ENVIRONMENTAL IMPACT STATEMENT

WASTE MANAGEMENT FACILITIES OR WORKS (EARTHWORKS – FILL)

251 ADELAIDE STREET, RAYMOND TERRACE (PART LOT 232 DP593512)



CLIENT: RAYMOND TERRACE PARKLANDS

DATE: 12 APRIL 2022

PREPARED BY:



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DECLARATION

Environmental Impact Statement (EIS) – Proposed Environmental Protection Works to Rehabilitate Disused Quarry

Prepared under Part 4 of the Environmental Planning and Assessment Act 1979

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Proposed project	Environmental protection works to rehabilitate disused quarry	
Certification	I certify that I have prepared the contents of this Environmental Impact Statement and to the best of my knowledge:	
	 the document has been prepared in accordance with Part 4 of the <i>Environmental Planning and Assessment Act 1979</i> and Schedule 2 of the Environmental Planning and Assessment Regulation 2021; the contents of the environmental impact statement have been prepared in accordance with the NSW Department of Planning, Industry & Environment Secretary's Environmental Assessment Requirements; the document contains all information made available from the proponent; and The information contained in the document is neither false nor misleading. 	

Signed

Elloson

Released by
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Bulk Earthworks and Erosion Control Plan
Earthwork Management Plan
Biodiversity Development Assessment Report prepared by de Witt Ecology
Noise Assessment prepared by Acouras Consultancy
Air Quality report prepared by ViridIFC
Geotechnical Report prepared by Aargus
Preliminary Site Investigation prepared by ElAustralia
Traffic Impact Assessment prepared by SECA Solution
Flood Impact Assessment prepared by BMT
Aboriginal Heritage Due Diligence Assessment prepared by Insite Heritage



GLOSSARY AND ABBREVIATIONS

Key terms and abbreviations used throughout this document are specified in the following list.

Acronym	Legislation
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
EP&A Act	Environmental Planning and Assessment Act 1979
EP&A Regulations	Environmental Planning and Assessment Regulations 2021
BC Act	Biodiversity Conservation Act 2016
	Biosecurity Act 2015
	Coal Mine Subsidence Compensation Act 2017
	Coastal Management Act 2016
	Contaminated Land Management Act 2008
	Crown Land Management Act 2016
	Environmentally Hazardous Chemicals Act 1985
FM Act	Fisheries Management Act 1994
	Heritage Act 1997
	National Parks and Wildlife Act 1974
	Native Vegetation Act 2003
POEO Act	Protection of the Environment Operations Act 1997
	Protection of the Environment (Clean Air) Regulation 2010
	Protection of the Environment (General) Regulation 2009
	Protection of the Environment (Noise Control) Regulation 2008
POEO (Waste) Regulations	Protection of the Environment Operations (Waste) Regulations 2014
	Roads Act 1993
	Rural Fires Act 1997
	Soil Conservation Act 1938
	Waste Avoidance and Resource Recovery Act 2001
	Water Management Act 2000

Acronym	Terms
ABS	Australian Bureau of Statistics
AEP	Annual Exceedance Probability
AHD	Australian Height Datum
AHIMS	Aboriginal Heritage Information Management System
ASS	Acid sulfate soils
CEMP	Construction Environmental Management Plan
DA	Development Application
DPE	Department of Planning and Environment
EEC	Endangered Ecological Community
EIS	Environmental Impact Statement
ENM	Excavated Natural Material
EPA	Environmental Protection Authority
EPL	Environmental Protection Licence
ESD	Ecologically Sustainable Development
FPL	Flood Planning Level
LGA	Local Government Area
NES	National Environmental Significance
NSW	New South Wales
NRAR	Natural Resource Access Regulator
PASS	Potential acid sulfate soils
RAAF	Royal Australian Air Force
RFS	Rural Fire Service
SEARs	Secretary's Environmental Assessment Requirements
VENM	Virgin Excavated Natural Material

1. INTRODUCTION

1.1. PROJECT OVERVIEW

This Environmental Impact Statement (EIS) has been prepared for Raymond Terrace Parklands to accompany a Development Application (DA) for earthworks / fill to ensure that an underutilised area of the site which is currently constrained by flood impacts can be made suitable for future rezoning and residential development. The proposal requires consent pursuant to Part 4 of the *Environmental Planning and Assessment Act* 1979 (EP&A Act).

The proposal is further defined in the Environmental Planning and Assessment Regulation 2021 (EP&A Regulation), Schedule 3, Part 2, Clause 45 as waste management facilities or works:

waste management facility or works means a facility or works that-

- (a) stores, treats, purifies or disposes of waste, or
- (b) sorts, processes, recycles, recovers, uses or reuses material from waste.

Clause 45(4) states that development for the purpose of a waste management facility or works is designated development if, inter alia, the facility or work are located:

(a) in or within 100 metres of a natural waterbody, wetland, coastal dune field or environmentally sensitive area of State significance, or

- (b) in an area of high watertable, highly permeable soils, acid sulfate, sodic or saline soils, or
- (c) in a drinking water catchment, or
- (d) in a catchment of an estuary where the entrance to the sea is intermittently open, or
- (e) on a floodplain, or

(f) within 500 metres of a residential zone or 250 metres of a dwelling not associated with the development and, in the consent authority's opinion, considering topography and local meteorological conditions, are likely to significantly affect the amenity of the neighbourhood because of noise, visual impacts, vermin, traffic or air pollution, including odour, smoke, fumes or dust.

