers which will be delivered on semi-trailers and unloaded with mobile crane - Installation of staff amenities including one ablution block - Installation of designated wash out areas (i.e. concrete slabs which will involve the use of power saws, elevated work platforms, concrete pumps / trucks)
Fit out, commissioning and install of remaining site infrastructure	- Minor storage and use of chemical and hazardous material, in accordance with AS 1940 (paints, solvents, glues, sealants, cements, grease, oils and fuels) in order to facilitate set up of compound - Set up of on-site parking spaces for light vehicles (approximately eight spaces) and concrete agitators (approximately seven spaces)

An indicative establishment program for Ancillary Facility 1C is shown in Table 5.

It is not envisaged that upgrades to the site access and/or Englands Road will be required given the current state of the road and driveway is stabilised and suitable for both light vehicles and concrete agitators. Should the need for any future upgrades be identified, these would be undertaken as part of the broader construction program within the Project Footprint and be managed in accordance with the safeguards contained in the CEMP.

TABLE 5 INDICATIVE SITE ESTABLISHMENT PROGRAM

Principal Activities	May-23	June-23	July-23
Site preparation works	X		
Initial environmental controls	X		
Clearing	X		
Earthworks, site levelling and minor stockpile area	X	X	
Utilities (Electrical, water and communications)	X	X	
Installation of concrete batching plant		X	X
Installation of crib and amenities		X	X
Fit out, commissioning and install of remaining site infrastructure			X

The ancillary facility will be in operation throughout construction of the Project and expected to support up to 10 workers during concrete batching operations. The site will be decommissioned following construction completion, which is estimated to be completed by December 2026.

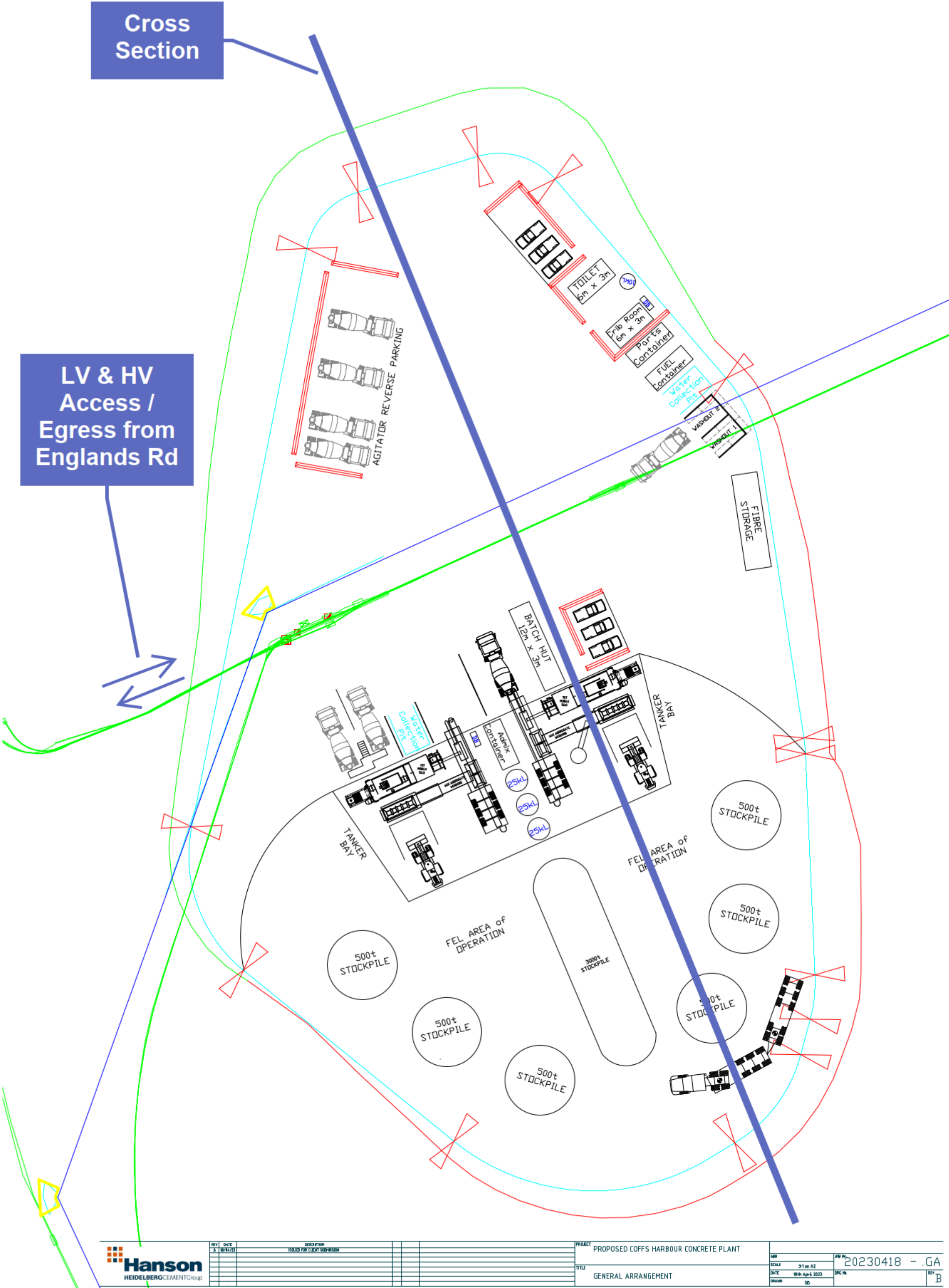


FIGURE 2 INDICATIVE ANCILLARY FACILITY 1C LAYOUT AND ACCESS

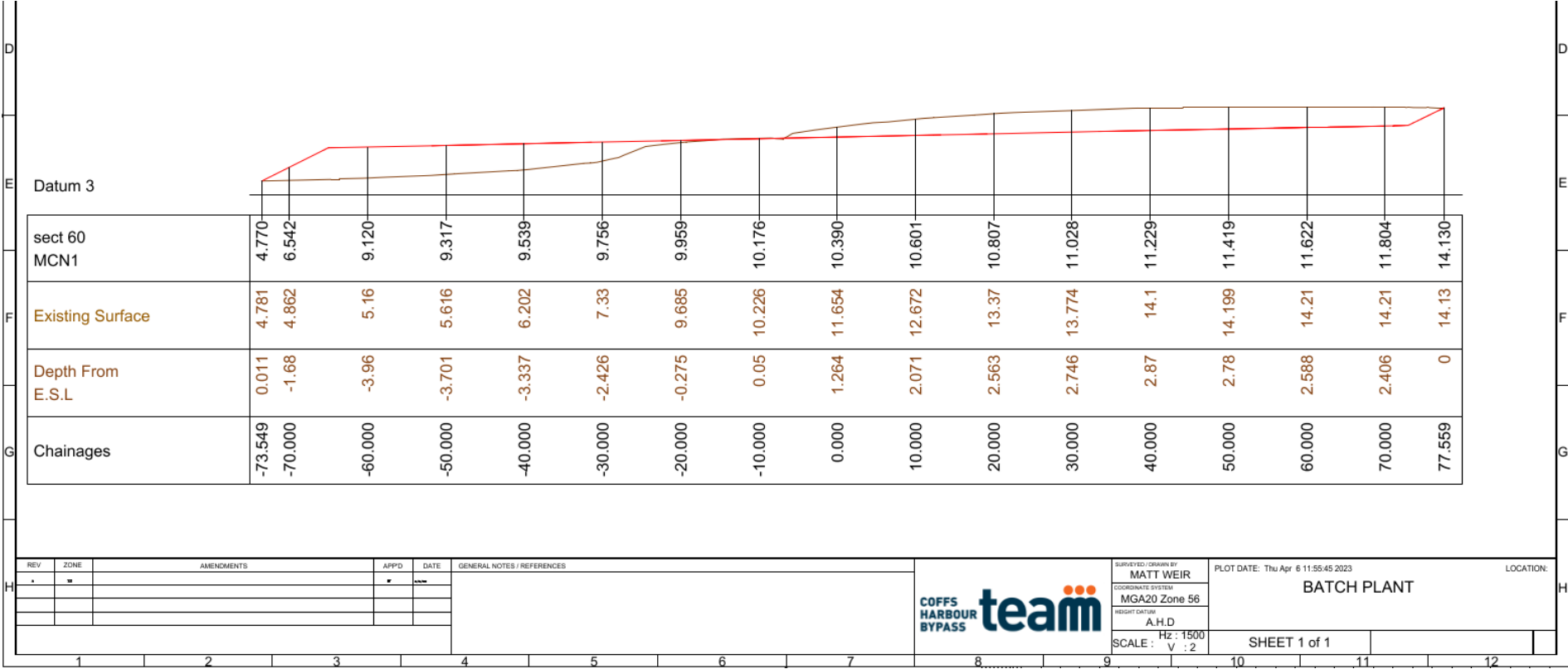


FIGURE 3 CUT AND FILL ASSESSMENT

4.2 CONSTRUCTION HOURS

Standard construction hours for site establishment works as set in MCoA E32 are as follows:

- 7:00am to 6:00pm Mondays to Fridays, inclusive,
- 8:00am to 1:00pm Saturdays; and
- At no time on Sundays or public holidays.

Out of hours works (OOHW) are not anticipated, however may be required to undertake utility connections or for oversized deliveries to the Ancillary Facility 1C. Any OOHW will be managed in accordance with the Project EPL and/or the OOHW Protocol contained in the Construction Noise and Vibration Management Plan (CNVMP).

Notwithstanding Conditions E32 variations to work hours may be permitted in the following circumstances:

- a) *for the delivery of materials required by the NSW Police Force or other authority for safety reasons; or*
- b) *where it is required in an emergency to avoid injury or the loss of life, to avoid damage or loss of property or to prevent environmental harm; or*
- c) *where different construction hours are permitted or required under an EPL in force in respect of the CSSI; or*
- d) *work not subject to an EPL that are approved under an **Out-of-Hours Work Protocol** as required by **Condition E40**; or*
- e) *construction that causes LAeq(15 minute) noise levels:*
 - i. *no more than 5 dB(A) above the rating background level at any residence in accordance with the Interim Construction Noise Guideline (DECC, 2009), or*
 - ii. *no more than the 'Noise affected' noise management levels specified in Table 3 of the Interim Construction Noise Guideline (DECC, 2009) at other sensitive land uses, or*
- f) *continuous or impulsive vibration values, measured at the most affected residence are no more than the preferred values for human exposure to vibration, specified in Table 2.2 of Assessing Vibration: a technical guideline (DEC, 2006), or*
- g) *intermittent vibration values measured at the most affected residence are no more than the preferred values for human exposure to vibration, specified in Table 2.4 of Assessing Vibration: a technical guideline (DEC, 2006); or*
- h) *negotiated agreements with directly affected residents and sensitive land uses*

5 ENVIRONMENTAL ASPECTS AND POTENTIAL IMPACTS

5.1 TRAFFIC AND TRANSPORT

A Road Dilapidation report will be prepared for Englands Road by a suitably qualified person before it is used by any heavy vehicles as described in MCoA E91. A copy of the Road Dilapidation Report must be provided to Council within three weeks of completion of the survey and at least two weeks before the road is used by heavy vehicles associated with the construction of the CSSI. Site access points will only be implemented once the road safety audit is complete, and any identified actions have been implemented.

Traffic-related impacts during site establishment of Ancillary Facility 1C will be managed through the implementation of the Construction Traffic and Transport Management Plan (CTTMP) which forms part of the CEMP for the Project.

5.1.1 SITE ACCESS AND PARKING

Construction traffic movements including heavy and light vehicles to and from Ancillary Facility 1C are expected to be contained within the construction footprint and will travel via the Pacific Highway and Englands Road as shown in Figure 2 and Figure 4. This access point is in accordance with Section 6.4.1 (EIS 2020, Appendix F), which states '*Vehicular access to Zone 1 would be via the existing Pacific Highway, Englands Road and North Boambee Road*'.

The delivery and removal of construction materials would mainly occur during standard work hours and would be scheduled to avoid peak traffic conditions on the road network (such as weekday peak school and commuter times and holiday periods) where possible.

Temporary on-site parking will be available to minimise on-street parking impacts on surrounding public local roads.

5.1.2 LOCAL ROAD IMPACTS

The EIS assessed potential increases in traffic volumes on roads used for construction access. The construction traffic volumes represent peak construction traffic movements for the haulage of materials and access by construction workers.

Englands Road is classified as a local sub-arterial road and is currently used by heavy vehicles accessing the industrial estate located north-west of the Englands Road interchange and to Coffs Coast Resource Recovery Park. The section of Englands Road to be used by the Project has a nominal upper limit capacity of 10,000 vpd as per Development Specification Design 0041 Geometric Road Layout (CHCC 2009b). The total predicted daily traffic volumes on this road with the addition of construction traffic would be 5810 vpd. This would be less than the maximum volume for a local sub-arterial road, as such, peak construction traffic is not anticipated to result in adverse traffic impacts.

Use of Englands Road was identified as a potential construction access in the Response to Submissions Report (refer to Figure 4). Therefore, no additional approvals to use the road are required under CoA E87.

Regardless, appropriate traffic control and management measures will be implemented in accordance with the CTTMP.

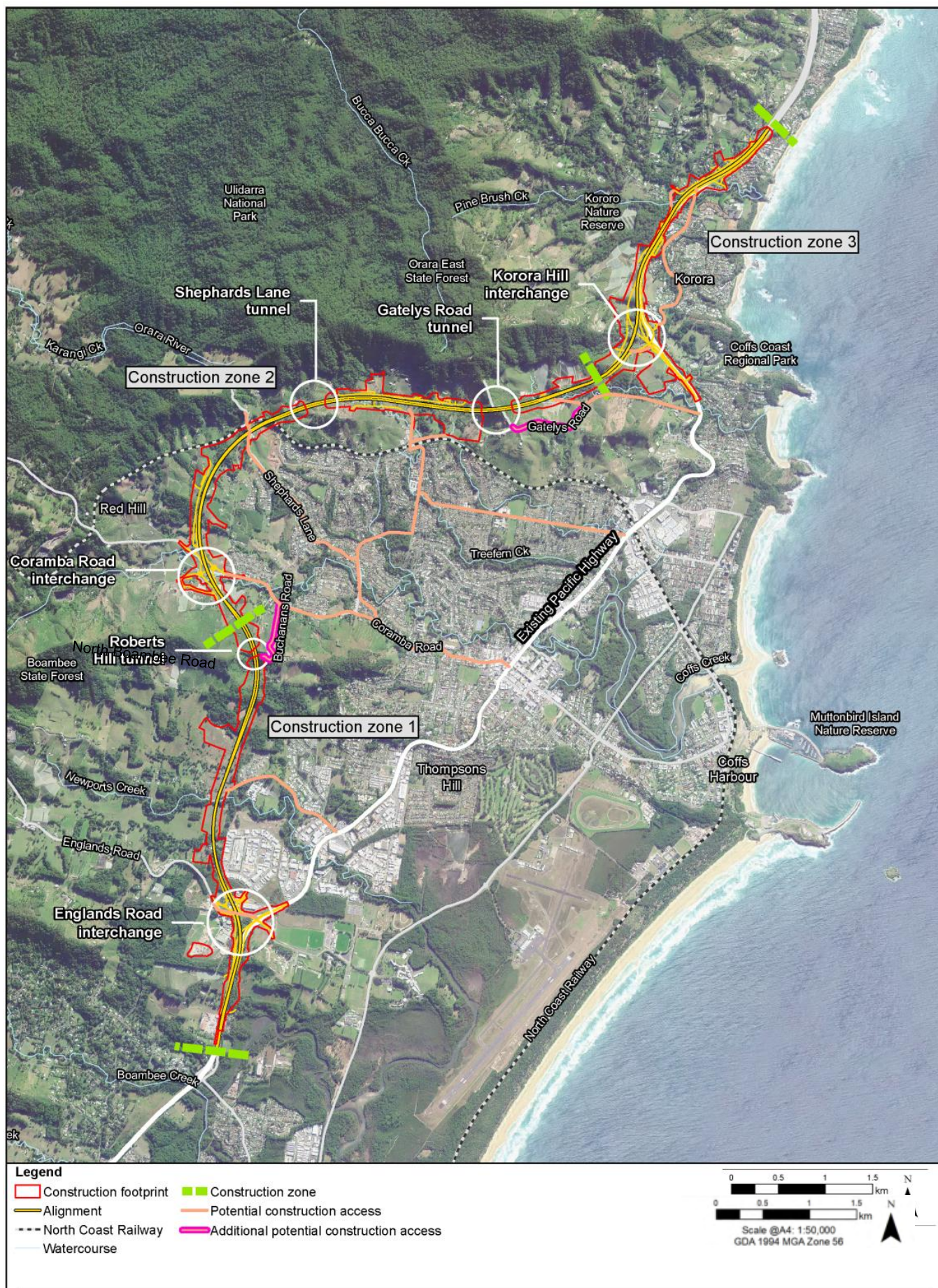


FIGURE 4 HEAVY VEHICLE ROUTES (SOURCE: FIGURE 4.5-1 SUBMISSIONS REPORT)

5.1.3 MATERIAL HAULAGE

Site establishment would require a range of materials to be transported to and within the Ancillary Facility 1C footprint. Typical materials that would be transported for site establishment could include:

- Earthwork materials, such as topsoil, general fill and select fill
- Aggregates for drainage, road surfaces, and miscellaneous work such as signpost footings
- Cement and fly ash for producing concrete

The cut and fill balance within this site has been balanced as far as possible to minimise spoil haulage requirements. Fill for earthworks would be sourced predominantly from within the Ancillary Facility 1C construction footprint; however, some fill may need to be imported from local quarries and/or removed offsite as surplus. See Figure 3 for indicative cross section for cut to fill earthworks.