The site is partially mapped as a wetland (local), is mapped as containing acid sulfate soils, is flood affected and is within 500 metres of a residential zone. As a result, the proposal is designated development. Part 3 Division 1 of the EP&A Regulation states that a development application for designated development must be accompanied by an EIS.

Under Section 4.5 of the EP&A Act the Council is the consent authority for designated development. Section 4.12(8) requires the preparation of an EIS in accordance with the Secretary's Environmental Assessment Requirements (SEARs) obtained in relation to the development.

This EIS has been prepared to address the SEARs issued by the Secretary of the NSW Department of Planning and Environment (DPE) on 11 May 2021 (**Appendix 1**) and the relevant provisions of Schedule 3 of the EP&A Regulation. The proposal is referenced within the SEARs as:

"The importation, placement and retention of fill to mitigate flood risk for future rezoning and residential development."

A detailed description of the proposal including material, volume, mass and methodology is provided in Section 3 of this EIS.

1.2. PROJECT OBJECTIVES

The key objectives for the proposal include:

- Facilitate landform works required to achieve required FPL (5.7m AHD).
- Meet the objectives of Ministerial Direction 4.3 Flood Prone Land.
- Facilitate future rezoning and development of land for residential purposes.

1.3. SEARS

The SEARs (**Appendix 1**) for the preparation of an EIS provides key issues to be addressed. A summary of these issues and where these are addressed within this EIS is provided in Table 1.3 below.

Table 1.3: SEARs		
Category	Requirement	Section within EIS
General	The EIS must meet the minimum form and content requirements in clauses 6 and 7 of Schedule 2 of the EP&A Regulation	Throughout
Key Issues	The EIS must include an assessment of all potential impacts of the proposed development on the existing environment (including cumulative impacts if necessary) and develop appropriate measures to avoid, minimise, mitigate and/or manage these potential impacts. As part of the EIS assessment, the following matters must also be addressed:	
Strategic and statutory context	 a detailed justification for the proposal and suitability of the site for the development a demonstration that the proposal is consistent with all relevant planning strategies, environmental planning instruments, development control plans (DCPs), or justification for any inconsistencies a list of any approvals that must be obtained under any other Act or law before the development may lawfully be carried out 	Sections 4 and 8
Waste management	 details of the type, quantity and classification of waste/fill to be received at the site details of waste handling including, transport, identification, receipt, stockpiling and quality control the measures that would be implemented to ensure that the proposed development is consistent with the aims, objectives and guidelines in the NSW Waste Avoidance and Resource Recovery Strategy 2014-21. 	Section 6.12 and Appendix 4
Hazards and risk	 a preliminary risk screening completed in accordance with State Environmental Planning Policy No. 33 – Hazardous and Offensive Development and Applying SEPP 33 (DoP, 2011), with a clear indication of class, quantity and location of all dangerous goods and hazardous materials associated with the development. Should preliminary screening indicate that the project is "potentially hazardous" a Preliminary Hazard Analysis (PHA) must be prepared in accordance with Hazardous Industry Planning Advisory Paper No. 6 - Guidelines for Hazard Analysis (DoP, 2011) and Multi-Level Risk Assessment (DoP, 2011) an assessment of the risk of bushfire, including addressing the requirements of Planning for Bush Fire Protection 2019 (RFS). Any proposed Asset Protection Zones must not adversely affect environmental objectives (e.g. buffers) any geotechnical limitations that may occur on the site and if necessary, appropriate design considerations to address this an assessment of flood risk on the site. The assessment should determine: the flood hazard in the area; address the impact of flooding on the proposed development, and the development's impact (including filling) on flood behaviour of the site and adjacent lands; and address adequate egress and safety in a flood event. 	Sections 6.6, 6.7, 6.12 and Appendix 11
Air Quality and Odour	 a description of all potential air emission sources during infill operations 	Section 6.5 and Appendix 7

Noise and vibration	 a quantitative assessment of the potential air quality and dust impacts of the development in accordance with relevant Environment Protection Authority guidelines a description and appraisal of air quality impact mitigation and monitoring measures, in line with International Best Practice. a description of all potential noise and vibration sources during construction and operation, including road traffic noise a noise and vibration assessment in accordance with the relevant Environment Protection Authority guidelines a description and appraisal of noise and vibration mitigation 	Section 6.3 and Appendix 6
Soil and water	 and monitoring measures a description of local soils, topography, drainage and landscapes a detailed assessment of the extent and nature of any contamination of the soil, groundwater and marine sediments details of water usage for the proposal including existing and proposed water licencing requirements in accordance with the <i>Water Act 1912</i> and/or the <i>Water Management Act 2000</i> an assessment of potential impacts on floodplain and stormwater management and any impact to flooding in the catchment details of sediment and erosion controls a detailed site water balance an assessment in accordance with ASSMAC Guidelines for the presence and extent of acid sulfate soils (ASS) and potential acid sulfate soils (PASS) on the site and, where relevant, appropriate mitigation measures an assessment of potential impacts on the quality and quantity of surface and groundwater resources a description and appraisal of impact mitigation and monitoring measures 	Section 6.4 and Appendix 8
Traffic and transport	 details of road transport routes and access to the site road traffic predictions for the development during construction an assessment of impacts to the safety and function of the road network and the details of any road upgrades required for the development 	Sections 6.2 and Appendix 10
Biodiversity	 accurate predictions of any vegetation clearing on site or for any road upgrades a detailed assessment of the potential impacts on any threatened species, populations, endangered ecological communities or their habitats, including groundwater dependent ecosystems characterisation of the waterbodies in relation to their ecological and hydrological function details of weed management during construction and operation in accordance with existing State, regional or local weed management plans or strategies a detailed description of the measures to avoid, minimise, mitigate or offset biodiversity impacts 	Section 6.7 / Appendix 5
Visual	 including an impact assessment at private receptors and public vantage points 	Section 6.10
Heritage	including Aboriginal and non Aboriginal sultural baritage	Sections 6.8 and 6.0
Environmental Planning Instruments and other policies	 Ine EIS must assess the proposal against the relevant environmental planning instruments, including but not limited to: State Environmental Planning Policy (Infrastructure) 2007 State Environmental Planning Policy (Koala Habitat 	Section 4 (Note: a number of these SEPPs have been amended. The
	Protection) 2020	revised SEPPs are