Environmental safeguards have been recommended to mitigate the effects of site establishment works on local traffic and transport including scheduling project related transport movements to avoid peak traffic, identifying heavy vehicle routes and communicating these with the drivers. Refer to the CTTMP for further detail on traffic and transport management measures.

5.2 NOISE AND VIBRATION

Proposed site establishment works may result in potential noise and vibration impacts due to using heavy machinery and hammering activities on hardstands/slabs/plinths.

The EIS assessed the construction noise and vibration impacts for indicative site compound construction activities. Impacts were predicted during standard construction working hours and for the likely out of hours work. The majority of sensitive receivers identified in close proximity to the Ancillary Facility 1C are commercial (NC04, NC05 and NC07) as shown on Figure 5.

The nearest residential receivers are located to the north of the Ancillary Facility on Englands Road. These residents have also been identified as eligible for at-property noise treatment to mitigate both construction and operational noise impacts. Given the at-property treatment at these residences has not yet been completed, the noise reduction benefit of the future treatment has not been included in the noise assessment below. Once treatment has been installed, it will be considered in future noise assessments relating to the operation of Ancillary Facility 1C.

To further inform the noise impacts relating to the construction of the Ancillary Facility 1C site a noise assessment has been undertaken using the FGJVs noise assessment tool 'NoiseCheck', see below and Appendix B.



5.2.1 'NOISECHECK' NOISE AND VIBRATION ASSESSMENT

Three preliminary noise scenario assessments have been prepared for the works for the Ancillary Facility 1C site establishment activities, see Appendix B. All works are proposed to occur during the day period (RMS CNVG). The assessments include:

- Noise prediction results,
- Assessment against RMS CNVG requirements; and
- Proposed noise management and mitigation measures.

Noise assessments were undertaken using the 'NoiseCheck' noise prediction platform which adopts a database of predictions that are generated in third party proprietary software which conforms to ISO9613 Acoustics - Attenuation of Sound During Propagation Outdoors - Part 2: General Method of Calculation. The predictions consider source to receiver distance and height and the noise attenuation provided by ground and air absorption, topography, surrounding buildings and other solid objects and permanent noise barriers using AS 2346-2010 equipment data. The Noisecheck tool gives the reading at the most affected façade and story of the property.

The three noise scenarios modelled for the Ancillary Facility 1C site were:

- Clearing of non-threatened vegetation (chainsaw and chipper),
- Earthworks and site levelling (excavator, dump truck and padfoot roller), and
- Concrete batch plant installation works (batch plant component installation via crane).

Noise predictions for the proposed works have been completed at the nearest receiver as shown in Appendix B. The number of properties which exceed the NML for each land use surrounding the site are summarised in Table 6 below for each stage of works:

TABLE 6 SITE COMPOUND NOISE PREDICTIONS

Land use	Number of Properties Impacted				Duration of works
	Noticeable	Clearly Audible	Moderately Intrusive	Highly Intrusive	
Vegetation clearing					
Residential	1	5	0	0	1-3 days
Hospital	1	0	0	0	
Earthworks and site levelling					
Residential	0	5	0	0	10 to 15 days
Hospital	1	0	0	0	
Concrete batch plant installation works					
Residential	5	0	0	0	15-20 days

Site establishment noise impacts would be managed using the measures outlined in Construction Noise and Vibration management Plan (CNVMP). Some of these measures include:

- Plant and equipment noise verification monitoring,
- Limit equipment use,
- Timing of equipment in use,
- Limit activity duration,
- Equipment selection,
- Respite periods,
- Non-tonal reversing alarms,
- Site inductions and toolbox talks, and
- Community consultation

Additional mitigation measures in Section 5.2.3 will also be implemented dependant on the noise classifications.

As detailed in Section 7.3, noise monitoring to validate the predicted noise impacts during site establishment of Ancillary Facility 1C will be undertaken in accordance with the Construction Noise and Vibration Monitoring Program.

5.2.2 VIBRATION IMPACTS

As a guide, minimum working distances from sensitive receivers for typical items of vibration intensive plant are listed in Table 7. The minimum distances are quoted for both “cosmetic” damage (refer BS 7385) and human comfort (refer OH&E’s Assessing Vibration - a technical guideline). The minimum working distances for cosmetic damage will be complied with at all times, unless otherwise approved or under the environmental license as relevant. DIN 4150 has criteria of particular reference for heritage structures.

TABLE 7 RECOMMENDED MINIMUM WORKING DISTANCES FOR VIBRATION INTENSIVE PLANT FROM SENSITIVE RECIEVER

Plant Item	Rating/Description	Safe working distance	
		Cosmetic Damage (BS 7385)	Human Response (NSW EPA Vibration Guideline)
Vibratory Roller	< 50 kN (Typically 1-2t)	5m	15 m to 20 m
	< 100 kN (Typically 2-4t)	6m	20m
	< 200 kN (Typically 4-6t)	12m	40m
	< 300 kN (Typically 7-13t)	15m	100m
	< 300 kN (Typically 13-18t)	20m	100m
	< 300 kN (Typically >18t)	25m	100m
Small Hydraulic Hammer	300 kg - 5 to 12t excavator	2m	7m
Medium Hydraulic Hammer	900 kg - 12 to 18t excavator	7m	23m
Large Hydraulic Hammer	1600 kg - 18 to 34t excavator	22m	73m
Vibratory Pile Driver	Sheet piles	2m to 20m	20m
Pile Boring	≤ 800 mm	2m (nominal)	4m
Jackhammer	Hand held	1m(nominal)	2m

The minimum working distances are indicative and will vary depending on the particular item of plant and local geotechnical conditions. They apply to cosmetic damage of typical buildings under typical geotechnical conditions.

Impacts from vibration will be low because the minimum distances will be adhered to. If a vibration complaint is received, a suitably qualified person, authorised by the EM will undertake vibration monitoring and if an exceedance is found then the methodology will be reviewed and/or appropriate mitigation measures will be put in place. Mitigation will need to be considered where measurement indicates likely exceedance at sensitive receiver locations.

5.2.3 ADDITIONAL MITIGATION MEASURES

The TfNSW Construction Noise and Vibration Guideline (CNVG) provides additional mitigation measures for consideration in circumstances where predicted noise impacts following application of standard mitigation measures still results in exceedance of Noise Management Levels.

The CNVG provides triggers for review of reasonable and feasible mitigation measures for noise and vibration. Air borne noise criteria for additional mitigation is shown below in Table 8 (CNVG Table C.1). Vibration criteria for additional mitigation is shown in Figure 10 (CNVG Table C.3).

TABLE 8 CNVG TRIGGERS FOR ADDITIONAL MITIGATION MEASURES – AIRBOURNE NOISE

Predicted airborne $L_{Aeq}(15min)$ noise level at receiver			Additional mitigation measures	
Perception	dB(A) above RBL	dB(A) above NML	type ¹ :	Mitigation Levels ² :
All hours				
75dBA or greater			N, V, PC, RO	HA
Standard Hours: Mon - Fri (7am – 6pm), Sat (8am – 1pm), Sun/Pub Hol (Nil)				
Noticeable	5 to 10	0	-	NML
Clearly Audible	10 to 20	< 10	-	NML
Moderately intrusive	20 to 30	10 to 20	N, V	NML+10
Highly intrusive	> 30	> 20	N, V	NML+20
OOHW Period 1: Mon – Fri (6pm – 10pm), Sat (7am – 8am & 1pm – 10pm), Sun/Pub Hol (8am – 6pm)				
Noticeable	5 to 10	< 5	-	NML
Clearly Audible	10 to 20	5 to 15	N, R1, DR	NML+5
Moderately intrusive	20 to 30	15 to 25	V, N, R1, DR	NML+15
Highly intrusive	> 30	> 25	V, IB, N, R1, DR, PC, SN	NML+25
OOHW Period 2: Mon – Fri (10pm – 7am), Sat (10pm – 8am), Sun/Pub Hol (6pm – 7am)				
Noticeable	5 to 10	< 5	N	NML
Clearly Audible	10 to 20	5 to 15	V, N, R2, DR	NML+5
Moderately intrusive	20 to 30	15 to 25	V, IB, N, PC, SN, R2, DR	NML+15
Highly intrusive	> 30	> 25	AA, V, IB, N, PC, SN, R2, DR	NML+25

Notes (refer to detailed descriptions):

- 1 AA = Alternative Accommodation
V = Verification
IB = Individual briefings
N = Notification
R2 = Respite Period 2

DR = Duration Respite
R1 = Respite Period 1
PC = Phone calls
SN = Specific notifications
Perception = relates to level above RBL

- 2 NML = Noise Management Level

HA = Highly Affected (> 75 dB(A) - applies to residences only)

TABLE 9 TRIGGERS FOR ADDITIONAL MITIGATION MEASURES - VIBRATION

Predicted ground-borne $L_{Aeq}(15min)$ noise level at receiver		Additional mitigation measures	
perception	dB(A) above GB NML	type ¹ :	apply to ² :
Standard Hours: Mon - Fri (7am – 6pm), Sat (8am – 1pm), Sun/Pub Hol (Nil)			
Predicted Vibration Exceeds Maximum levels	V, N, RP		All
OOHW Period 1: Mon – Fri (6pm – 10pm), Sat (7am – 8am & 1pm – 10pm), Sun/Pub Hol (8am – 6pm)			
Clearly Audible	< 10	N	All
Moderately intrusive	10 to 20	V, N, R1, DR SN	All
Highly intrusive	> 20	V, IB, N, PC, SN, R1, DR	All
OOHW Period 2: Mon – Fri (10pm – 7am), Sat (10pm – 8am), Sun/Pub Hol (6pm – 7am)			
Clearly Audible	< 10	V, N, SN	All
Moderately intrusive	10 to 20	AA, V, IB, N, PC, RP, SN, R2, DR	All
Highly intrusive	> 20	AA, V, IB, N, PC, RP, SN, R2, DR	All

Notes:

- | | | |
|---|--|---|
| 1 | AA = Alternative accommodation
V = Validation of predicted noise levels
IB = Individual briefings
N = Notification box drops
R2 = Respite Period 2 | DR = Duration Respite
R1 = Respite Period 1
PC = Phone calls
SN = Specific notifications |
| 2 | All affected receivers | |

5.3 BIODIVERSITY

The EIS identified nine Plant Community Types (PCTs) within and the potential for ten threatened ecological communities (TECs) listed under the EPBC Act and/or BC Act to occur in the Project study area.

Field surveys confirmed the presence of two PCTs, one of which is also listed under the BC Act as a TEC within the Ancillary Facility 1C footprint (refer to Figure 6). The approximate area (m²) of the PCTs and TEC within the footprint is outlined in Table 10. All other vegetation within the footprint is urban native/exotic vegetation.

The TEC located within the northern extent of Ancillary Facility 1C has been identified for retainment and will therefore not be impacted. The other PCT and urban native/exotic vegetation will be removed as part of clearing during site establishment. All clearing and grubbing will be undertaken in accordance with the environmental safeguards detailed in the Construction Biodiversity Management Plan (CBMP) and Clear and Grub Environmental Work Method Statement (EWMS).

TABLE 10 PCT AND TEC EXTENT IN THE ANCILLARY FACILITY 1C AREA

Vegetation formation	Plant community type	TEC scientific name (if applicable)	Conservation status (if applicable)	Ancillary Facility 1C Area
Wet Sclerophyll Forest (Shrubby sub-formation)	PCT 692 Blackbutt – Tallowwood moist ferny open forest of the coastal ranges of the NSW North Coast Bioregion (NR120)	-	-	550m ²
Forested Wetland	PCT 1064 Paperbark swamp forest of the coastal lowlands of the NSW North Coast Bioregion and Sydney Basin Bioregion (NR217)	Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions (Swamp Sclerophyll Forest Endangered Ecological Community (EEC))	BC Act (E3)	1000m ²

5.4 URBAN DESIGN, LANDSCAPE AND VISUAL AMENITY

Given the distance between the Ancillary Facility and the nearest residential receivers and the existing screening vegetation, visual impacts are anticipated to be negligible. Regardless, the facility will be designed and constructed to minimise light spill in accordance with E66 and E67 by orientating site lighting to shine away from the nearest residents, and by minimising the amount of light installed as far as is practical and safe. This will be reviewed following installation to ensure impacts are avoided.

Boundary security fencing will be erected around the Ancillary Facility 1C for the duration of construction of the Project unless otherwise agreed with affected residents, business operators or landowners in accordance with CoA A18. Given the Ancillary Facility is fully contained within the Project construction boundary and does not border any receivers no additional screening is proposed on the security fencing.

The telephone number, postal address and email address will be made on all site boundary fencing at each construction site before commencement of construction. The information will also be provided on the website in accordance with MCoA B8.

Project activities for the Ancillary Facility 1C, would not result in significant changes in landscape given the area is already associated with commercial and industrial areas.

5.5 LAND USE AND PROPERTY

Project activities for the Ancillary Facility 1C, would not result in significant changes in land use given the area is already associated with commercial activities.

Ancillary Facility 1C is also not located in an area of Panama Disease risk (former and/or current banana plantation).

5.6 ABORIGINAL CULTURAL HERITAGE

The Ancillary Facility 1C site is located adjacent to two previously identified heritage sites, sites 'CHB AFT 9' and 'CHB IF 3'. These areas have been cleared/salvaged by the project Archaeologist and RAP's, see Figure 8. There will be no impact to Aboriginal cultural heritage items.

If any unexpected heritage items (including human remains) are encountered, works potentially affecting the find will cease immediately and the Unexpected Heritage Finds and Human Remains Procedure (Appendix A of the Construction Heritage Management Plan (CHMP)) will be initiated in accordance with REMM AH01, AH06-AH07.

Aboriginal heritage environmental safeguards to avoid, minimise and mitigate impacts to previously unidentified items of Aboriginal heritage are included in the CHMP.

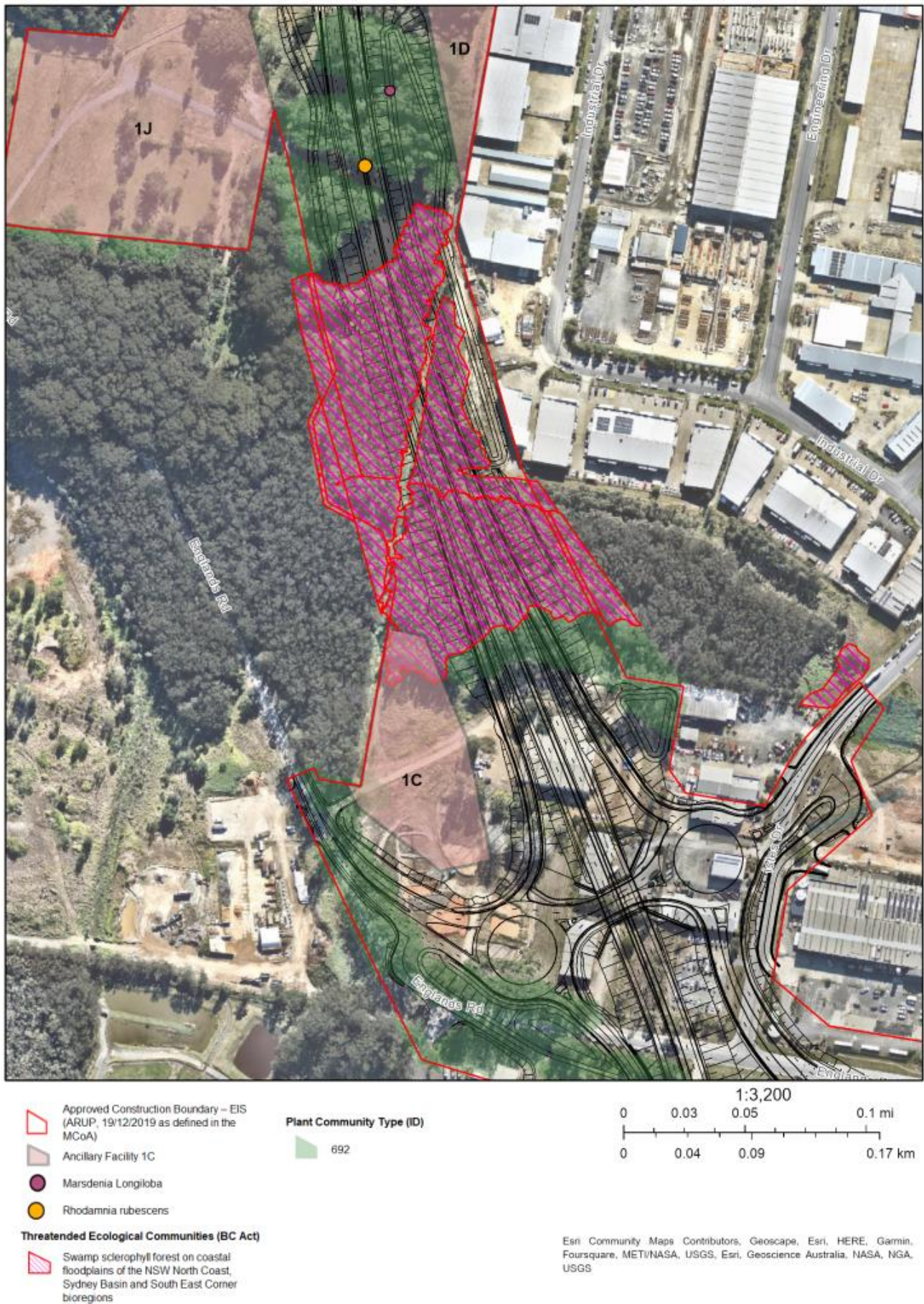
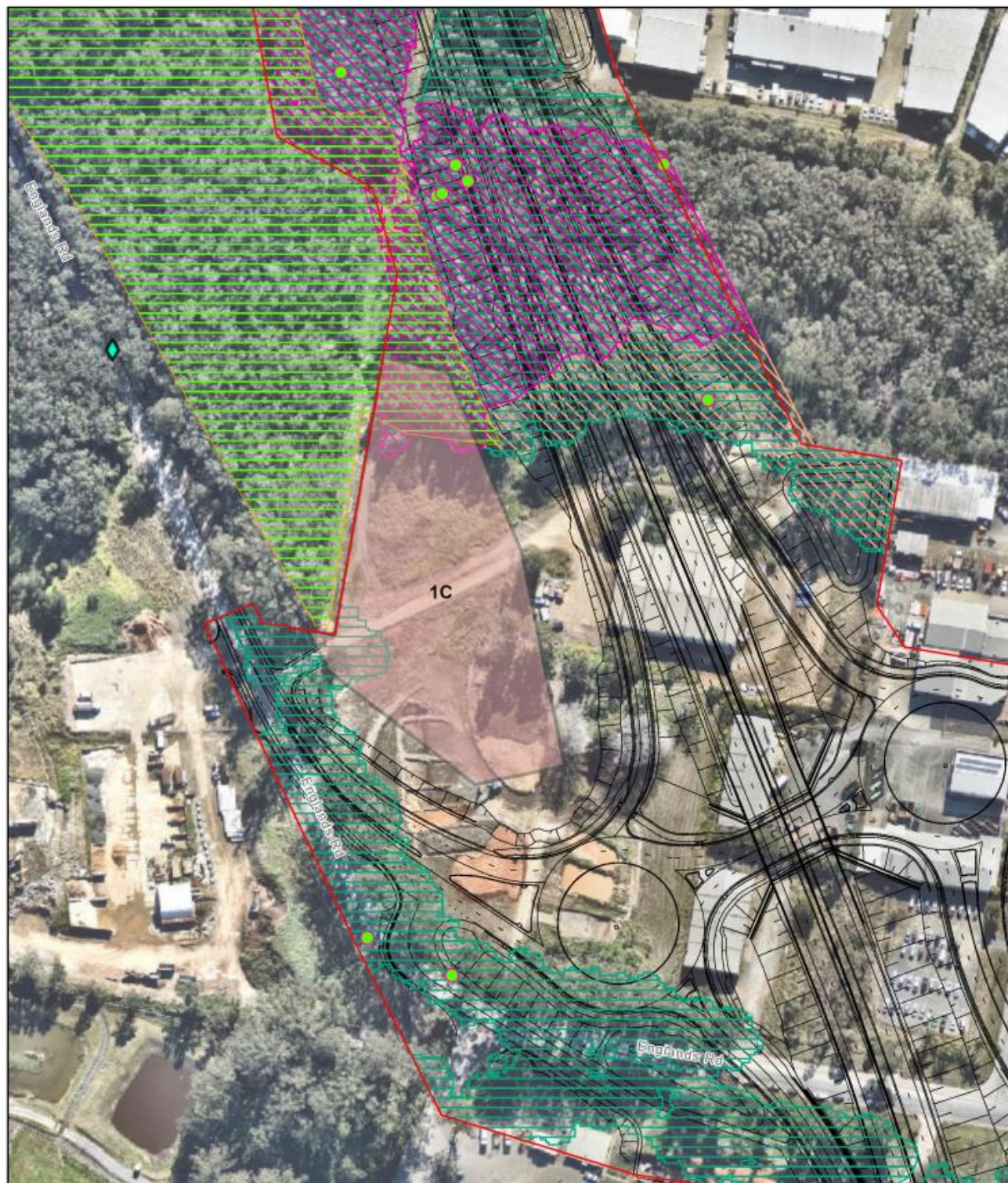


FIGURE 6 ECOLOGICAL CONSTRAINTS – EECS AND NATIVE VEGETATION



- | | | | |
|--|--|-----------------------------------|-------------------------|
| | Approved Construction Boundary – EIS (ARUP, 19/12/2019 as defined in the MCoA) | | Proposed nest box site: |
| | Ancillary Facility 1C | Threatened Species Habitat | |
| | Hollow bearing trees | | Koala |
| | Culverts with high probability of Microbats | | Coastal Petaltail |

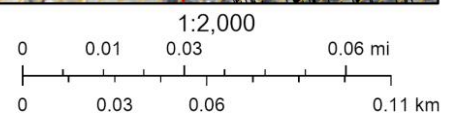
1:2,000
0 0.01 0.03 0.06 mi
0 0.03 0.06 0.11 km

Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodastystreisen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community, Esri Community Maps Contributors, Spatial Services, Geoscape, Esri, HERE, Garmin, Foursquare, METI/NASA,

FIGURE 7 ECOLOGICAL CONSTRAINTS – FAUNA HABITAT



-  Approved Construction Boundary – EIS
(ARUP, 19/12/2019 as defined in the MCoA)
-  Ancillary Facility 1C
-  Cultural Heritage Site (salvaged)
-  Cultural Heritage Area



Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community, Esri Community Maps Contributors, Spatial Services, Geoscape, Esri, HERE, Garmin, Foursquare, METI/NASA,

FIGURE 8 HERITAGE CONSTRAINTS

5.7 HISTORICAL HERITAGE

There are no historical heritage items located within the footprint of the Ancillary Facility 1C site location, however if unexpected items are discovered the Unexpected Heritage Finds and Human Remains Procedure (Appendix A of the CHMP) will be initiated in accordance with REMM NAH01 and NAH06. There will be no impact to historical heritage items.

Environmental management measures have been developed as part of the HMP to avoid and minimise potential and actual impacts on items of known and unknown historical heritage.

5.8 FLOODING AND HYDROLOGY

The northern portion of Ancillary Facility 1C (approximately 0.2ha / 15% of the total site area) is part of the Newports Creek floodplain and is located within the 5% AEP flood zone, as assessed in the project Amendment Report 2020 (refer to Figure 9). This part of the site is also at risk of frequent high flood depths and velocities during the 18% AEP flood event. Pre-existing flood depths in this area range from 0.25 m to 1.5 m during the 5% AEP and 0.5 m to 1 m during the 18% AEP.

Flood risk within these areas of the Ancillary Facility will be mitigated through site levelling with the fill areas being brought up to above the existing flood levels. Refer to Figure 3 for the cut and fill assessment for Ancillary Facility 1C. In addition, any flood risks during site establishment works, will be managed in accordance with the Construction Flood Management Plan (Appendix of the CEMP).

5.9 SOILS, SPOIL AND CONTAMINATION

Ancillary Facility 1C is partially located within one area of known contamination, 'APO14', which was assessed by TfNSW as part of the Phase 2 contamination investigations (refer to Figure 10). Investigations found elevated heavy metal concentrations in some areas of shallow fill within the ancillary facility boundary. Excavation and reuse of this material on site will be managed in accordance with an approved Remediation Action Plan (RAP).

In the event of encountering any other unexpected contamination finds, the Unexpected Contaminated Land and Asbestos Finds Procedure (Appendix of the Construction Soil and Water Management Plan (CSWMP)) will be followed.

Saline soils and acid sulfate materials have not been identified in the area of Ancillary Facility 1C and the risk of encountering these soil types is considered is low.

All spoil will be managed on site with no spoil to go offsite as part of the Ancillary Facility 1C works. Control measures to manage dust, odour and cross contamination will be implemented in accordance with the Stockpile Management Procedure (Appendix of the Soil and Water Management Plan (SWMP)).

Earthworks have been balanced from cut to fill to ensure excess material disposal is minimised (see Figure 3). Topsoil will be stored on site for use in rehabilitation of the site as part of the permanent Project landscaping.

The contamination environmental safeguards detailed in the CSWMP would be implemented to ensure that risks arising from the disturbance and excavation of land and disposal of soil are minimised.

5.10 HAZAROUS SUBSTANCES

A minor amount of hazardous substances will be handled and stored in accordance with Safety Data Sheets. Chemical storage areas will be designed, installed, and maintained in accordance with the NSW EPA Guidelines. Minor chemicals, solvents and paints will be stored within a lockable chemical cage with the following minimum requirements:

- Rooved, or equipped with a mechanism to drain captured stormwater following rainfall,
- Designed with an effective capacity of 25% of the total storage volume or 120% volume of the largest container; and
- Refuelling bay, if required, to minimise spillage.

All hazardous storage areas will be subject to weekly environmental inspections as a minimum. Additional inspections following rainfall will be completed to ensure design capacity is maintained.

5.11 SURFACE WATER QUALITY

Ancillary Facility 1C is located within the Boambee Creek catchment and approximately 50 meters upstream from the nearest waterway (unnamed tributary of Newports Creek).

If not appropriately managed, earthworks, site levelling and clearing works have the greatest potential to impact on surface water quality through soil and sediments transported offsite into waterways during rainfall events. Use of chemicals, oils, grease and hydrocarbons also have the potential to cause spills which can directly pollute waterways.

Water quality risks will be managed through implementing standard site mitigation measures including clean water diversions, stabilising disturbed ground and exposed soils, installation of erosion controls and using appropriate storage with secure bunding for chemicals and fuels in accordance with a Progressive Erosion and Sedimentation Control Plan (PESCP) (refer to Section 6.3).

Soil and water environmental safeguards for the storage and stockpiling of materials, fuel and wastes during site establishment, including spill prevention and response procedures, are included in Construction Soil and Water Management Plan (CSWMP).

Actual surface water quality impacts and the performance of soil and water environmental safeguards at Ancillary Facility 1C will be monitored as part of the Surface Water and Groundwater Quality Monitoring Program (refer to Section 7.4).

5.12 GROUNDWATER

The existing slope of the Ancillary Facility 1C location requires a cut to fill earthworks methodology to be undertaken to level out areas of the site for the required infrastructure. These earthworks will require a 3m cut the deepest point which is well above the existing water table recorded in the area. Given the relatively shallow excavation required to construct the Ancillary Facility 1C, impacts to the hydrogeological regime are not expected.

Though impacts are not anticipated, potential changes to groundwater during site establishment of Ancillary Facility will be monitored as part of the Project-wide Surface Water and Groundwater Quality Monitoring Program (refer to Section 7.4).

5.13 AIR QUALITY

Activities with the potential to cause dust generation on the Ancillary Facility 1C site include cut to fill earthworks, clearing and vehicle movements throughout the site. If not managed, dust generation associated with these activities also has the potential to impact on the Oz Group berry packaging and processing facility on Englands Road which is located approximately 200m from the ancillary facility (refer to Figure 11). Other sensitive air quality receivers including large-scale retail shops, businesses and light industry are also present in the vicinity of the ancillary facility with the Isles Drive Mixed Use Centre.

Background monitoring using dust depositional gauges (DDGs) has been undertaken during the pre-construction phase of the project. DDG data has been recorded by TfNSW since September 2021 (refer to Figure 11), to allow discussion and comparison between pre-construction and construction monitoring results. A continuous particulate dust monitor has also been installed adjacent to the Oz Group Blueberry Facility to monitor potential dust impacts to agricultural production and processing.

The closest monitoring location to Ancillary Facility 1C is DDG2, which includes both a DDG and continuous particulate monitor (shown in Figure 11). DDG2 will continue to be monitored during site establishment works in accordance with as part of the Air Quality Monitoring Program to assess variances from the baseline data.

Environmental safeguards for air quality will be implemented in accordance with the Construction Air Quality Management Plan (CAQMP). Most of the recommended measures are routinely employed as

standard practice on construction sites. With environmental safeguards in place air quality is anticipated to have a low impact.

5.14 WASTE

Resources used for site establishment works would largely be made up of construction materials (concrete, asphalt, steel, fuel etc), water and power. During the establishment of the Ancillary Facility 1C waste avoidance will be closely monitored to ensure material quantities are appropriate, adequate storage areas are available onsite, and recycling and waste bins are available and managed.

Where reasonable and feasible, wastewater captured within the construction footprint will be prioritised for reuse as construction water or dust suppression.

Waste minimisation environmental safeguards will be implemented in accordance with the Construction Waste Management Plan (CWMP).

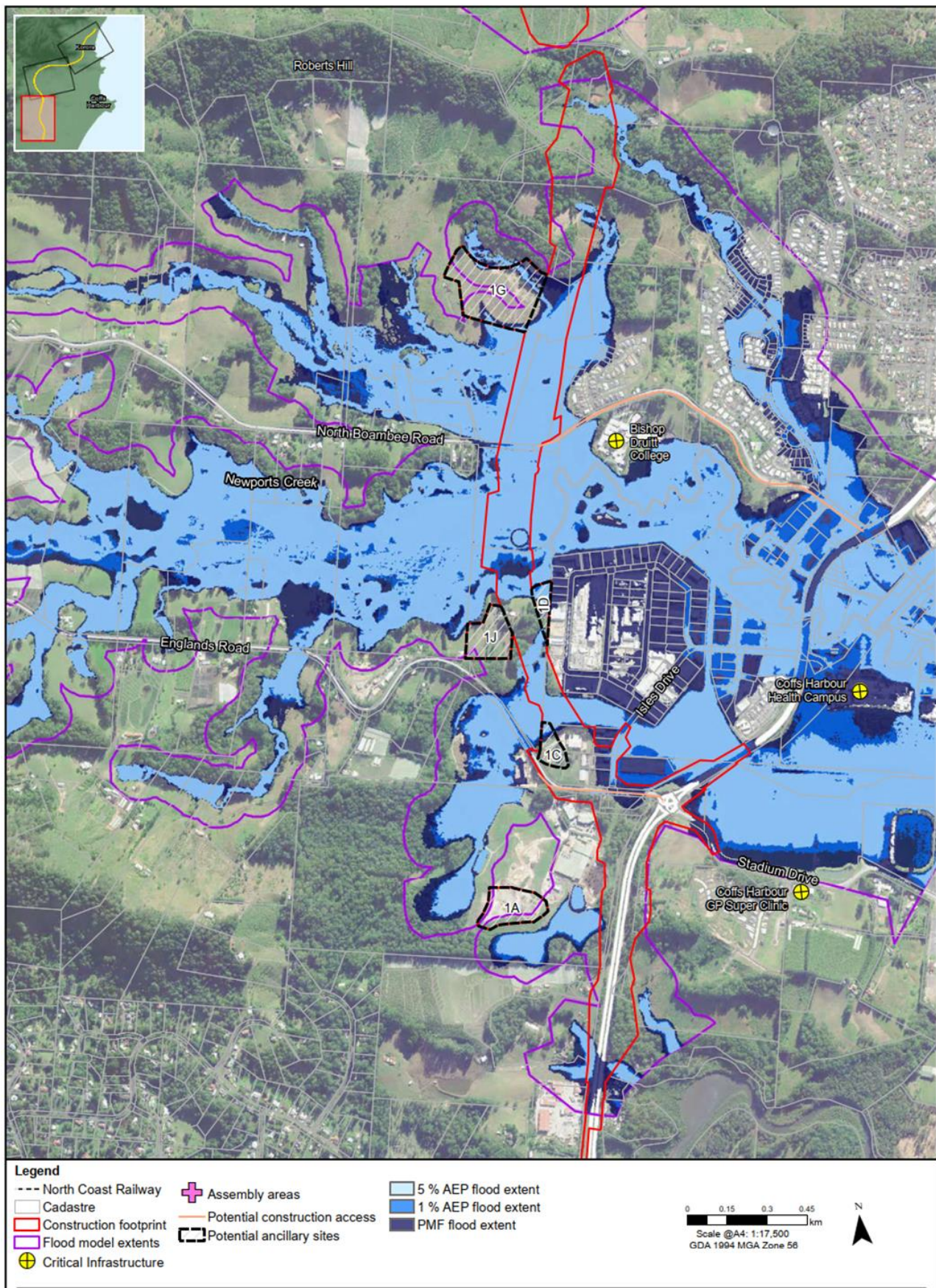


FIGURE 9 PEAK FLOOD INUNDATION (SOURCE: FIGURE C1 AMENDMENT REPORT – APPENDIX H)



-  Approved Construction Boundary – EIS (ARUP, 19/12/2019 as defined in the MCoA)
-  Ancillary Facility 1C
-  Contamination Investigation APO

1:1,700
0 0.01 0.03 0.05 mi
0 0.02 0.04 0.09 km

Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community, Esri Community Maps Contributors, Spatial Services, Geoscape, Esri, HERE, Garmin, Foursquare, METI/NASA,

FIGURE 10 KNOWN AREAS OF CONTAMINATION



-  Approved Construction Boundary – EIS
(ARUP, 19/12/2019 as defined in the MCoA)
-  Ancillary Facility 1C
-  Dust Depositional Gauge
-  Continuous Particulates Monitor

1:2,300
0 105 210 420 ft
0 30 60 120 m
Esri Community Maps Contributors, Geoscape, Esri, HERE, Garmin, Foursquare, METI/NASA, USGS, Esri, Geoscience Australia, NASA, NGA, USGS

FIGURE 11 DUST DEPOSITIONAL GAUGE AND CONTINUOUS PARTICULATES MONITOR LOCATIONS (DDG2)

FERROVIAL GAMUDA JOINT VENTURE
ASEMP – Site 1C Revision B - Coffs Harbour Bypass

6 ENVIRONMENTAL RISK IDENTIFICATION AND MANAGEMENT

6.1 RISK ASSESSMENT APPROACH

A risk management approach will be used to determine the severity and likelihood of an activity's impact on the environment and to prioritise its significance. This process considers potential regulatory and legal risks as well as taking into consideration the concerns of community and other key stakeholders.