Guidelines	 State Environmental Planning Policy No. 33 – Hazardous and Offensive Development State Environmental Planning Policy No. 55 – Remediation of Land Port Stephens Local Environmental Plan 2013 Hunter Regional Plan 2036 relevant development control plans and section 7.11 plans. During the preparation of the EIS you should consult the Department's Register of Development Assessment Guidelines which is available on the Department's website at https://www.planning.nsw.gov.au/Assess-and- Regulate/Development-Assessment/Industries. Whilst not exhaustive, this Register contains some of the guidelines, 	referenced i EIS). Throughout	n this
	policies, and plans that must be taken into account in the		
Consultation	 During the preparation of the EIS, you must consult the relevant local, State and Commonwealth government authorities, service providers and community groups, and address any issues they may raise in the EIS. In particular, you should consult with the: Department of Planning, Industry and Environment, specifically the: Environment Energy and Science Group Water Group Environmental Protection Authority Department of Regional NSW, specifically Regional Growth & Development Corporation Transport for NSW NSW Rural Fire Service Water NSW Worimi Local Aboriginal Land Council Hunter Water Corporation Port Stephens Council The surrounding landowners and occupiers that are likely to be impacted by the proposal. 	Section 4	
Further consultation after 2 years	If you do not lodge an application under Section 4.12(8) of the <i>Environmental Planning and Assessment Act</i> 1979 within 2 years of the issue date of these SEARs, you must consult with the Planning Secretary in relation to any further requirements for lodgement.	The SEAR dated 11 Ma The EIS is within 2 years issue of the S	s are y 2021. lodged s of the EARs.

1.4. STRUCTURE OF THE EIS

The purpose of this EIS is to:

- Describe the land to which the proposal relates and the character of the surrounding area;
- Describe the proposed activity;
- Define the statutory framework within which the proposal is to be assessed and determined;
- Determine environmental impacts of the proposed development; and
- Provide environmental mitigation measures to manage potential environmental impacts.

The EIS is set out as follows:

- Section 2 presents the site, its attributes and location.
- Section 3 presents a detailed description of the proposed works.
- Section 4 presents the statutory context.
- Section 5 outlines consultation with agencies and the community.
- Section 6 provides an environmental assessment of the proposed development and likely impact on the environment.

- Section 7 provides consideration of matters of national environmental significance.
- Section 8 provides a list of approvals and licences that may be required.
- Section 9 provides consideration of Clause 171 factors.
- Section 10 provides a compilation of environmental management measures.
- Section 11 provides a conclusion and justification for the proposed development.

1.5. PROPONENT DETAILS

The proponent for the development is Raymond Terrace Parklands.

2. SITE ATTRIBUTES AND LOCATION

2.1. SITE PARTICULARS

The site is located on land legally described as Lot 232 in Deposited Plan (DP) 593512 and known as 251 Adelaide Street, Raymond Terrace. Lot 232 in DP 593512 is approximately 44.36 hectares (ha). The site contains a disused and now inundated quarry void, which covers an area of approximately 20.71ha and greater than 1.25 million cubic metres (m³). An area of land covering approximately 1.5ha to the west of the quarry void provides connection from Adelaide Street to the area of the site that is subject of this EIS. The subject land is located north of the quarry void and has an area of approximately 5ha.

The site is generally bounded by low density residential development to the north, Windeyers Creek to the south, Adelaide Street to the west and the Raymond Terrace Wastewater Treatment Plant to the east. Further north is vegetated land and low-density residential development and further south is also vegetated land and the Pacific Highway. Further west is the Hunter River (~2 kilometers [km]) and further east to north-east is Grahamstown Dam (~4km). The site is located within the southern reaches of the Raymond Terrace area proximate to Heatherbrae and approximately 17km north of Newcastle. Figure 2.1 below provides an overview of the above-mentioned site location.



Figure 2.1: Overview of the site indicated by orange-dash line and Lot 232 DP593512 indicated by red line (approximate only). Quarry void to the south shown in yellow-dash line (Aerial image source: Aerometrex 2021)

Port Stephens Local Environmental Plan (LEP) 2013 identifies Lot 232 DP593512 within the RU2 Rural Landscape zone. The portion of land subject of this EIS has been investigated for rezoning potential. A Planning Proposal prepared in relation to the subject area achieved a positive Gateway Determination on 20 October 2017 to rezone the land from RU2 Rural Landscape to R2 Low Density Residential under

Port Stephens LEP 2013. The Gateway Determination identified a number of issues to address including environmental outcomes, mapping, floodplain risk management and consultation with agencies. Flooding and flood risk have been carefully considered as part of the rezoning process and to date remain unresolved. Advice received from Port Stephens Council (PSC) and the Biodiversity Conservation Division (BCD) of Department of Planning, Industry and Environment (DPIE) as it was known at the time, was that:

The planning proposal is inconsistent with Ministerial Direction 4.3 Flood Prone Land with its current landform, and that the proponent should undertake any landform works required to address flooding at the site in accordance with any statutory requirements, prior to any rezoning being considered further.