The objectives of the risk assessment are to:

- Identify activities, events or outcomes that have the potential to adversely affect the local, environment and/or human health/property,
- Qualitatively evaluate and categorise each risk item,
- Assess whether risk issues can be managed by environmental protection measures; and
- Qualitatively evaluate residual risk with implementation of measures.

Risk assessments for the project are based on AS/NZS 4360:1999, the Australian standard for risk assessments.

Appendix A contains an initial site establishment risk assessment which includes a list of typical activities associated with the project, related aspects and corresponding risks. Measures to minimise the identified environmental risks are also provided.

This risk assessment will be supplemented with the Environmental Aspects and Impacts Register contained in the CEMP (Appendix A2) and activity specific Environmental Work Method Statement (EWMS). EWMS will include the measures identified in Appendix A, and any additional mitigation measures identified during planning and throughout the works.

6.2 ENVIRONMENTAL WORK METHOD STATEMENTS

EWMS will be progressively prepared for high-risk activities identified through the environmental risk assessment process described above and in Section 4.1.5 of the CEMP.

EWMS will communicate requirements, actions, processes and controls to construction personnel and will include the relevant construction activities on site and incorporate mitigation measures and controls for all relevant environmental aspects.

Site establishment of Ancillary Facility 1C will be undertaken in accordance with relevant EWMS including, but not limited to:

- EWMS 03: Dewatering
- EWMS 04: Clear and Grub
- EWMS 09: Earthworks

6.3 EROSION AND SEDIMENT CONTROL PLAN

A Progressive Erosion and Sediment Control Plan (ESCP) will be prepared for Ancillary Facility 1C site establishment and toolboxed prior to site establishment activities. The Progressive ESCP will contain site-specific details including identifying indicative locations for sediment controls, clean and dirty water flow paths, critical drainage infrastructure, site boundary and compound areas. The Progressive ESCP incorporates the following:

- Location of erosion, sedimentation and water quality control measures proposed to treat stormwater before discharge,
- Layout of the site, protected areas and stockpiling areas;
- Construction period and staging; and

- Information relevant to the preparation of the Progressive ESCP is obtained from Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom 2006) (the Blue Book) and Volume 2D Main Roads Construction (DECCW 2008) and site-specific soil data.

Environmental personnel in consultation with the Project's Soil Conservationist, Foreman and Environment and Sustainability Manager, would prepare and update the Progressive ESCP to ensure it remains fit for purpose based on the site activities.

Additionally, the soil and water quality environmental safeguards within the CSWMP will be implemented for the duration of the site establishment works.

6.4 TRAFFIC CONTROL PLANS

Where required, TCPs will be prepared in accordance with the principles and measures outlined in the Traffic Management and Safety Plan (TMSP), AS1742.3-2009 and RMS' Traffic Control at Worksites Manual Version 4. TCPs and ROL's required during ancillary facility establishment may be required to facilitate the delivery of oversized items (such as site sheds). A Traffic Control Plan (TCP) is a diagram identifying signs and devices in specific locations to allow the public and workers at the work site to be safely separated from traffic, while minimising disruption and risk to road users. A TCP generally details:

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

A TCP can only be prepared by a person who has undertaken and passed TCWS training course and holds a current certification (Orange card). Pedestrian and cyclist access will be maintained however some detours may be required to improve safety and amenity of pedestrians and cyclist or the accessibility of trucks entering and exiting ancillary facilities. Alternate routes will aim to minimise inconvenience to pedestrians and cyclists and will be clearly signed and marked.

Additionally, the traffic and transport environmental safeguards within CTMP will be implemented for the duration of the site establishment works.

7 TRAINING, AWARENESS AND COMPETENCE

To ensure that this ASEMP is effectively implemented, each level of management is responsible for ensuring that all personnel reporting to them are aware of the requirements of this ASEMP. The FGJV Environment and Sustainability Manager will coordinate the environmental training in conjunction with other training and development activities.

7.1 ENVIRONMENTAL INDUCTION

All personnel (including sub-contractors) are required to attend a compulsory site induction, which includes a cultural and environmental component. This is done to ensure all personnel involved in the project are aware of the project culture, requirements of the ASEMP and CEMP, and to ensure the implementation of REMMs, MCoA and other relevant project requirements.

Short-term visitors undertaking site undertaking inspections / entering the site (such as regulators) will be required to undertake a visitors induction and be accompanied by inducted personnel at all times. Temporary visitors to site for purposes such as deliveries will be required to be always accompanied by inducted personnel.

The FGJV Environment and Sustainability Manager (or delegate) will conduct the environmental component of the site inductions.

Refer to Section 5.1 of the CEMP for further detail on elements of the environmental induction.

7.2 EWMS TOOLBOX

All employees (including subcontractors) will attend a compulsory toolbox on the EWMSs applicable to site establishment prior to works commencing on site. This will include the following:

- Key environmental issues, mitigation and management measure and working in or near environmentally sensitive areas,
- Individual authorities and responsibilities,
- Potential consequences of departures from rules and responsibilities,
- Approval conditions and licences and permit requirements,
- Environmental emergency procedure and response,
- Due diligence and duty of care requirements,
- Risk activities and associated mitigation and management measures,
- Location of sensitive receivers,
- Incident response and reporting requirements,
- Unexpected Finds Procedure: Fauna, Heritage and Contamination Management; and
- Protocols for interaction with the community and stakeholders.

Toolbox talks will also be tailored to specific environmental issues relevant to upcoming works

Records of all training activities will be maintained. Records will include the name and role of the attendee with reference to the document-controlled version of the material presented. Ongoing training and awareness will enable Project personnel to competently perform their duties and meet environmental obligations.

Refer to Section 5.2 of the CEMP for further detail on toolbox talks.

7.3 DAILY PRE-START MEETINGS

The Site Supervisor will deliver a daily pre-start meeting with the site workforce before the commencement of work each day. It will target new information beyond that included in the induction, high risk issues specific to the day's activities and emerging/recurring issues. It will cover environmental protection practices, no-go zones, environmental risks and hazards specific to the day's activities. Typically, the daily pre-start meetings would take around 10-15 minutes to deliver.

Refer to Section 5.4 of the CEMP for further detail on daily pre-start meetings.

7.4 ENVIRONMENTAL MONITORING

Monitoring will be undertaken in accordance with the Construction Monitoring Programs prepared under CoA C13 (detailed in Table 11) to validate the impacts predicted for the establishment of the Ancillary Facility 1C and to measure the effectiveness of environmental controls and implementation of this ASEMP.

TABLE 11 ENVIRONMENTAL MONITORING PROGRAM

Monitoring Program	Reporting	Responsibility
Noise and Vibration Monitoring Program	Six-monthly Monitoring Report EPL Monitoring Reports	Environmental personnel
Surface and Groundwater Quality Monitoring Program	Annual Monitoring Report EPL Monitoring Reports	TfNSW and environmental personnel
Air Quality Monitoring Program	Six-monthly Monitoring Report EPL Monitoring Reports	Environmental personnel
Biodiversity Monitoring Program	Survey and Monitoring Reports	Project Ecologist and environmental personnel

Environmental inspections will also be undertaken to monitor performance as summarised in Table 12 Environmental inspection program.

TABLE 12 ENVIRONMENTAL INSPECTION PROGRAM

Item	Frequency	Reporting	Responsibility
FGJV environmental site inspections	Weekly	Completed inspection checklist	Environment personnel
FGJV Pre and post rainfall inspections	Prior to and following rainfall events >20mm	Completed inspection checklist	Environment personnel
Environmental Representative site inspections	Fortnightly	Monthly Environmental Representative Report	Environmental Representative
Acoustics Advisor site inspections	Monthly	Monthly Noise and Vibration Report	Acoustics Advisor
Pre-construction and post-construction dilapidation surveys	Prior to and post construction	Condition Survey Reports	Environment & Sustainability Manager
Pre-clearing inspection	Prior to any vegetation clearance / pruning	Pre-clearing permit	Project Ecologist
Road dilapidation inspection	Prior to the use of the local road by heavy / oversized vehicles	Road Dilapidation Surveys	Environment & Sustainability Manager
Visual surveillance	Continual during activities with high potential to produce dust and during prolonged dry or windy conditions	Daily pre-start	Site supervisor
Unexpected potential heritage discovery	Upon discovery of potential heritage item	As required by Unexpected Heritage Finds Procedure	Environment & Sustainability Manager

7.4.1 WEEKLY AND RAINFALL SITE INSPECTIONS

Regular monitoring and inspections will be undertaken in the lead up to, during establishment of Ancillary Facility 1C. Monitoring and inspections form a fundamental aspect of ongoing project risk analysis and will include, but not be limited to:

- Weekly site inspections are to be undertaken in all project areas with FGJV Environment and Sustainability staff and area Supervisor/Foreman in attendance, action lists are to be produced to address any maintenance issues or additional controls required and compliance with implementation of EWMS and PESCPs reviewed; and
- Pre rainfall and post rainfall inspections are to be undertaken to evaluate the effectiveness of erosion and sediment controls measures. Pre rainfall inspections are to be triggered by a forecast of 50% probability of 10mm or more, and post rainfall inspections are required following a rain event of 10mm or more within the project area in a 24-hour period. Action lists are to be produced to address any maintenance requirements or additional controls required.

All environmental inspection reports are to be closed out in the agreed timeframes, actions are to be recorded in an action register and provided to TfNSW upon request. Copies of all reports are to be kept by FGJV with the project records.

If any maintenance and/or deficiencies in environmental controls or in the standard of environmental performance are observed, they will be recorded on the checklist form. Records will also include details of any maintenance required, the nature of the deficiency, any actions required and an implementation priority. Actions will be closed out in accordance with the identified priority and evidence of close out would be kept on file.

7.4.2 ENVIRONMENTAL REPRESENTATIVE AND TfNSW INSPECTIONS

The Environmental Representative and TfNSW staff will undertake fortnightly inspections of works sites, and in particular critical activities throughout construction of the project. Inspections by the Environmental Representative and TfNSW project staff would typically occur on a weekly or fortnightly basis depending on the complexity and anticipated risks associated with the stage of construction.

A member of the FGJV Environment team will participate in all Environmental Representative TfNSW inspections, and records maintained. Deficiencies and required actions will be analysed and prioritised at the completion of the inspection and timeframes for implementation of corrective actions agreed.

7.4.3 VEGETATION PRE-CLEARING INSPECTIONS

Vegetation clearing would be undertaken in accordance with Clearing Procedures in the CBMP and the Clear and Grub EWMS.

Prior to vegetation clearing, consultation will also be undertaken with Council, community and Landcare groups and government agencies to determine:

- (a) the use of root balls; and/or
- (b) the collection of plant material and seeds from lowland rainforest vegetation impacted by the CSSI, that could be used by others in habitat enhancement and rehabilitation work, before pursuing other disposal options.

8 REVIEW AND IMPROVEMENT

8.1 CONTINUOUS IMPROVEMENT

Continual improvement is achieved through constant measurement and evaluation, audit and review of the effectiveness of this ASEMP. This will be through regular compliance activities, such as inspections, observations and monitoring will be undertaken throughout the site establishment of the ancillary facilities.

An internal auditing will be undertaken within the first three months, then six monthly for the duration of the project. The purpose of auditing is to verify compliance with:

- This ASEMP,
- Approval requirements (MCoA, REMMs),
- Any relevant legal and other requirements (eg licenses, permits, regulations, TfNSW contract documentation); and
- Implementation of EWMS and ESCPs

Subcontractors' works would also be monitored through weekly inspections, observations, monitoring and audits as appropriate.

As detailed in Section 7.4, environmental controls will be inspected weekly, and before and after rain events to ensure their ongoing suitability and effectiveness. Inspections will be recorded on environmental inspection checklists and communicated to the wider team via toolboxes to discuss positive or negative trends occurring onsite.

8.2 ASEMP UPDATE AND AMENDMENT

This will help identify specific opportunities for improvements in the environmental management system and/or this ASEMP. This plan will also be updated:

- When proposed changes as to the use or scope of the Ancillary Facility 1C are required,
- To take into account changes to the environment or generally accepted environmental management practices, new risks to the environment, any hazardous substances, contamination or changes in law,
- Where requested or required by DPE or any other Authority; and
- In response to internal or external audits or quarterly management reviews.

Revisions to the ASEMP are to be approved by the Department unless approval is granted from the Department, for ER approval for relatively minor changes. A register is to be maintained detailing the new version number and the date of issue.

Any major changes to this ASEMP must be approved by DPE.

8.3 CONSULTATION AND DOCUMENT APPROVAL

This ASEMP will be prepared in consultation with City of Coffs Harbour and NSW EPA in accordance with MCoA A15, see Appendix C. This plan has been prepared in coordination with the Project Director and Environment and Sustainability Manager prior to submission to DPE. Submission to DPE is required no later than one month prior to commencement of works or as otherwise agreed.

A suitably qualified and experienced Acoustics Advisor (AA), who is independent of the design and construction personnel, has been nominated and engaged for the duration of the works. The AA will review the noise assessment (Appendix B) and consider minor amendments made to the ASEMP as relates to noise and vibration impacts.

The Environmental Representative (ER) is approved by the Planning Secretary and engaged TfNSW. The ER was not involved in development of the Planning Approval documents (including the EIS) and is independent of the design and construction personnel. The roles and responsibilities of the ER as detailed in MCoA A25, includes the review and approval of the ASEMP prior to submission to DPE for review and approval.

8.4 COMMUNITY ENGAGEMENT

Prior to establishment of the Ancillary Facility 1C site, the community relations team will engage with residential and commercial properties that adjoin or are adjacent to the ancillary facility. Engagement methods will include:

- Door knocking residents and commercial properties
- Letter box drops, and
- Community updates for any resident / business within 200m of the Ancillary Facility 1C site location.

Any comments/feedback regarding boundary screening and noise walls will be considered by FGJV. During the site establishment phase, any comments, feedback or complaints relating to noise, air quality and other amenity issues will be addressed in accordance with the Communication Strategy and Complaints Management System.

In accordance with MCoA B7, a 24-hour toll-free telephone number for the registration of complaints and enquires about the CSSI has been established and will be included on community notifications / letter box drops. Signs with site contact details including the telephone number, postal address and email address for the Project will be placed on site boundary fencing in accordance with MCoA B8.

9 INCIDENT REPORTING

In the event of an environmental incident, the TfNSW Environmental Incident Procedure (Appendix A5 of the CEMP) will be implemented.

All incidents will be classified, notified and reported in accordance with the TfNSW Environmental Incident Procedure and will be classified by the FGJV Environment and Sustainability Manager (or delegate) in consultation with the TfNSW Environment Manager.

In the event of a pollution incident on or around the site, the Pollution Incident Response Management Plan (PIRMP) will be implemented, and the relevant authorities notified, as determined by the Environment and Sustainability Manager (or delegate). The circumstances where this will take place include:

- it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or
- it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000 (or such other amount as is prescribed by the regulations).

In accordance with MCoA A39 and A40, FGJV will also notify the Secretary immediately upon becoming aware of an incident that causes or threatens to cause material harm and/or a non-compliance. Subsequent written notification and an incident report are required seven days after the Proponent became aware of the incident and 30 days after the date on which the incident occurred, respectively.

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

Refer to Section 7 of the CEMP for further detail on incident management and reporting.

APPENDICES



APPENDIX A ENVIRONMENTAL RISK REGISTER

The risk assessment criteria, consequence of the potential impact and likelihood of the potential impact as identified below has been used to undertake the risk assessment.

The activity-specific site mitigation and management measures outlined have been developed to comply with the requirements from TfNSW, MCoA and REMMs. Management measures may include physical controls, procedures, forms, checklists, monitoring requirements, permits, etc.

An ongoing program for analysis of environmental risks will be documented through the following:

- Environmental risk register (reviewed following incidents and non-compliances)
- Environmental inspections and monitoring.