The proposed landform works aim to achieve a flood free area of land and enable the Planning Proposal to proceed.

A separate DA and supporting EIS was submitted to Council in November 2021 for the rehabilitation of the quarry void. That development application is currently undergoing assessment by PSC.

2.2. SITE HISTORY

The wider site has historically been used as a sand quarry since the late 1950s. The previous landowner, Rocla Quarry Products, had an Environmental Protection Licence (EPL) (No. 7485) for a Scheduled Activity being 'extractive activities', and the Fee Based Activity listed as 'land-based extractive activity' at a scale of >50,000 to 100,000 tonnes. It is understood that quarrying activities ceased in 2010 and the EPL was surrendered in 2012.

2.3. ENVIRONMENTAL SETTING / PHYSICAL FEATURES

2.3.1. Topography

The larger site contains the quarry void which is partly inundated by water. The site is bounded by the elevated road embankments of Adelaide Street and the Pacific Highway. The remainder of the site contains areas of cleared and remnant vegetation of varying plant community types (PCTs) and conditions. The site is traversed by Windeyers Creek. Windeyers Creek is characterised by wide, low-lying swamp areas where ground levels are typically 1.0-1.5m AHD. The northern creek branch has been realigned into a well-defined channel running along the north and west boundaries of the site before intersecting with the southern branch at the southwest corner.

Across the remaining site, elevations are generally below 2.5m AHD, with the exception of the north-western corner of the block which is raised to around 3.0m AHD

2.3.2. Geology / Contamination

A Preliminary Geotechnical Investigation was prepared in relation to the proposed rezoning / residential development. The report is relevant to the proposed landform works and is therefore provided in **Appendix 8**. Assessment of the subsurface materials shows that the area is underlain by disturbed or re-worked sandy soils, residual clay and inferred rock encountered below this in one borehole only. Reference to published Acid Sulphate Soil maps shows that the area is in a zone known to have a Low Probability of Acid Sulphate Soil occurrence.

Groundwater was encountered during drilling in January 2020 at depths between 1.6m and 1.92m. Subsequent groundwater measurements in January 2020 represent equilibrated or standing groundwater levels and ranged from 1.46m to 1.74m in depth. An existing well onsite in the south-west corner of the proposed landform works area showed a groundwater level of 1.11m depth. This higher groundwater level may be due to the ground surface being lower than the other boreholes.

It should be noted that groundwater levels may be associated with surface water infiltration through soils and may be subject to seasonal and daily fluctuations influenced by factors such as heavy rainfall, broken services and use of the surrounding land. Soil moisture within the site may be influenced by events within the adjacent infrastructure or properties such as inflow from higher ground, road drainage etc. A Preliminary Site Investigation (**Appendix 9**) was prepared in relation to the proposed rezoning / residential development. Investigations reviewed potential contaminating sources that may have occurred and evaluated the likelihood for relevant exposure pathways to be complete. The report concluded the site is suitable for future residential development subject to the following recommendations:

- Site walkover inspection should be undertaken after site vegetation is cleared to allow adequate visual assessment of the existing ground surface with the EPA (2014) Waste Classification Guidelines; and
- > Any material to be removed from the site (including virgin excavated materials (VENM) must be classified for off-site disposal in accordance with the EPA 2014) Waste Classification Guidelines.
- Any material being imported to the site should be assessed for potential contamination in accordance with the EPA (2014) Waste Classification Guidelines.

2.3.3. Flooding

BMT completed a flood assessment report (ref: L.N20202.005 dated 28 March 2017) which reviewed existing flood conditions at the site, established development constraints with respect to flood planning provisions and undertook an impact assessment of proposed development footprints. Following review of the proposed planning proposal, additional information has been sought by the NSW Office of Environment and Heritage (OEH) regarding flooding. BMT prepared an additional report (ref: L.N20202.006 dated 19 September 2018) to address the following request from OEH:

"OEH recommends that the proponent should provide flood modelling of PMF flood events to demonstrate how occupants may be evacuated without increased reliance upon the SES or other emergency services and to demonstrate the level of impact on adjacent land not owned by the proponent."

Both reports are provided in **Appendix 11**. The additional report addresses design flood levels, flood access and flood warning. The key findings are summarised as:

- Design peak PMF level of 8.4m AHD would provide for extensive inundation at the site considering FPL of 5.7m AHD
- The proposed internal road levels and main site access connection to Adelaide Street provides for flood free access above the design 1% AEP flood condition
- Rising road access to area outside the PMF extent is available from the site along Adelaide Street to the north (towards Kent Street / Tathra Street)
- The existing flood warning systems for the Hunter River utilised by BoM/SES for issuing of flood warnings would provide a significant lead time for required evacuation of the site (for events exceeding the FPL)
- The evacuation distances from the site to flood free area above the PMF are relatively short thereby not requiring extensive lead warning time in any case.

An additional flood impact assessment has been prepared for proposed earthworks to determine peak flood levels and flood behaviour at the site for the 10% Annual Exceedance Probability (AEP) and 1% AEP design events (**Appendix 11**).

An XP-RAFTS hydrologic model and a TUFLOW hydraulic model were developed for the assessment. Flood behaviour at the site for the 10% AEP and 1% AEP design flood events has been determined for existing and post-development scenarios, identifying that there will be negligible off-site peak flood level impacts associated with filling the site in this manner. This would also be the case for Hunter River flood events (**Appendix 11**).



Figure 2.3.3: 1% AEP Flood Mapping (Source: BMT WBM, 251 Adelaide Street Raymond Terrace, Earthworks Flood Impact Assessment Ref: L.N21195.003)

2.3.4. Vegetation and Trees

A Biodiversity Development Assessment Report (BDAR) (Appendix 5) prepared by de Witt Ecology found that vegetation and fauna habitat throughout the study area has been modified by past disturbances associated with land clearing (including associated with sand quarrying and for power lines), ongoing management and edge effects from roadways and residential dwellings. The subject

land supports 5.48ha of native vegetation and 1ha of slashed / exotic vegetation. Native vegetation within the overall study area varied in composition and condition because of previous land uses, with native vegetation covering 18.83ha of the 44.06ha total area. Exotic vegetation was restricted to the access routes throughout the site, particularly the access road to the quarry void, underneath power lines and along the edge of Grahamstown Drain.

Excluding the quarry void, the study area is predominately covered with native vegetation.

The following PCTs were assessed as present within the subject land:

- PCT 1717 Broad-leaved Paperbark Swamp mahogany Swamp Oak Saw Sedge swamp forest of the Central Coast and Lower North Coast.
- PCT 1071 Phragmites australis and Typha orientalis coastal freshwater wetlands of the Sydney Basin Bioregion



Exotic / Slashed Vegetation.

Figure 2.3.4: Vegetation Communities (Source: de Witt Ecology)

2.3.5. Traffic and Access

The vehicular access to the site is from the existing unsealed driveway off Adelaide Street, which was previously used by the quarry. There is no formalised parking on site due to its historical use. There is ample capacity onsite for parking and vehicle manoeuvring.

Adelaide Street provides a connection between Raymond Terrace and the Pacific Highway network. Adelaide Street carries some regional traffic beyond Raymond Terrace in the Port Stephens LGA. The local road network is utilised by most vehicle sizes including B-double combinations. Adelaide Street is a single lane (each travel direction) road with sealed shoulders and grass verges. Adelaide Street has a sign-posted speed of 70km/h. An off-road shared pathway for pedestrian and cyclists is located along the western side of Adelaide Street.

Adjacent to the subject site, Adelaide Street provides a single lane of travel in each direction with a width of approximately 12.5 metres. To the north of the site, the road widens with a painted median and turn lanes which provide access to the various side roads and improved safety for road users. At the intersection of Adelaide Street and Tathra Street, a right hand turning lane is provided on the southern approach from Adelaide Street. Street lighting and kerb and guttering is provided along the majority of the length of the roadway.

There is a sealed shoulder allowing for kerbside parking along both sides of Adelaide Street adjacent to the site. Restrictions associated with road widening, driveways and intersections are in place to the north of the site in conjunction with residential development. Adelaide Street connects with the broader regional road network via a two lane circulating roundabout approximately 1km to the south.

2.3.6. Bushfire

The site is partially affected by bushfire prone land, mapped as Vegetation Buffer, Vegetation Category 3 and the access with Vegetation Category 1. The centre of the quarry void is not identified as bushfire prone land.



Figure 2.3.6: Extract from the ePlanning Spatial Viewer (NSW Government)

2.3.7. Coastal Zone

The site is not mapped within these areas. The Coastal Environment Area and Coastal Use Area are approximately 660m and 950m (respectively) from the site and proposed works.

2.3.8. Local Wetlands

Although the site is not identified as a coastal wetland, it is identified as a local wetland under Port Stephens LEP 2013. This is addressed further in Section 4 of the EIS.



Figure 2.3.8: Extract from Port Stephens LEP 2013 Wetlands Map - Sheet WET_002

2.3.9. Aboriginal Heritage

An Aboriginal Due Diligence Assessment was carried out in relation to the proposed landform works (**Appendix 12**). The Assessment found:

"There were sufficient sample areas of surface visibility at the time of inspection to determine that the subject area has been substantially disturbed. The soil profile was observed to be poorly developed which is consistent with a history of sandmining. Whilst overall the surface visibility was low due to the ground cover of pine needles, there were no objects found in those areas that did present the opportunity for objects to be located. There are no constraints to the rezoning, given that the likelihood of sites of significance remaining within the study area being low."

2.3.10. Non-Aboriginal (Historic) Heritage

<u>State</u>

The NSW State Heritage Inventory was searched on 24 February 2021. The site is not listed as an item of State Significance on the State Heritage Register. The Raymond Terrace Public School is listed within the NSW State agency heritage register under s.170 of the *Heritage Act 1977* and is approximately 735m north-west of the site. This item is co-located with the Raymond Terrace Public School - Building B00C and Movable Item. The school is also a locally listed item (I73) as provided in Table 2.3.10 and Figure 2.3.10 (overleaf).

Local

In addition to State Heritage Items, the local heritage register was searched and found the following local heritage items within 1 kilometre of the site (Table 2.3.10 and Figure 2.3.10 overleaf). It is noted

that some of these sites are also located within the Raymond Terrace Heritage Conservation Area (General).