Likelihood	Extreme 5	Major 4	Consequence Moderate 3	Minor 2	Insignificant 1
Almost Certain 5	Extreme (25)	Extreme (20)	Extreme (15)	High (10)	Moderate (5)
Likely 4	Extreme (20)	Extreme (16)	High (12)	Moderate (8)	Low (4)
Possible 3	Extreme (15)	High (12)	Moderate (9)	Moderate (6)	Low (3)
Unlikely 2	High (10)	Moderate (8)	Moderate (6)	Low (4)	Low (2)
Rare 1	Moderate (5)	Low (4)	Low (3)	Low (2)	Very low (1)

Level	Descriptor	Definition
1	Rare	Unlikely to occur during a lifetime or very unlikely to occur
2	Unlikely	Could occur about once during a lifetime or more likely not to occur than to occur
3	Possible	Could occur more than once during Project lifetime or more likely not to occur than to occur
4	Likely	Will probably occur in most circumstances
5	Almost Certain	Is expected to occur in most circumstances

Level	Descriptor	Definition
1	Insignificant	• Very low environmental and health impacts confined to a small area within the Project area; Prompt (typically within a shift) clean-up; • Negligible loss of human, social, financial or built capital/wellbeing; • Negligible media coverage; • First aid injury.
2	Minor	• Low environmental and health impacts confined within the Project area; • Short-term (typically within a week) clean-up; • Small but noticeable loss of human, social, financial or built capital/wellbeing, can be easily rehabilitated; • Regulation breaches without fine or litigation; • Negative local media coverage; • Complaint from community; • Medical treatment injury/ occupational health effects/ Restricted Work Injury.
3	Moderate	• Reversible offsite environmental health impacts, requiring short-term clean-up (weeks); • Onsite medium term (months) clean-up; • Moderate, noticeable loss of financial or built capital/wellbeing; • Regulation breaches resulting in fine or prosecution; • Negative media coverage at local/regional level over more than one day; • Lost time/disabling injury/ occupational health effects/multiple medical treatments.
4	Major	• Major, offsite, environmental and health impacts requiring medium-term clean-up (months); Onsite impact requiring significant clean-up effort (years); • Substantial loss of financial or built capital/wellbeing, will attract public concern; • Major litigation at operation level; • Negative national media coverage; and • Fatality or permanent incapacity/health effects.
5	Extreme	• Prolonged or severe, offsite or regional environmental and health impacts requiring long-term clean-up (years) with irreversible residual damage; • Extreme permanent loss of, financial or built capital/ wellbeing, with anticipated major public outrage; • Major litigation or prosecution at parent company level; • Loss of environmental licence; • Fatalities or permanent injuries from single incident.

Environmental Issue	Construction Activity	Potential Impact	Risk Level Prior to Mitigation	Mitigation Measures	Risk Level Following Mitigation
Traffic and Transport	• Spoil transport, deliveries, general plant operation on public roads	• Access to existing properties is restricted • Use of local roads that have not been approved for use • Damage to the existing road condition	Moderate (8)	• REMM TT07: Existing accesses to properties will be maintained during construction. Where this is not feasible or reasonable, E3 temporary alternative access arrangements will be provided following consultation with the affected property owners and business operators. • REMM TT08: Pre-construction and post-construction road condition reports for local roads will be prepared. Any damage resulting from construction (not normal wear and tear) will be repaired unless alternative arrangements are made with CHCC. Copies of road condition reports will be provided to CHCC. • MCoA E91: Before any local road is used by a heavy vehicle for the Construction of the CSSI, a Road Dilapidation Report must be prepared for the road. A copy of the Road Dilapidation Report must be provided to Council within three weeks of completion of the survey and at least two weeks before the road is used by heavy vehicles associated with the construction of the CSSI. • MCoA E87: Local roads proposed to be used by heavy vehicles to directly access the construction boundary that are not shown in Figure 4.5-1 Response to Submissions Report must be approved by the Planning Secretary and included in the Traffic and Transport Management Sub-plan • Temporary on-site parking areas will be available to minimise on-street parking impacts on surrounding public local roads. Construction traffic movements are expected to be contained within the construction footprint except for deliveries to site, disposal of waste and staff travel • Isolate work areas from general traffic through the implementation of appropriate traffic and access controls. • Construction vehicles (including staff vehicles) associated with the CSSI must be managed to: minimise parking on public roads; minimise idling and queuing on public roads; and ensure spoil haulage vehicles adhere to the nominated haulage routes. • Manage local road closures and property access. This will be undertaken in consultation with Roads and Maritime, local councils and property owners likely to be impacted. • Identify potential road user delays during the planning and consultation phases and develop strategies to reduce identified delays for example utilising more efficient plant and equipment, and applying different design solutions.	Low (4)

Environmental Issue	Construction Activity	Potential Impact	Risk Level Prior to Mitigation	Mitigation Measures	Risk Level Following Mitigation
				Schedule construction-related transport movements to avoid peak traffic periods and minimise project-related congestion, where possible.	
Noise and Vibration	- General construction activities involving the use of plant - Works conducted out of hours e.g.: Deliveries, emergency work	- Noise causing a nuisance to the public - Exceedance in NML due to highly noise intensive work	Moderate (8)	REMM NV04: Where vibration generating activities will be carried out within minimum working distances for cosmetic damage, vibration monitoring will be carried out. Where monitoring indicates cosmetic damage criteria are exceeded, alternative low-vibration work practices will be investigated and implemented. REMM NV06: An Out of Hours Work Procedure will be included as part of the NVMP to manage any variations to the standard construction hours. The procedure will follow the approach in Roads and Maritime's Construction Noise and Vibration Guideline (Roads and Maritime Services 2016a) and include, but not be limited to: - Scheduling of noise intensive or high noise impact work to evening periods where feasible - Use of alternative plant and equipment and/or construction techniques to minimise noise - Notification and consultation requirements including preparation of a six-month 'look ahead' program for likely out of hours work - Use of temporary noise barriers - Acoustic sheds will be included around tunnel portals to shield noise from within the tunnel during evening and night periods - Respite periods - Representative noise monitoring - Offers of reasonable and temporary alternative accommodation or an act of good will - Use of negotiated agreements. REMM NV08: Ancillary facilities will be designed to ensure that primary noise sources are at a maximum distance from residences (where reasonable and feasible), with solid structures (sheds, containers, etc.) placed between residences and noise sources (and as close to the noise sources as is practical). REMM NV09: Management of construction related traffic noise will include the following considerations: - Scheduling of vehicle movements during less sensitive time periods where possible - Training/inductions to address driver behaviour and avoidance of the use of engine compression brakes	Low (4)

Environmental Issue	Construction Activity	Potential Impact	Risk Level Prior to Mitigation	Mitigation Measures	Risk Level Following Mitigation
				– Vehicle maintenance. • MCoA 38: Except as permitted by an EPL, highly noise intensive work that result in an exceedance of the applicable NML at the same receiver must only be undertaken: (a) between the hours of 8:00am to 6:00pm Monday to Friday; (b) between the hours of 8:00am to 1:00pm Saturday; and (c) if continuously, then not exceeding three (3) hours, with a minimum cessation of work of not less than one (1) hour. For the purposes of this condition, 'continuously' includes any period during which there is less than one (1) hour between ceasing and recommencing any of the work. • Plant and equipment must be maintained, operated in an efficient manner, and fitted with noise suppression devices in accordance with manufacturers specifications • Where possible, conduct noisy works during the middle of the day when noise sensitivity is not as high	
Biodiversity	• Earthworks and excavation • Vegetation clearance	• Removal of threatened flora or fauna habitat	High (10)	• REMM FF03: Native vegetation and fauna habitat removal would be minimised through detailed design where reasonable and feasible. Particular focus would be given to minimising the removal of: – Hollow bearing trees – Native vegetation in riparian zones – Native vegetation from known fauna connectivity corridors and near proposed fauna crossing structures. • REMM FF08: Pre-clearing surveys would be undertaken in accordance with Guide 1: Pre-clearing process of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA 2011a). • REMM FF09: The limits of clearing within the construction footprint would be delineated using appropriate signage and barriers, identified on site construction drawings and communicated to construction staff during induction. Vegetation and habitat features to be retained, such as hollow-bearing trees, would be clearly identified and protected by suitable fencing, signage and/or markings. • REMM FF10: Vegetation clearing would be undertaken in accordance with Guide 4: Clearing of vegetation and removal of bushrock of the Biodiversity	Low (4)

Environmental Issue	Construction Activity	Potential Impact	Risk Level Prior to Mitigation	Mitigation Measures	Risk Level Following Mitigation
				Guidelines: Protecting and managing biodiversity on RTA projects (RTA 2011a). • REMM FF11: Native vegetation consisting of suitable species from locally indigenous vegetation communities of the study area would be progressively re-established in accordance with Guide 3: Reestablishment of native vegetation of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA 2011a). • REMM FF12: An unexpected species find procedure would be prepared and implemented in accordance with Guide 1: Pre-clearing process of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA 2011a). • REMM FF14: Threatened species habitat will not be cleared for the purposes of ancillary facilities. These areas will be identified and limits of clearing delineated before construction in accordance with FF09 • REMM FF18: Exclusion zones would be set up at the limit of clearing in accordance with Guide 2: Exclusion zones of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA 2011). • REMM FF19: Any fauna encountered during construction would be managed in accordance with Guide 9: Fauna handling of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA 2011). • REMM FF20: A native stingless bee rescue protocol would be developed and implemented to guide relocation of any native bee hives within the construction footprint. • REMM FF21: Biosecurity risk and weed species would be managed in accordance with Guide 6: Weed management of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA 2011) and Guide 7: Pathogen Management (RTA 2011). Specific protocols would be prepared and implemented to manage, Chytrid fungus, Phytophthora and Myrtle Rust.	
Urban design, landscape and visual amenity	• Construction of ancillary facilities	• Construction visual impacts of ancillary facilities	High (12)	• REMM UD03: Temporary site lighting will be installed and operated in accordance with AS4282:1997 Control of the Obtrusive Effect of Outdoor Lighting (Standards Australia 1997). • REMM UD04: Project work sites, including construction areas and supporting facilities (such as ancillary sites) will be managed to minimise visual impacts,	Low (4)

Environmental Issue	Construction Activity	Potential Impact	Risk Level Prior to Mitigation	Mitigation Measures	Risk Level Following Mitigation
				including appropriate storage of equipment, parking, stockpile screening and arrangements for the storage REMM UD05: Boundary fencing that incorporates screening will be installed around all ancillary sites that are adjacent to residential areas for the duration of site establishment and construction. The boundary fencing (and screening) will be designed to minimise visual impacts on nearby sensitive receivers and removal of rubbish and waste materials.	
Land use and property	• Connection of utilities	• Utility relocation impacts (hitting or finding an unexpected utility)	High (10)	REMM LUP04: The following strategy for managing utilities will be implemented prior to construction in consultation with the relevant utility providers: – Further detailed utility investigations (revised ‘Dial before you Dig’ queries and/or potholing will be carried to confirm location of buried services) – Detailed utility design be undertaken in accordance with the relevant utility providers requirements – Relocation or protection work will be undertaken in a manner that minimises environmental impacts and addresses the relevant utility service providers requirements and construction methods.	Low (4)
Agriculture	• Construction of ancillary facilities	• Dust impacts • Wind and microclimate impacts	High (10)	REMM AG07: An Automatic Weather Station (AWS) will be established at a representative location to confirm the outcomes of the wind flow and microclimate investigations. The AWS will be established in accordance with the Bureau of Meteorology’s Observation Specification No. 2013.1: Guidelines for siting and exposure of meteorological instruments and observing facilities.	Low (4)
Socio-economic	• Construction of ancillary facilities	• Impacts to schools and residents (including those related to property, amenity, and access impacts)	High (12)	REMM SE01: Consultation will be undertaken with potentially affected residences prior to the commencement of and during work in accordance with Community Liaison Implementation Plan. The Plan will be based on the draft Community consultation framework and will be implemented prior to construction. The Plan will provide specific information in relation to community involvement during construction and will include, but not be limited to: – A map of impacted properties – A register of potential construction impacts and timings – A risk assessment and mitigation plan to minimise impacts on stakeholders – A procedure for managing and responding to enquiries and complaints – Procedures for notifying the community of upcoming work and impacts	Low (4)

Environmental Issue	Construction Activity	Potential Impact	Risk Level Prior to Mitigation	Mitigation Measures	Risk Level Following Mitigation
				Procedures for communicating the details of design and construction.	
Aboriginal cultural heritage	- Earthworks and excavation - Vegetation clearance	Impacts on unexpected finds of Aboriginal objects	High (12)	REMM AH06: Roads and Maritime's Unexpected Heritage Items: Heritage Procedure 02 (Roads and Maritime 2015e) will be used in the event of uncovering an unexpected archaeological find during construction. REMM AH07: In the event that construction activity reveals possible human skeletal material (remains), all work is to halt at that location immediately and the steps outlined in the Roads and Maritime's Unexpected Heritage Items: Heritage Procedure 02 (Roads and Maritime 2015e) will be followed. Identified knowledge holders will be notified within 24 hours of any confirmed discovery of Aboriginal skeletal remains.	Low (4)
Non-Aboriginal cultural heritage	- Earthworks and excavation - Vegetation clearance	Impacts on unexpected finds of non-Aboriginal objects	High (12)	REMM NAH06: Should any heritage items, archaeological remains or potential relics of non-Aboriginal origin be encountered, then construction work that might affect or damage the material will cease and notification provided in accordance with the Roads and Maritime's Unexpected Heritage Items: Heritage Procedure 02 (Roads and Maritime 2015e). Work will only re-start once the requirements of that Procedure have been satisfied.	Low (4)
Flooding and hydrology	- Earthworks and excavation - Vegetation clearance - Spoil transport, deliveries, general plant operation on public roads	Impacts from flooding of the site	High (12)	Site compounds, stockpiling and plant machinery should be placed outside of the flood hazard area.	Low (4)
Soils and contamination	- Earthworks and excavation - Vegetation clearance	Impacts from soil and erosion sedimentation	High (12)	- A primary Erosion and Sediment Control Plan (ESCP) will be prepared and implemented. The plan will identify detailed measures and controls to be applied to minimise erosion and sediment control risks including: - Runoff, diversion and drainage points - Sediment basins and sumps - Scour protection - Stabilising disturbed areas as soon as possible, check dams, fencing and swales - The need for site-specific ESCP to address staged implementation arrangements. REMM SC06: A suitably qualified and experienced soil conservationist will be engaged during construction of project to advise and review the implementation and management of erosion and sediment controls.	Low (4)

Environmental Issue	Construction Activity	Potential Impact	Risk Level Prior to Mitigation	Mitigation Measures	Risk Level Following Mitigation
				• REMM SC07: Batters will be designed and constructed to minimise risk or exposure, instability and erosion, and to support long term, ongoing best practice management, in accordance with the Guideline for Batter Stabilisation Using Vegetation (Roads and Maritime 2015b). • Filtering of sediment prior to water entering any pit and management of stormwater discharge through any pit (TfNSW QA specification G38 Soil and Water Management) • Locate stockpiles outside of the tree protection zone of trees or native vegetation identified for retention. Delineate the tree protection zone in accordance with AS 4970 (TfNSW QA specification G38 Soil and Water Management) • Keep stockpile heights to no greater than 2 m, unless otherwise approved by the Principal, and slopes to no steeper than 2:1 (TfNSW QA specification G38 Soil and Water Management) • Cover, or otherwise protect from erosion, stockpiles that will be in place for more than 20 days as well as any stockpiles that are susceptible to wind or water erosion, within 10 days of forming each stockpile (TfNSW QA specification G38 Soil and Water Management) • Keep topsoil that is not contaminated by noxious weeds in stockpiles for later spreading on fill batters and other areas. Other material may also be stockpiled but kept separated from the topsoil stockpiles (TfNSW QA specification G38 Soil and Water Management) • Implement measures to prevent the growth of weeds in topsoil stockpiles (TfNSW QA specification G38 Soil and Water Management) • Store chemicals, fuel and lubricants in suitably located and bunded areas to minimise the impact of any spillage or contamination on the Site and adjoining areas. Do not locate these storage areas within 50 m of any aquatic habitat, flood prone areas, or on slopes steeper than 1:10. (TfNSW specification guide NG36) • Do not refuel or maintain plant and equipment, mix cutting oil with bitumen, or carry out any other activity which may result in spillage of a chemical, fuel or lubricant at any location which drains directly to waters or environmentally sensitive areas, without the appropriate temporary bunding being provided. Do not leave refuelling operations unattended. (TfNSW specification guide NG36)	

Environmental Issue	Construction Activity	Potential Impact	Risk Level Prior to Mitigation	Mitigation Measures	Risk Level Following Mitigation
				- Routine maintenance of machinery, pumps and other equipment to prevent and/or minimise leaks (TfNSW specification guide NG36) - Keep adequate quantities of suitable material to counteract spillage readily available. Clean up all chemical spills immediately. If spills result in an environmental incident, report the incident. (TfNSW specification guide NG36)	
	Earthworks and excavation	Disturbance and migration of known contamination	High (12)	MCoA E78: Prior to the commencement of construction that would result in the disturbance of potential or contaminated land and/or soil, a Site Contamination Report must be prepared and submitted to the Planning Secretary for Information. The report must be consistent with Contaminated Land Management Act 1997 (NSW) and prepared by a suitably qualified and experienced person. Nothing in this condition prevents the Proponent from preparing individual Site Contamination Reports for separate sites. Under this condition Panama Disease is not considered to be a contaminant. MCoA E79: The Site Contamination Report must provide details on: (a) the outcomes of Stage 1 and Stage 2 contamination assessments; (b) nature and extent of any existing remediation (such as impervious surface cappings); (c) measures to identify handle and manage potential contaminated soils, materials and groundwater; (d) whether the land is suitable (for the intended final land use) or can be made suitable through remediation and/or (e) potential contamination risks from the CSSI to human health and receiving waterways MCoA E80: Should remediation be required to make land suitable for the final intended land use, a Remediation Action Plan must be prepared and implemented and submitted to the Planning Secretary for information prior to undertaking remediation. The plan must detail how the environmental and human health risks will be managed during the disturbance, remediation and/or removal of contaminated soil or groundwater. MCoA E83: An Unexpected Contaminated Land and Asbestos Finds Procedure must be prepared and submitted to the Planning Secretary before the commencement of work and must be followed should unexpected contaminated land or asbestos (or suspected contaminated land or asbestos)	Moderate (6)

Environmental Issue	Construction Activity	Potential Impact	Risk Level Prior to Mitigation	Mitigation Measures	Risk Level Following Mitigation
				be excavated or otherwise discovered. The requirements of Conditions E79 to E82 must be incorporated into this Procedure. • MCoA E84: The Unexpected Contaminated Land and Asbestos Finds Procedure must be implemented throughout work. • REMM SC02: A Contaminated Land Management Plan will be prepared and implemented as part of the CEMP for any areas of existing contaminated land or to address land contamination likely to be caused by the activity. The plan will be prepared in accordance with relevant requirements of the Guideline for the Management of Contamination (Roads and Maritime Services 2013d). As a minimum the plan will address the following matters: – Control measures to divert surface runoff away from the contaminated land – Capture and manage of any surface runoff contaminated by exposure to the contaminated land – Further investigations required to determine the extent, concentration and type of contamination, as identified in the Phase 2 contamination investigations – Manage the remediation and subsequent validation any certification land, including any certification required – Measures to ensure the safety of site personnel and local communities during construction – Procedures to identify and manage any unexpected contamination finds during construction. • REMM SCO3: If site contamination investigations indicate that construction works will impact contaminant that are present on site in concentrations above the intended land use criteria, then a Remedial Action Plan will be developed, and remediation works carried out in consultation with the EPA and in accordance with the Guideline for the Management of Contamination (Roads and Maritime Services 2013d).	
Surface water quality	• Earthworks and excavation • Vegetation clearance	• Water quality impacts from dewatering during construction • Impacts from tannin leachates	High (12)	• REMM SW03: Any dewatering activities will be undertaken in accordance with the Roads and Maritime Technical Guideline: Environmental Management of Construction Site Dewatering (RTA 2011b), in a manner that prevents pollution of waters. • REMM SW05: Mulch stockpiles and the potential generation of tannin leachates will be managed through the implementation of a Management of Tannins from Vegetation Mulch Procedure. The procedure will be prepared in	Low (4)

Environmental Issue	Construction Activity	Potential Impact	Risk Level Prior to Mitigation	Mitigation Measures	Risk Level Following Mitigation
				accordance with the Environmental Direction for the Management of Tannins from Vegetation Mulch (Roads and Maritime Services 2012). The procedure will include but not be limited to: – Planning and staging vegetation processing activities – Management of temporary mulch stockpiles (less than one week) – Stockpile location and management to minimise the production and release of tannins including use of impermeable bunds and sumps to capture tannin leachate – Monitoring the stockpiles for the production of tannin leachate including post-rainfall inspection requirements – Response(s) to tannin leachate production. • Regular monitoring and inspections will be undertaken in the lead up to, during establishment of Ancillary Facility 1C including : – Weekly site inspections are to be undertaken in all project areas with FGJV Environment and Sustainability staff and area Supervisor/Foreman in attendance, action lists are to be produced to address any maintenance issues or additional controls required and compliance with implementation of EWMS and PESCPs reviewed; and – Pre rainfall and post rainfall inspections are to be undertaken to evaluate the effectiveness of erosion and sediment controls measures	
Groundwater	• Earthworks and excavation • Vegetation clearance	• Impacts from unknown acid sulfate soils • Impacts from construction plant and equipment	High (12)	• REMM GW01: Stockpiles containing PASS or ASS treatment areas will be lined and bunded in accordance with the Guidelines for the Management of Acid Sulfate Materials (RTA, 2005) to prevent leachate contaminating groundwater. • REMM GW10: Sites used for stockpiles, washdown areas, refuelling and chemical storage will be located away from areas of shallow groundwater or appropriately lined and bunded to protect groundwater.	Low (4)
Air quality	• Earthworks and excavation • Plant movements • Weather	• Impacts from construction plant and equipment emissions	High (10)	• REMM AQ3: Where practicable, construction vehicles will be fitted with pollution reduction devices and switched off when not in use. • Regular site inspections will be conducted to monitor potential dust issues. The site inspections required actions and ongoing issues will be recorded and actioned appropriately within agreed timeframes by relevant project personnel.	Low (4)

Environmental Issue	Construction Activity	Potential Impact	Risk Level Prior to Mitigation	Mitigation Measures	Risk Level Following Mitigation
				- Construction activities with the potential to generate dust will be modified or ceased during unfavourable weather conditions to reduce the potential for dust generation. - Measures to reduce potential dust generation, such as the use of water carts, sprinklers, dust screens and surface treatments, will be implemented within project sites as required - Access roads within project sites will be maintained and managed to reduce dust generation. - Storage of materials that have the potential to result in dust generation will be minimised within project sites at all times. - All loaded spoil haulage trucks and other project-related heavy vehicles carrying materials with the potential to result in dust generation will be covered when travelling on the public road network to prevent dust emissions during transport in accordance with relevant road regulations. - Exposed soils will be temporarily stabilised during weather conditions conducive to dust generation and prior to extended periods of inactivity to minimise dust generation as detailed in the ESCP. - Exposed soils will be permanently stabilised as soon as practicable following disturbance to minimise the potential for ongoing dust generation as detailed in the ESCP. - At the commencement of establishment of project ancillary facilities, controls such as rumble grids will be installed at all site exits to prevent deposition of loose material on sealed surfaces outside project sites to reduce potential dust generation	
Waste	- Earthworks and excavation - Vegetation clearance - Pouring of concrete - Utilities investigation and installation	- Impacts from excess construction materials - Impacts from waste contamination - Impacts from wastewater	High (10)	REMM WM02: Spoil would be beneficially reused as part of the project before alternative spoil disposal options are pursued. Any excess spoil would be managed using the following order of priorities: - Review alignment and profile refinements during detailed design - Assess opportunities to reuse excess spoil in works such as landscaping and noise barriers within the construction footprint or in adjacent land (subject to property owner agreement and/or any project approval or POEO Act requirements) - Beneficial reuse within the construction footprint for rehabilitation of ancillary sites used for the project (where it is within the requirements of the project approval)	Low (4)

Environmental Issue	Construction Activity	Potential Impact	Risk Level Prior to Mitigation	Mitigation Measures	Risk Level Following Mitigation
				– Transfer to other nearby Roads and Maritime projects for immediate use, where possible, pending construction of other projects or for use on future projects or routine maintenance – Transfer to a Roads and Maritime approved site for reuse on concurrent private/local government projects (with appropriate approvals as required, eg a section 143 notice under section 143(3A) of the POEO Act) – Disposal at an approved materials recycling or licensed waste disposal facility. • REMM WM03: Prior to construction, suitable areas within the ancillary sites or in other appropriate areas within the construction footprint would be allocated which provide adequate space and access for: – Separated storage of building materials – Separated storage and sorting of construction waste – Removal of construction waste for recycling, reuse or disposal – Separated storage of known previously contaminated materials and contingency for unknown contaminated materials. • REMM WM06: Where reasonable and feasible, water captured within the construction footprint will be prioritised for reuse as construction water or dust suppression.	
Hazard and risk	• Earthworks and excavation • Vegetation clearance • Pouring of concrete • Utilities investigation and installation	• Impacts from inadequate site access • Impacts from hazardous materials storage	Moderate (6)	• REMM HZ02: Consultation with emergency services, including the RFS and Fire and Rescue NSW would be undertaken during construction to ensure emergency access is maintained during and after construction. • REMM HZ04: All fuels, chemicals and other hazardous materials will be stored in a roofed, fire protected and impervious bunded area at least 50 m from waterways, drainage lines, basins, flood-affected areas or slopes above 10%. Bunding design will comply with relevant Australian Standards and should generally be in accordance with guidelines provided in the EPA Authorised Officers Manual. Appropriate on-site signage will be provided to identify the materials stored. • REMM HZ05: Appropriate spill containment equipment will be provided on-site and located at strategic, accessible locations. • The telephone number, postal address and email address will be made on all site boundary fencing at each construction site before commencement of construction. The information will also be provided on the website (MCoA B8).	Low (4)

Environmental Issue	Construction Activity	Potential Impact	Risk Level Prior to Mitigation	Mitigation Measures	Risk Level Following Mitigation
Cumulative impacts	• Earthworks and excavation • Vegetation clearance • Pouring of concrete • Utilities investigation and installation	• Impacts from inadequate consultation with the community	Moderate (6)	• REMM CI01: Where relevant, consultation would be undertaken with proponents of other nearby developments to increase the overall awareness of project timeframes and impacts.	Low (4)

APPENDIX B SITE ESTABLISHMENT NOISE ASSESSMENT

Noise Assessment Report - 1C Site Establishment - Clearing, Day

Date: 06/04/23

Created by: Anna Burke

1. Introduction

This report presents a noise assessment of 1c site establishment - clearing construction activity which is proposed to occur during the day period (RMS CNVG Standard). This report presents the proposed activities, noise prediction results, an assessment against RMS CNVG requirements and details proposed noise management and mitigation measures.

2. Method

NoiseCheck is a 'front-end' 3-D noise prediction platform which adopts a database of predictions that are generated in third party proprietary software which conforms to ISO9613 Acoustics - Attenuation of Sound During Propagation Outdoors - Part 2: General Method of Calculation implemented to ISO/TR 17534-3:2015 requirements. The predictions consider source to receiver distance and height and the noise attenuation provided by ground and air absorption, topography, surrounding buildings and other solid objects and permanent noise barriers (where applicable). The typical height of plant and equipment is 2m. The noise predictions at surrounding single and double storey properties apply at 1.5m at the most affected facade. Predictions for apartment buildings with greater than two storeys apply at the worst affected floor and facade. This assessment presents the total LAeq noise level from all activities.

3. Works description

The work activities that have been assessed are shown in Figure 1. Details of the activities are provided in Table 1. All noise levels referenced are in dBA, Leq,15minutes.

Figure 1. Location of modelled plant and equipment



Table 1. Summary of modelled plant and equipment

Name	Duration	List of equipment	Sound power level	Annoyance penalty	Mitigation	Mitigation reduction	Notes
Clearing	50%	Chainsaw 4-5hp , Chainsaw 4-5hp	114 dBA	0, 0		0 dBA	

4. Results

Standard

Based on the activities detailed above, noise levels above the NMLs have been predicted at several properties. The number of properties which exceed the NML for each land use surrounding the site are provided in the table below.

Table 2. Summary of predicted potential impacts at all surrounding land uses

Land use	Noticeable	Clearly audible	Moderately intrusive	Highly intrusive
	-	-	N, V	N, V
Residential	1	5	0	0
Hospital	1	0	0	0

Figure 2 provides map of all surrounding properties which have predicted noise levels above NML and additional mitigation measures. The details of these properties are also shown in Table 3. All noise levels referenced are in dBA, Leq,15minutes.

Figure 2. Map of predicted potential impacts at surrounding land uses

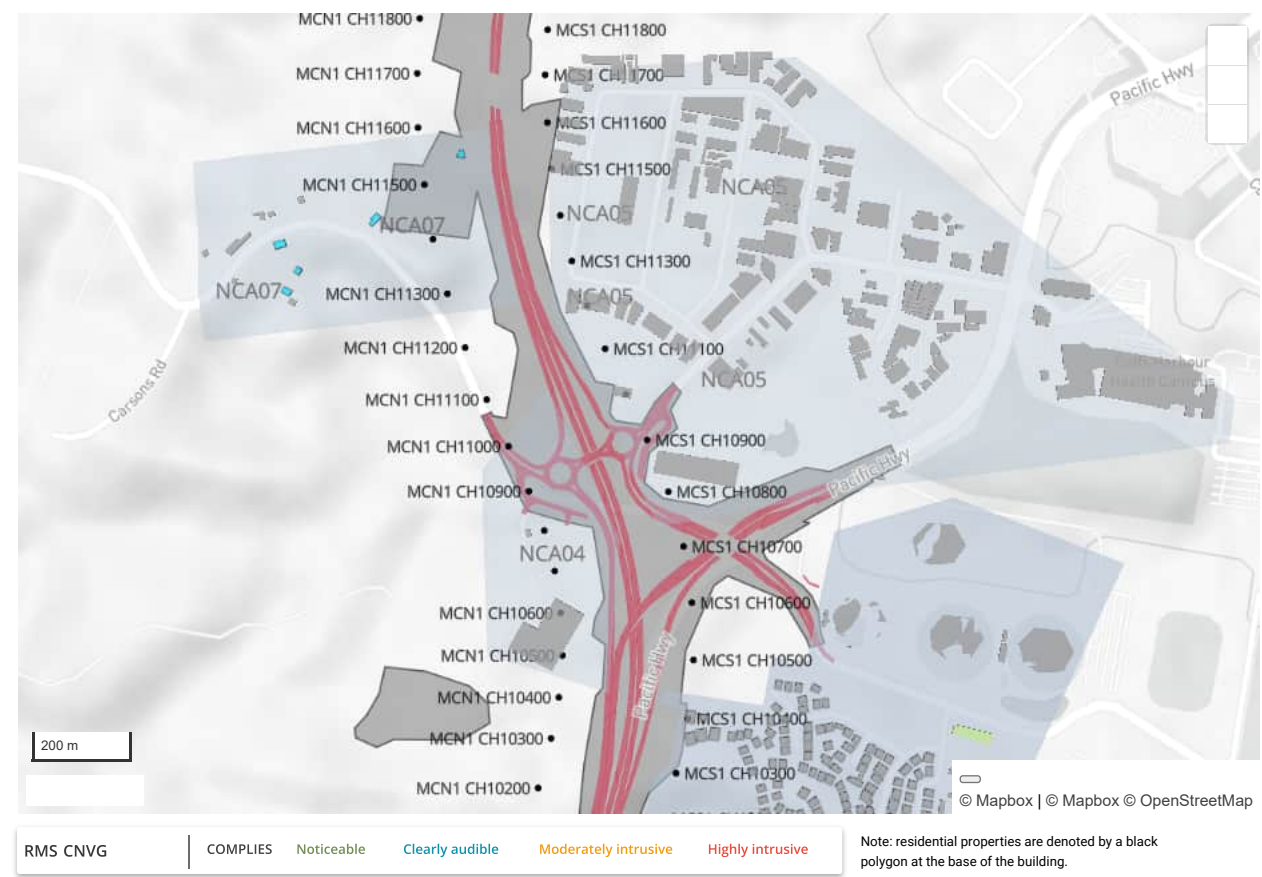


Table 3. Identified properties with predicted noise levels above NML

☒ Noticeable
 ☒ Clearly audible
 ☒ Moderately intrusive
 ☒ Highly intrusive

ID	Land use	Address	NCA	NML	Prediction	NML exceedance	RMS CNVG assessment category	Additional mitigation	Notes
19	Residential	102 Englands Road North Boambee Valley New South Wales 2450	7	45	49	4	Clearly audible	-	
1917	Hospital		3	45	44	-1	Noticeable	-	
1925	Residential	116a Englands Road North Boambee Valley New South Wales 2450	7	45	47	2	Clearly audible	-	
1931	Residential	103 Englands Road North Boambee Valley New South Wales 2450	7	45	48	3	Clearly audible	-	
1930	Residential	103 Englands Road North Boambee Valley New South Wales 2450	7	45	48	3	Clearly audible	-	
2827	Residential	North Boambee Valley East Masterplan Urban Release Area	6	45	41	-4	Noticeable	-	
3312	Residential	100 Englands Road		45	48	3	Clearly audible	-	

Noise Assessment Report - 1C Site Establishment - Earthworks, Day

Date: 06/04/23

Created by: Anna Burke

1. Introduction

This report presents a noise assessment of 1c site establishment - earthworks construction activity which is proposed to occur during the day period (RMS CNVG Standard). This report presents the proposed activities, noise prediction results, an assessment against RMS CNVG requirements and details proposed noise management and mitigation measures.

2. Method

NoiseCheck is a 'front-end' 3-D noise prediction platform which adopts a database of predictions that are generated in third party proprietary software which conforms to ISO9613 Acoustics - Attenuation of Sound During Propagation Outdoors - Part 2: General Method of Calculation implemented to ISO/TR 17534-3:2015 requirements. The predictions consider source to receiver distance and height and the noise attenuation provided by ground and air absorption, topography, surrounding buildings and other solid objects and permanent noise barriers (where applicable). The typical height of plant and equipment is 2m. The noise predictions at surrounding single and double storey properties apply at 1.5m at the most affected facade. Predictions for apartment buildings with greater than two storeys apply at the worst affected floor and facade. This assessment presents the total LAeq noise level from all activities.

3. Works description

The work activities that have been assessed are shown in Figure 1. Details of the activities are provided in Table 1. All noise levels referenced are in dBA, Leq,15minutes.