Table 2 3 10: Summary	of Schedule 5 Environmenta	I heritage of LEP 2013	proximate to the site
Table 2.3. IV. Summary		THEINLAYE OF LEF 2013	

Item No. and Name	Address	Property description	~Proximity
	-		to site
I35 – The Free Presbyterian Church of	155 Adelaide Street	Lot 2, Section 16, DP	950m
Eastern Australia		758871	
I36 – "Woodlands" (timber cottage)	183 Adelaide Street	Lot 76, DP 621767	865m
I37 – Fig tree (<i>Ficus obliqua</i>)	193 Adelaide Street	Lot 28, DP 753161	850m
I39 – Raymond Terrace Cemetery and	1A and 2 Elizabeth	Part Lot 20, DP 753161;	580m
Pioneer Hill Cemetery	Avenue and 4 Tod	Lots 7008 and 7009, DP	
	Street	1051708	
145 – "Boomerang Park", including former	17E and 17G Irrawang	Lots 1 and 2, DP	675m
stone quarry and mature tree planting	Street	1226115	
I46 – St Brigid's Catholic Church	52 and 54 Irrawang	Lots 13 and 14, Section	950m
Group—St Brigid's Convent	Street	15, DP 758871	
I47 – St Brigid's Catholic Church	58 Irrawang Street	Lot 16, DP 547042	870m
Group—St Brigid's Church Hall			
I48 – "Bailiwick" (cottage)	70 Irrawang Street	Lot 2, DP 346695	780m
151 – "Kia-ora", including mulberry tree	13 Kia-ora Street	Lot 13, DP 24939	500m
beside driveway			
I68 – Sketchley Cottage and Port	1 Sketchley Street	Lot 1, DP 1247072; Part	700m
Jackson Fig tree (Ficus rubiginosa)		Road Reserve 1243	
I70 – St John's Anglican Church Group—	45 and 45A Sturgeon	Lots 3 and 4, Section 9,	965m
church	Street	DP 758871	
173 – Raymond Terrace Public School—	14 and 16 Swan Street	Lot 2, DP 868750; Lot	735m
former school hall, including WWI school		11, DP 1034823	
honour board			
I74 – "Kinross," including stone shed and	68 Wahroonga Street	Lot 721, DP 805426	400m
landscaping setting			
I78 – Uniting Church, including bell tower	54 William Street	Lot 190, DP 1132724	980m
and WWI honour board			
180 – St Brigid's Catholic Church	67 William Street	Lot 11, Section 15, DP	990m
Group—St Brigid's Presbytery		758871	
I81 – St Brigid's Catholic Church	69 William Street	Lot 12, Section 15, DP	935m
Group—St Brigid's Church		758871	



Figure 2.3.10: Extract from Port Stephens LEP 2013 Heritage Map - Sheet HER_002C) Subject site shown solid yellow.

2.3.11. Mine Subsidence

The site is not identified within a proclaimed mines subsidence district.

3. **PROJECT DESCRIPTION**

3.1. DESCRIPTION OF WORKS

This EIS accompanies a DA for the proposed landform works, classified as designated development (waste management facilities or works). The proposed works seek to facilitate future rezoning and residential development of the subject area.

The proposed development involves landform works to raise the ground elevation, currently between 9.56m AHD and 2.65m AHD to the flood planning level of 5.7m AHD. This will be achieved through a combination of cut to fill (approximately 40,000m³) and import of an additional 60,000m³ of excavated natural material (ENM) and virgin excavated natural material (VENM).

An Earthworks Management Plan was prepared to further consider the extent of earthworks required to achieve flood immunity on site (**Appendix 3**). Details of the proposal include the following:

- A total of 100,000m³ of material would be utilised for the cut and fill operations.
 - 40,000m³ of material would be cut from the north-western portion of the development site.
 - o 60,000m³ of material would be imported for the fill activities.
- 1m³ of material ~ 1.6 tonnes
- Operating hours Monday to Friday 7am to 6pm and Saturday 8am to 1pm. No work on Sundays or Public Holidays
- Maximum height of material stockpiles 3m
- Maximum combined footprint of material stockpiles 1ha
- Annual average concentrations were determined from average daily material movement rate of 440 tonnes per day (160,000 tonnes per annum / 365 days)
- 24-hour average concentrations were estimated based on a peak daily material movement rate of approximately 640 tonnes per day (1.5 times the average daily movement rate).

An earthworks plan is provided in Figure 3.1 below and in **Appendix 3**.



Figure 3.1: Earthworks Plan prepared by Phoenix Builders

Works are to include cut of up to 2m from the northern part of the site and fill of up to 2m in the southernmost part of the site. An average fill depth of 2m is proposed along the southern side of the development site. A gabion wall / retaining wall is proposed which runs along the southern length of the development. The height of the retaining wall ranges from 1m to 3m at the highest elevational difference (refer to **Appendix 3**). Any shortage / surplus of filling will be sourced via various sites in Sydney / Newcastle. The total volume of fill is 100,000m³.

The compacted fill in this area will follow the PSC earthworks specifications and PSC Subdivision with Public Infrastructure Standards and Guidelines as well as the relevant Australian Standards AS 3798-2007 Guidelines on Earthworks for Commercial and Residential Developments.

The Conceptual Earthworks Report provides several guidelines for the proposed earthworks including the following:

"All fill material placed on the site shall comprise only natural earth and rock, and is to be free of contaminants (as defined by Section 11 of the Environmental Protection Act 1994), noxious, hazardous, deleterious and organic materials. No demolition material is to be used."

Peak flood level impacts resulting from inclusion of the conceptual earthworks in the hydraulic model are presented in Figure 5 of **Appendix 11** for the simulated 10% AEP and 1% AEP design flood conditions. Peak velocity impacts are shown in Figure 6 of **Appendix 11**. These diagrams show the difference between flood conditions resulting from filling the site in line with the concept plan and the existing baseline flood conditions. The impact mapping confirms that there is negligible peak flood level (peaking at 23mm for the 10% AEP event) and velocity impacts resulting from the earthworks for the design events considered.