Figure 1. Location of modelled plant and equipment

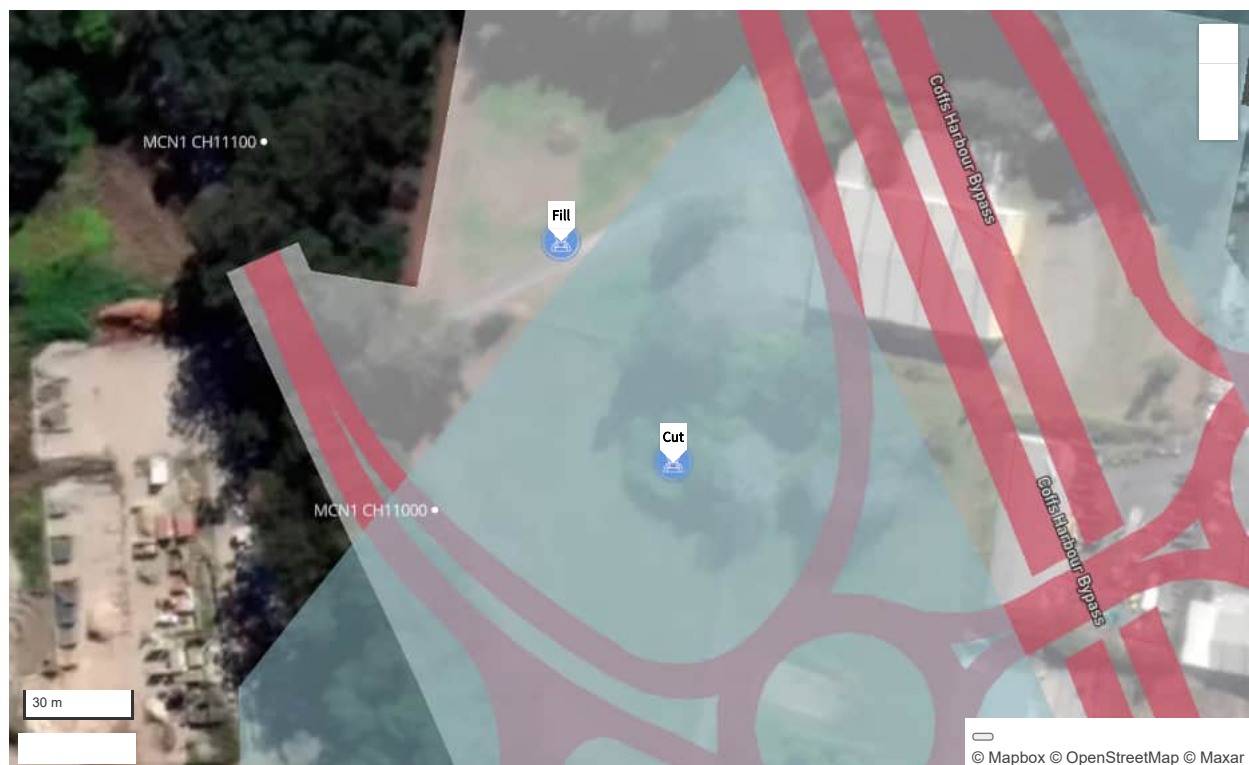


Table 1. Summary of modelled plant and equipment

Name	Duration	List of equipment	Sound power level	Annoyance penalty	Mitigation	Mitigation reduction	Notes
Fill	100%	Articulated Dump Truck (Tipping Fill) , Vibratory roller	115 dBA	0, 5		0 dBA	
Cut	100%	Excavator (tracked) 35t	110 dBA	0		0 dBA	

Based on the activities detailed above, noise levels above the NMLs have been predicted at several properties. The number of properties which exceed the NML for each land use surrounding the site are provided in the table below.

Table 2. Summary of predicted potential impacts at all surrounding land uses

Land use	Noticeable	Clearly audible	Moderately intrusive	Highly intrusive
	-	-	N, V	N, V
Residential	0	5	0	0
Hospital	1	0	0	0

Figure 2 provides map of all surrounding properties which have predicted noise levels above NML and additional mitigation measures. The details of these properties are also shown in Table 3. All noise levels referenced are in dBA, Leq,15minutes.

Figure 2. Map of predicted potential impacts at surrounding land uses

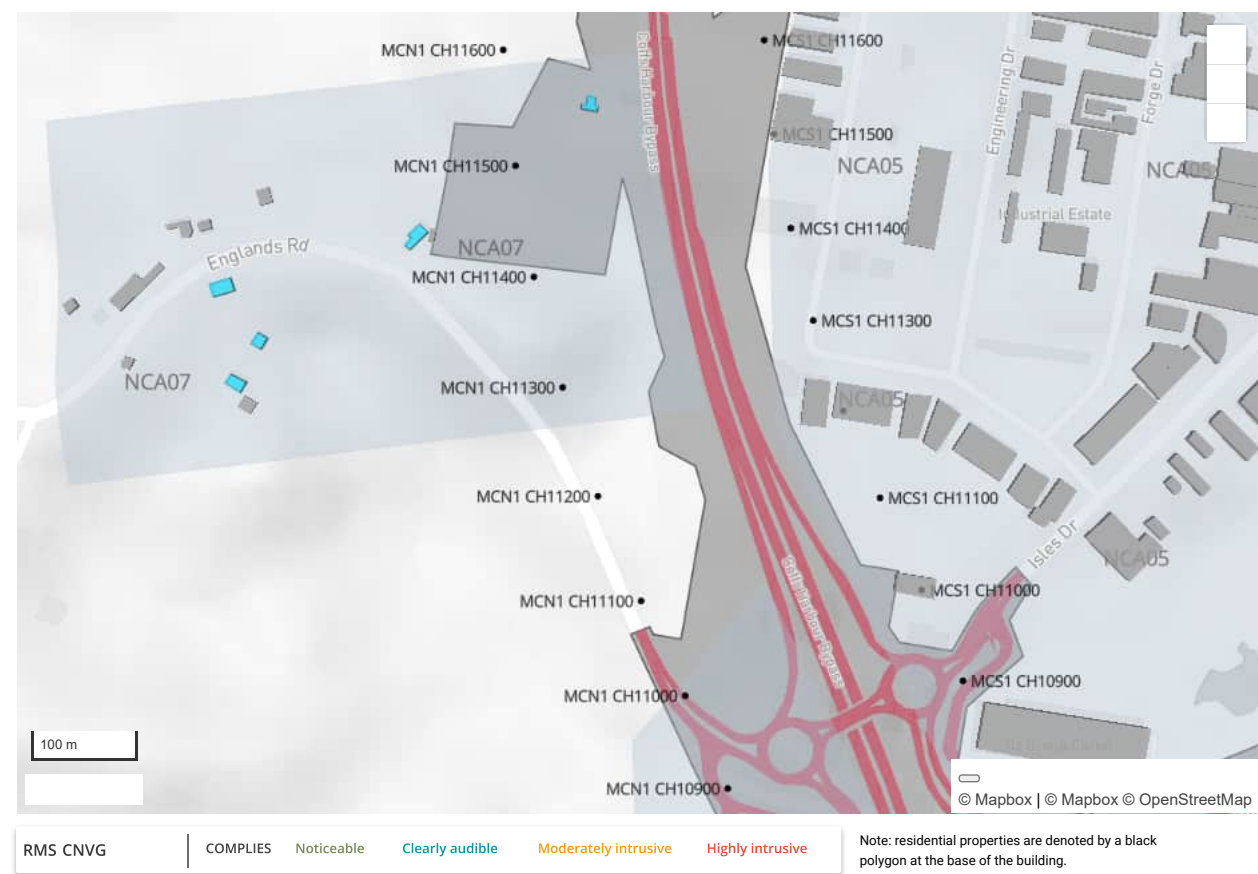


Table 3. Identified properties with predicted noise levels above NML ☒ Noticeable ☒ Clearly audible ☒ Moderately intrusive ☒ Highly intrusive

ID	Land use	Address	NCA	NML	Prediction	NML exceedance	RMS CNVG assessment category	Additional mitigation	Notes
19	Residential	102 Englands Road North Boambee Valley New South Wales 2450	7	45	46	1	Clearly audible	-	
1917	Hospital		3	45	41	-4	Noticeable	-	
1925	Residential	116a Englands Road North Boambee Valley New South Wales 2450	7	45	47	2	Clearly audible	-	
1931	Residential	103 Englands Road North Boambee Valley New South Wales 2450	7	45	48	3	Clearly audible	-	
1930	Residential	103 Englands Road North Boambee Valley New South Wales 2450	7	45	48	3	Clearly audible	-	
3312	Residential	100 Englands Road North Boambee Valley New South Wales 2450	7	45	48	3	Clearly audible	-	

Noise Assessment Report - 1C Site Establishment - Batch Installation, Day

Date: 20/04/23

Created by: Anna Burke

1. Introduction

This report presents a noise assessment of 1c site establishment - batch installation construction activity which is proposed to occur during the day period (RMS CNVG Standard). This report presents the proposed activities, noise prediction results, an assessment against RMS CNVG requirements and details proposed noise management and mitigation measures.

2. Method

NoiseCheck is a 'front-end' 3-D noise prediction platform which adopts a database of predictions that are generated in third party proprietary software which conforms to ISO9613 Acoustics - Attenuation of Sound During Propagation Outdoors - Part 2: General Method of Calculation implemented to ISO/TR 17534-3:2015 requirements. The predictions consider source to receiver distance and height and the noise attenuation provided by ground and air absorption, topography, surrounding buildings and other solid objects and permanent noise barriers (where applicable). The typical height of plant and equipment is 2m. The noise predictions at surrounding single and double storey properties apply at 1.5m at the most affected facade. Predictions for apartment buildings with greater than two storeys apply at the worst affected floor and facade. This assessment presents the total LAeq noise level from all activities.

3. Works description

The work activities that have been assessed are shown in Figure 1. Details of the activities are provided in Table 1. All noise levels referenced are in dBA, Leq, 15minutes.

Figure 1. Location of modelled plant and equipment



Table 1. Summary of modelled plant and equipment

Name	Duration	List of equipment	Sound power level	Annoyance penalty	Mitigation	Mitigation reduction	Notes
Unloading, Placement & Install	100%	Franna crane 20t, Road truck, Road truck, Hand tools (electric)	112 dBA	0, 0, 0, 0		0 dBA	

4. Results

Standard  

Based on the activities detailed above, noise levels above the NMLs have been predicted at several properties. The number of properties which exceed the NML for each land use surrounding the site are provided in the table below.

Table 2. Summary of predicted potential impacts at all surrounding land uses

Land use	Noticeable	Clearly audible	Moderately intrusive	Highly intrusive
	-	-	N, V	N, V
Residential	5	0	0	0

Figure 2 provides map of all surrounding properties which have predicted noise levels above NML and additional mitigation measures. The details of these properties are also shown in Table 3. All noise levels referenced are in dBA, Leq,15minutes.

Figure 2. Map of predicted potential impacts at surrounding land uses

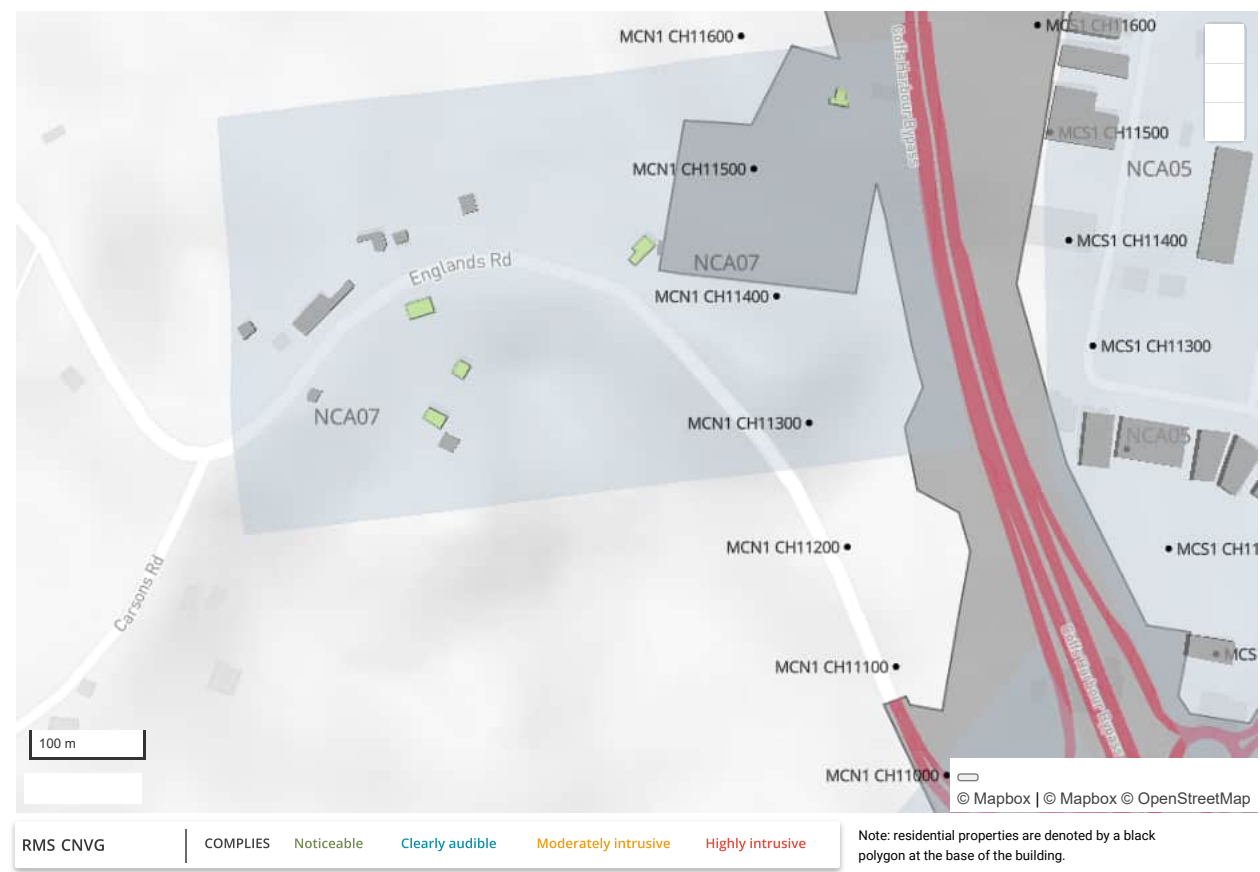


Table 3. Identified properties with predicted noise levels above NML

☒ Noticeable ☒ Clearly audible ☒ Moderately intrusive ☒ Highly intrusive

ID	Land use	Address	NCA	NML	Prediction	NML exceedance	RMS CNVG assessment category	Additional mitigation	Notes
19	Residential	102 Englands Road North Boambee Valley New South Wales 2450	7	45	44	-1	Noticeable	-	
1925	Residential	116a Englands Road North Boambee Valley New South Wales 2450	7	45	42	-3	Noticeable	-	
1931	Residential	103 Englands Road North Boambee Valley	7	45	43	-2	Noticeable	-	

1930	Residential	New South Wales 2450 103 Englands Road North Boambee Valley New South Wales 2450	7	45	43	-2	Noticeable	-
3312	Residential	100 Englands Road North Boambee Valley New South Wales 2450	7	45	44	-1	Noticeable	-

Showing 5 of 5 addresses

Show 50 more

APPENDIX C CONSULTATION RECORDS

ANCILLARY SITE ESTABLISHMENT MANAGEMENT PLAN – SITE 1C

External Consultation Summary Table

In accordance with MCoA A15, the ASEMPs must be prepared in consultation with Council and government agencies. The outcomes of consultation with government agencies in accordance with Condition A5 have been summarised in this attachment. Please also see Table 1 below for a summary.

TABLE 1 EXTERNAL CONSULTATION SUMMARY REVISION A

Reviewing Agency	Date document provided	Date comments received	Summary
Coffs Harbour Council	12/04/23	26/04/23	No comment
Environmental Protection Agency	12/04/23	14/04/23	Administrative comment provided

Please find attached:

- a) Attachment A - Evidence of Submission and Comments receipt by email
 1. Coffs Harbour Council
 2. Environmental Protection Agency
- b) Attachment B - Environmental Representative endorsement letter
- c) Attachment C - Cumulative Consultation Comments Register

ATTACHMENT A

From: Sally Whitelaw <sally.whitelaw@chcc.nsw.gov.au>
Sent: Wednesday, 26 April 2023 3:31 PM
To: Corliss, Hari
Cc: Burke, Anna; Anne Shearer
Subject: RE: Coffs Harbour Bypass - Ancillary Site Establishment Management Plan, 1C

You don't often get email from sally.whitelaw@chcc.nsw.gov.au. [Learn why this is important](#)

CAUTION: External email. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Hari,

I can confirm that there are no comments from the City of Coffs Harbour on this document.

Regards,
Sally Whitelaw
Acting Section Leader
Local Planning | City of Coffs Harbour
P: 02 6648 4673 | 02 6648 4000
E: sally.whitelaw@chcc.nsw.gov.au | W: www.coffsharbour.nsw.gov.au | @coffscouncil



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From: Corliss, Hari <hcorliss@CHBteam.com.au>
Sent: Wednesday, 26 April 2023 3:10 PM
To: Sally Whitelaw <sally.whitelaw@chcc.nsw.gov.au>
Cc: Burke, Anna <aburke@CHBteam.com.au>; Anne Shearer <anne.shearer@chcc.nsw.gov.au>
Subject: RE: Coffs Harbour Bypass - Ancillary Site Establishment Management Plan, 1C

Hi Sally,

Hope you have been well.

Is there any further comment from council on this ASEMP ?

Cheers

Hari Corliss

Environment and Sustainability Manager – Coffs Harbour Bypass

Ferrovial Gamuda JV



Level 15, 141 Walker St, North Sydney, NSW 2060
+61 419 124 227

hcorliss@chbteam.com.au

 Consider the environment. Please don't print this e-mail unless really necessary.