With regards to flooding from the Hunter River, the Windeyers Creek floodplain acts as a backwater storage for the Hunter River. It is therefore not important for the conveyance of Hunter River flood waters and the proposed loss of floodplain storage would be negligible in terms of the overall magnitude of Hunter River flood volumes and the quantity of storage available across the broader Hunter River floodplain. Flood impacts of the conceptual fill plan would therefore also be negligible for Hunter River flood events as well as those from the local Windeyers Creek catchment.

The purpose of the works is to ensure a future rezoning proposal is consistent with Ministerial Direction 4.2, the proposed rezoning of flood affected land to R2 Low Density Residential is of minor significance given that:

- FPL (5.7m AHD) can be achieved on site. This is based on the 1% AEP flood level + climate change + 0.5m freeboard.
- > Access to flood free land is readily available allowing for safe evacuation.
- > Flood warning systems are in place and these allow for long warning lead times.
- The proposed filling of the site and subsequent loss in temporary flood storage represents an insignificant proportion of the total flood volume.

The proposed filling of the site will have even less impact on the PMF event where site volume is very small fraction of the total flood volume passing through the Hunter River floodplain.

The proposal is consistent with Flood Advice prepared by BMT and Torrent Consulting (Appendix 11).

3.2. HOURS OF OPERATION

It is understood that the proposed construction works will occur during normal hours as follows:

- > 7:00am to 6:00pm Monday to Friday; and
- ➢ 8:00am to 1:00pm Saturday

No works will occur on Sundays or on public holidays.

3.3. PRELIMINARY WORKS

Preliminary works include tree removal and formalisation of the existing access road from Adelaide Street to allow for the transport vehicles to enter/exit the site and any upgrades required. Preliminary earthworks including erosion and sediment control measures will be established within the site as well as security fencing and construction signage as required.

3.4. PLACEMENT AND COMPACTION

The proposed earthworks involve the placement of approximately 100,000m³ of fill as depicted in the Earthworks Plan (**Appendix 3**).

An Earthworks Management Plan (**Appendix 4**) has been prepared to outline the proposed fill material, acceptance and verification procedures, volume and mass estimates, methodology of filling operations, erosion and sediment control measures, ground settlement monitoring, ground treatment and environmental monitoring. Extracts of the Fill Management Plan are provided in the subsections below. **Appendix 4** should be referred to for full details.

3.4.1. Fill Material, Volume and Mass

The materials to be imported and used for filling the site are to be sourced from various locations in the Sydney, Newcastle, the Hunter region and other sites in NSW. The fill material shall comprise VENM and ENM and other suitable material that is subject to a General or Specific Resource Recovery Exemption approved by the NSW EPA. Further details of the proposed materials are as follows:

VENM

The Protection of the Environment Operations Act 1997 (POEO Act) defines VENM as:

Natural material (such as clay, gravel, sand, soil or rock fines):

a) that has been excavated or quarried from areas that are not contaminated with manufactured chemicals, or with process residues, as a result of industrial, commercial, mining or agricultural activities; and

b) that does not contain any sulfidic ores or soils or any other waste and includes excavated natural material that meets such criteria for virgin excavated natural material as may be approved for the time being pursuant to an EPA Gazettal notice.

ENM

Excavated Natural Material (ENM) is excavated natural material that is, or is intended to be, applied to land as engineering fill or for use in earthworks, that is subject to "*The Excavated Natural Material Exemption 2014*" issued by the NSW EPA under the Protection of the Environment Operations (Waste) Regulation 2014. Under this exemption, ENM is defined as naturally occurring rock and soil (including but not limited to materials such as sandstone, shale, clay and soil) that has:

a) been excavated from the ground, and

b) contains at least 98% (by weight) natural material, and

c) does not meet the definition of Virgin Excavated Natural Material in the Act. Excavated natural material does not include material located in a hotspot; that has been processed; or that contains asbestos, Acid Sulfate Soils (ASS), PASS or sulfidic ores.

<u>RRE</u>

Where permitted under an existing General Resource Recovery Exemption (other than the ENM Exemption), geotechnically suitable fill may be used as fill in accordance with the conditions of the relevant exemption. Applications for a Specific Resource Recovery Exemption(s) may also be made to the NSW EPA for fill used in the quarry rehabilitation works for which there is no current general exemption and where the proposed fill is a bona fide beneficial, fit-for-purpose re-use that will not cause harm to human health or the environment. To be specific, fill other than ENM, that is subject to a General or Specific Resource Recovery Exemption and suitable for purpose will be referred to in this document as 'Resource Recovered Exempt Material' or RRE.

Topsoil and Landscaping

Following completion of filling, topsoil should be placed over the backfilled areas and the landform suitably vegetated in accordance with a Landscaping and Vegetation Planting Plan prepared by a suitably experienced and qualified landscaper/horticulturalist. For clarification, the term topsoil may include the following:

- General purpose soil: Material consisting of natural soil, amended natural soil, a blend of sand and organic materials or a blend of sand, natural soil materials and organic material, which is suitable for growth of plants.
- Topsoil: A natural soil which is the original surface layer of soil from grassland, bushland or cultivated land.
- Natural soil: A soil that has been dug from the landscape and is presented for use with o more than minor amendment. This soil can be topsoil, subsoil or a mixture of topsoil and subsoil, typically with a bulk density* of greater than 0.7 kg/L.
- Organic Soil: A general purpose soil (normally an amended natural soil or soil blend) that has a bulk density* of greater than 0.6 kg/L and an organic matter content in the range of 15% to 25% by mass.
- Soil Blend: A general purpose soil derived from the blending of two or more of: sand, natural soil material or organic material; and having a bulk density of greater than 0.7 kg/L and an organic matter content in the range of 3% to 15% by mass.
- Showth mediums being commercial composts to Australian Standards.
- > Commercially available soil products and growth media.
- On site blended soil that meets the requirement of, and is tested in accordance with AS4419 "Soils for Landscaping and Garden Use".