From: Corliss, Hari

Sent: Wednesday, 12 April 2023 4:02 PM

To: Sally Whitelaw <sally.whitelaw@chcc.nsw.gov.au>

Cc: Burke, Anna <aburke@CHBteam.com.au>; Anne Shearer <anne.shearer@chcc.nsw.gov.au>

Subject: RE: Coffs Harbour Bypass - Ancillary Site Establishment Management Plan, 1C

Thanks Sally,

That is dealt with through the CEMP and urban design/landscape design.

Essentially the batch plant will be decommissioned and the site landscaped/revegetated in accordance with the landscape design, unless the future use is proposed to be something other than a revegetated/landscaped area. Specific detail on this would be shown in the Place Design and Landscape Plan, which will go out for public exhibition later this year.

Also – the intent of the ASEMP is for the *establishment* of the ancillary facility.

Cheers

Hari Corliss

Environment and Sustainability Manager – Coffs Harbour Bypass

Ferrovial Gamuda JV



Level 15, 141 Walker St, North Sydney, NSW 2060
+61 419 124 227

hcorliss@chbteam.com.au

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From: Sally Whitelaw <sally.whitelaw@chcc.nsw.gov.au>

Sent: Wednesday, 12 April 2023 3:59 PM

To: Corliss, Hari <hcorliss@CHBteam.com.au>

Cc: Burke, Anna <aburke@CHBteam.com.au>; Anne Shearer <anne.shearer@chcc.nsw.gov.au>

Subject: RE: Coffs Harbour Bypass - Ancillary Site Establishment Management Plan, 1C

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Hi Hari,

I'll liaise with my colleagues to see how else wants input into this and get back to you.

One immediate question I have is what happens to the site when its decommissioned? Should there be a section on the decommission/rehabilitation or is that dealt with elsewhere?

Regards,
Sally Whitelaw
Team Leader Biodiversity, Coastal & Flooding
Local Planning | City of Coffs Harbour
P: 02 6648 4673 | 02 6648 4000
E: sally.whitelaw@chcc.nsw.gov.au | W: www.coffsharbour.nsw.gov.au | @coffscouncil



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From: Corliss, Hari <hcorliss@CHBteam.com.au>
Sent: Wednesday, 12 April 2023 3:28 PM
To: Sally Whitelaw <sally.whitelaw@chcc.nsw.gov.au>
Cc: Burke, Anna <aburke@CHBteam.com.au>; Anne Shearer <anne.shearer@chcc.nsw.gov.au>
Subject: Coffs Harbour Bypass - Ancillary Site Establishment Management Plan, 1C

Hi Sally,

Hope you are well, and had an enjoyable easter break!

As required by condition A15 of the Planning Approval for the Coffs Harbour Bypass please see attached the Ancillary Site Establishment Plan for Site 1C for consultation with City of Coffs Harbour.

Also attached is a comments review sheet.

Can you please coordinate a review from CoCH and provides comments by COB 19th April? Let me know if there are any issues with meeting this timeframe.

Cheers

Hari Corliss

Environment and Sustainability Manager – Coffs Harbour Bypass

Ferrovial Gamuda JV



Level 15, 141 Walker St, North Sydney, NSW 2060
+61 419 124 227

hcorliss@chbteam.com.au

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From: James Tucker
Sent: Friday, 14 April 2023 2:42 PM
To: Corliss, Hari
cc: Scott King
Subject: Coffs Harbour Bypass ASEMP 1C
Attachments: Copy of CHB Comments Review Sheet - Template (2)_JT.xlsx

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Hi Hari,

Only one minor formatting error. Otherwise all good on our end.

Thanks

James Tucker

Operations Officer

NSW Environment Protection Authority

Ph: (02) 6659 8294 M: 0499 488 109

james.tucker@epa.nsw.gov.au www.epa.nsw.gov.au @EPA NSW

Report pollution and environmental incidents 131 555 (NSW only) or (02) 9995 5555



I acknowledge and respect the Traditional Custodians of the land on which I work and live – Gumbainggir.

From: Corliss, Hari
Sent: Wednesday, 12 April 2023 3:29 PM
To: James Tucker
Cc: Burke, Anna
Subject: Coffs Harbour Bypass ASEMP 1C
Attachments: AF1C ASEMP Rev A_Combined_Optimized.pdf; CHB Comments Review Sheet - Template (2).xlsx

Hi James,

As required by condition A15 of the Planning Approval for the Coffs Harbour Bypass please see attached the Ancillary Site Establishment Plan for Site 1C for consultation with EPA.

Also attached is a comments review sheet.

Can you please coordinate a review from EPA and provide comments by COB 19th April? Let me know if there are any issues with meeting this timeframe.

Cheers

Hari Corliss

Environment and Sustainability Manager – Coffs Harbour Bypass

Ferrovial Gamuda JV



Level 15, 141 Walker St, North Sydney, NSW 2060
+61 419 124 227

hcorliss@chbteam.com.au



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From: Corliss, Hari
Sent: Friday, 28 April 2023 12:53 PM
To: James Tucker
Cc: Burke, Anna
Subject: RE: Ancillary Site 1C - ASEMP Rev B

Thanks James,

Hari Corliss
Environment and Sustainability Manager – Coffs Harbour Bypass

Ferrovial Gamuda JV



Level 15, 141 Walker St, North Sydney, NSW 2060
+61 419 124 227

hcorliss@chbteam.com.au

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From: James Tucker <james.tucker@epa.nsw.gov.au>
Sent: Friday, 28 April 2023 12:50 PM
To: Corliss, Hari <hcorliss@CHBteam.com.au>
Subject: RE: Ancillary Site 1C - ASEMP Rev B

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Hi Hari,

No issued on our end.

Cheers

James Tucker
Operations Officer

NSW Environment Protection Authority
Ph: (02) 6659 8294 M: 0499 488 109

james.tucker@epa.nsw.gov.au www.epa.nsw.gov.au [info@EPA NSW](mailto:info@epa.nsw.gov.au)

Report pollution and environmental incidents 131 555 (NSW only) or (02) 9995 5555



I acknowledge and respect the Traditional Custodians of the land on which I work and live – Gumbainggir.

From: Corliss, Hari <hcorliss@CHBteam.com.au>

Sent: Thursday, 27 April 2023 4:57 PM

To: James Tucker <james.tucker@epa.nsw.gov.au>; Duncan Thomas <duncan@geolink.net.au>; john@hutchisonweller.com; Mick.browne@transport.nsw.gov.au

Subject: Ancillary Site 1C - ASEMP Rev B

Hi all,

Please see attached the updated ASEMP with comments addressed, TC version provided along with the Comments Review Sheet.

Can you please review our responses and provide a status of closed, or not. Would appreciate a response by COB 2nd May if possible.

Cheers

Hari Corliss

Environment and Sustainability Manager – Coffs Harbour Bypass

Ferrovial Gamuda JV



Level 15, 141 Walker St, North Sydney, NSW 2060
+61 419 124 227

hcorliss@chbteam.com.au



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Any views expressed in this email are those of the individual sender except where the sender expressly and with authority states them to be the views of the Environment Protection Authority.

PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING THIS EMAIL

From: Duncan Thomson <duncan@geolink.net.au>
Sent: Friday, 5 May 2023 9:21 AM
To: Corliss, Hari
Cc: Burke, Anna
Subject: RE: Ancillary Site 1C - ASEMP Rev B
Attachments: 3992-1047 ltr to FGJV re ER endorsement of ASEMP 1C.pdf

CAUTION: External email. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Hari, see attached for the endorsement letter. The document control table on the 2nd page of the document had not been updated. I have stated in the endorsement letter that the version is Revision B dated 27/4/23 (which is the date you sent it to us). Please update the document control table to be consistent with this before submitting to DPE.

Thanks

Duncan Thomson
Director / Environmental Engineer

GeoLINK
P 02 6687 7666 | M 0419 237 075

From: Corliss, Hari <hcorliss@CHBteam.com.au>
Sent: Thursday, April 27, 2023 4:57 PM
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Duncan Thomson
Director / Environmental Engineer

GeoLINK
P 02 6687 7666 | M 0419 237 075

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Sent: Thursday, April 27, 2023 4:57 PM
To: James Tucker <james.tucker@epa.nsw.gov.au>; Duncan Thomson <duncan@geolink.net.au>; john@hutchisonweller.com; Mick.browne@transport.nsw.gov.au
Subject: Ancillary Site 1C - ASEMP Rev B

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Cheers

Hari Corliss
Environment and Sustainability Manager – Coffs Harbour Bypass

Ferrovial Gamuda JV



Level 15, 141 Walker St, North Sydney, NSW 2060
+61 419 124 227

hcorliss@chbteam.com.au

 **Consider the environment. Please don't print this e-mail unless really necessary.**

From: john hutchison <john@hutchisonweller.com>
Sent: Wednesday, 19 April 2023 4:03 PM
To: Corliss, Hari; Duncan Thomas; Mick.browne@transport.nsw.gov.au
Cc: Scott.LAWRENCE@transport.nsw.gov.au; Burke, Anna
Subject: RE: CHB - ASEMP 1C
Attachments: CHB Comments Review Sheet - 1C AA.xlsx

CAUTION: External email. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Hari
Minor comments.
Thanks
John



John Hutchison | Environmental Engineer

p: 02 8969 6071 m: 0407 801 144 www.hutchisonweller.com
Level 1 / 357 Military Road, Mosman NSW

From: Corliss, Hari <hcorliss@CHBteam.com.au>
Sent: Wednesday, April 12, 2023 3:31 PM
To: Duncan Thomas <duncan@geolink.net.au>; john hutchison <john@hutchisonweller.com>; Mick.browne@transport.nsw.gov.au
Cc: Scott.LAWRENCE@transport.nsw.gov.au; Burke, Anna <aburke@CHBteam.com.au>
Subject: CHB - ASEMP 1C

Hi Duncan/John/Mick,

As required by condition A15 of the Planning Approval for the Coffs Harbour Bypass please see attached the Ancillary Site Establishment Plan for Site 1C for review.

Also attached is a comments review sheet.

Can you please provide comments by COB 19th April? Let me know if there are any issues with meeting this timeframe. Happy to catch up and discuss as required.

Cheers

Hari Corliss
Environment and Sustainability Manager – Coffs Harbour Bypass

Ferrovial Gamuda JV



Level 15, 141 Walker St, North Sydney, NSW 2060
+61 419 124 227

hcorliss@chbteam.com.au

Burke, Anna

From: Hari Corliss (GEA) <hari.corliss@gamuda.com.au>
Sent: Thursday, 4 May 2023 3:27 PM
To: john hutchison
Cc: Duncan Thomson; Burke, Anna
Subject: RE: CHB Comments Review Sheet - ASEMP 1C_FGJV Response.xlsx

CAUTION: External email. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Thanks John, much appreciated.

I'll include the details for NV08 in the REMM compliance tracker.

Cheers

From: john hutchison <john@hutchisonweller.com>
Sent: Thursday, 4 May 2023 10:47 AM
To: Hari Corliss (GEA) <hari.corliss@gamuda.com.au>
Cc: Duncan Thomson <duncan@geolink.net.au>
Subject: CHB Comments Review Sheet - ASEMP 1C_FGJV Response.xlsx

Hi Hari
Comments closed out.
There are some freaky fonts in this version. I like them but maybe need to review.

One thing that is raised for me but perhaps not appropriate to address in this document is compliance with REMM NV08. How did you want to demonstrate site layout has considered these requirements? Applies to 1G as well. Just a file note?

Thanks
John

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ATTACHMENT B

5 May 2023
Ref No: 3992-1047

Ferrovial Gamuda Joint Venture
by email: hcorliss@CHBteam.com.au

Attention: Hari Corliss

Dear Hari

**Coffs Harbour Bypass – Ancillary Site Establishment Management Plan - Site 1C: ER
Endorsement**

In my capacity as Environmental Representative, I have reviewed the following document and endorse it as being appropriate:

- Ancillary Site Establishment Management Plan – Site 1C: Revision B – Coffs Harbour Bypass (Revision B, 27/04/2023, prepared by Ferrovial Gamuda Joint Venture)

Yours sincerely

GeoLINK



Duncan Thomson
Environmental Representative

ATTACHMENT C

Document No	CHBPW-FGJV-NWW-EN-PLN-000035 Revision A
Document Name	Ancillary Site Establishment Management Plan – Site 1C

Item	Date of review	Revision No.	Raised By	Company	Doc. (e.g., Section, Table)	Compliance Ref - If applicable (REMM, CoA, Deed)	Comment (Please include one comment per item)	Category	FGJV Response	Closed-Out (Y, N)
1	14/04/2023	A	James Tucker	EPA	5.11		3rd paragraph - Progressive Erosion and Sedimentation Control Plan (PESCP) (refer to Section Error! Reference source not found.).	Formatting	Fixed. Cross reference to Section 6.3 now included.	Closed
2	19/04/2023	A	AA	HW	5.2		Reference to at-property noise treatment. Is this valid? Are all treatments installed?		ARNT scope is still being finalised with TfNSW and property. Additional wording included to clarify noise treatment has not yet been installed and therefore hasn't been considered in the noise assessment.	Closed
3	19/04/2023	A	AA	HW	5.2.1 below table		Receivers treated yet?		Sentence removed given treatment has not yet been completed at these properties. Once complete, confirmation will be sought from TfNSW to confirm noise attenuation so this can be factored into future assessments (i.e. OOHV for concrete batching and deliveries).	Closed
4	19/04/2023	A	AA	HW	Table 6		Indicates earthworks will result in 5 CA and 3 MI.		Typo corrected and 3 MI receivers removed from Table.	Closed
5	19/04/2023	A	AA	HW			Noisecheck report has no MI.		As per comment #4, Table 6 updated to match results of Noisecheck Assessment.	Closed
6	19/04/2023	A	AA	HW	Noisecheck		Earthworks has only a roller, excavator and dump truck. 1G had much more equipment than originally described. Can you confirm this is an accurate list of equipment and there won't be additional when the time comes?		Given the size of the ancillary facility and scope of cut/fill works, the equipment list is appropriate and was provided by construction team.	Closed
7	19/04/2023	A	AA	HW	Noisecheck		No hand tools for installing the dry mix plant? Ratchet guns?		Noise model & Section 5.2.1 updated with hand tools. Note: No change in noise category (still Noticeable).	Closed
8	19/04/2023	A	MB	TfNSW	section 5.13	REMM	Air Quality - suggest including Ozgroup as a sensitive air quality receiver as located 200m from site, real time air quality monitor is in place.		Updated to reference OzGroup Facility and continuous particulate monitoring.	Closed
9	19/04/2023	A	MB	TfNSW	section 7.4		Note that surface and groundwater reporting period is annual not six monthly		Table 11 updated.	Closed
10	19/04/2023	A	MB	TfNSW	section 7.4 Table		ER inspections fortnightly not monthly		Table 12 updated.	Closed
11	20/04/2023	A	ER	GeoLINK	Table 4, Table 5, Section 2.1	CoA A15 (a)	The description of the infrastructure proposed for Site 1C needs to be clearer and consistent - e.g. Table 5 has "fit out, commissioning and install of remaining site infrastructure" as a principal activity, but this is not really mentioned in Table 4. In particular, it would be helpful to more clearly describe the number of offices and crib sheds, extent of LV/HV vehicle parking, equipment & chemical storage, approx. number of workers to be based there. Are we just talking a couple of crib sheds to support the batch plant with 10 workers, or will this be a more substantial site office/compound?		Table 4 and Table 5 updated for consistency and with additional detail regarding crib sheds and on-site parking. Wording below Table 5 also updated to include approximate number of workers for the batching operations.	Closed
12	20/04/2023	A	ER	GeoLINK	Figure 2	CoA A15 (b)	This figure should show all infrastructure for the operational site. Where are the offices, crib sheds, ablutions, LV parking, HV parking, equipment storage etc.?		Figure updated with revised layout including location of parking, crib sheds, parking areas, etc.	Closed
13	20/04/2023	A	ER	GeoLINK	Figure 5		The figure title needs to be updated - it still includes the NCAs for Site 1G		Updated.	Closed
14	20/04/2023	A	ER	GeoLINK	Section 5.1.1	CoA A15 (a)	Will the establishment of Site 1C include an upgrade to the driveway entrance on Englands Rd and/or any upgrade works on Englands Rd (e.g. widening, line marking, and/or install of turning lane(s))? If yes, it would be helpful if the dot point in Table 4 that says "formalisation of access and egress points" could be expanded to describe the works.		No upgrades to the driveway/New Englands Road have been identified. Wording added after Table 4 to detail our process for managing road upgrades as part of the broader construction program should be they be required.	Closed
15	20/04/2023	A	ER	GeoLINK	Section 5.3		There is inconsistency between the extent of works shown in Figures 2 & 3 and the following statement in Section 5.3: "The TEC located within the northern extent of Ancillary Facility 1C has been identified for retainment and will therefore not be impacted." Figures 2 & 3 show the earthworks batter extending to Ch 11100, which goes into the TEC. Either need to acknowledge that some TEC will be cleared for the ancillary facility, or change the layout to avoid the TEC.		Figure updated with revised layout. Note: updated figure doesn't include aerial imagery overlay, however the earthworks batter will not impact on the TEC.	Closed

[illegible]