Assumed Material Properties

Fill materials are to be sourced from various locations and is likely to be ENM or VENM. Unusable topsoil will be removed and stockpiled. Usable topsoil will be maximised on site to minimise the import of external topsoil for revegetation and landscaping purposes.

Approximately 60,000m³ of material is estimated to be imported from offsite. The imported soil is expected to be EPA approved material that is suitable for residential development. The cut / fill ratios aim to achieve an overall balance. It is expected that all soil generated within the development will be utilised as fill or placed for noise barriers or landscaping works. It should be noted that aggregate and sand will be required. The source location for this material is likely be sourced from local quarries if unable to be produced on site.

The area to be filled shall result in the required FPL (5.7m AHD) to ensure the land is suitable for future rezoning and residential development.

3.4.2. Material Acceptance and Verification

Prior to receipt at the site

Prior to receipt at the site, VENM and ENM should be appropriately waste classified and certified by a suitably qualified and experienced Environmental Consultant in accordance with applicable NSW EPA waste classification guidelines. ENM or any material the subject of a Resource Recovery Exemption (RRE) to be received at the site must be accompanied by documentation confirming the material's compliance with the exemption conditions.

At the time of receipt at the site

Verification at time of acceptance should be carried out by a suitably trained and experienced Environmental Practitioner or consultant employed or engaged by the Site Operator. The verification procedures should include as a minimum:

a) Visual confirmation that the characteristics of the fill to be accepted is consistent with the material from the source site and is the subject of the corresponding waste classification/compliance certificate.

- b) The date and time of entry of the transporting vehicle.
- c) A description of the types of imported fill in the load.
- d) The identification details of the source of the fill and site of origin.
- e) The details of the transporting vehicle including registration number.

3.4.3. Estimated Programme

The proposed timeframe from start to completion of fill placement and construction of the final landform is a maximum period of 12 months, with the site works commencing operation within 3 months of approval. The Traffic Impact Assessment (**Appendix 10**) provides that a maximum 50 truck movements per day may be accommodated.

3.4.4. Proposed Methodology

The required fill will be transported from both within and outside the development boundary during the earthworks.

Standard dust and mud tracking controls shall be implemented as per the Air Quality Impact Assessment report recommendations (**Appendix 7**) and additional requirements to be detailed in development traffic and safety plans at later stage, prior to the commencement of work.

Storage of temporary stockpile areas for the site will be located as detailed in the soil and erosion control plan. This shall be observed onsite to determine if appropriate and relocated as required.

Thorough site analysis and work methodology shall be revisited prior to site commencement to maximise direct placement and minimise double handling and stockpiling requirements.

Dust, erosion and sediment control measures will be implemented as required to minimize air and water quality impacts, as suggested in the Virid IFC Qir Quality Impact Assessment and Erosion Control Plan.

3.4.5. Erosion and Sediment Controls

An Earthworks and Erosion Control Plan (ESCP) (**Appendix 3**) provides a strategy for the temporary soil and water management at the site to be implemented during the earthworks and is based upon the requirements of Landcom (2004) publication Managing Urban Stormwater: Soils and Construction.

The following erosion and sediment control measures are proposed for the site:

- Prior to commencement of any earthworks, the contractor and superintendent shall inspect the site to nominate the locations and types of sediment and erosion control measures to be adopted. These measures shall be implemented prior to any clearing or earthworks and maintained until the works are completed and no longer pose an erosion hazard, unless otherwise approved by the superintendent.
- 2. Immediately following setting out of the works, but prior to commencement of any clearing or earthworks, the contractor and superintendent shall walk the site to identify and mark trees which are to be preserved, notwithstanding the above, the contractor shall take all reasonable precautions to minimise disturbance to existing vegetation and ground cover outside the minimum areas required to complete the works and shall be responsible for rectification, at its own cost, of any disturbance beyond those areas.
- 3. Provide gully grate inlet sediment traps at all gully pits.
- 4. Provide silt fencing along property line as directed by the principle.
- 5. Additional control devices to be placed where directed by the principle.
- 6. Alternative designs to be approved by superintendent prior to construction.
- 7. Wash down/rumble area to be constructed with provisions restricting all silt and trafficked debris from entering the stormwater system.
- 8. No work or stockpiling of materials to be placed outside of site work boundary.
- 9. Appropriate erosion and sediment controls to be used to protect stockpiles and maintained throughout construction.
- 10. It is the contractor's responsibility to take due care of natural vegetation. No clearing is to be undertaken without prior approval from the superintendent.
- 11. To avoid disturbance to existing trees, earthworks will be modified as directed on-site by the superintendent.
- 12. The location of erosion and sedimentation controls will be determined by the superintendent and the contractor prior to any work commencing.
- 13. Access tracks through the site will be limited to those determined by the superintendent and the contractor prior to any work commencing.
- 14. All setting out is the responsibility of the contractor prior to works commencing on site. The superintendent's surveyor shall peg all allotment boundaries, provide coordinate information to these pegs and place benchmarks. The contractor shall set out the works from and maintain these pegs.
- 15. Plans are minimum requirements and are to be used as a guide only. Exact measures used shall be determined on site in conjunction with program of contractors works etc.

3.4.6. Environmental Monitoring

An Environmental Monitoring Plan should be prepared for the site that should describe as a minimum, the proposed locations and monitoring frequencies of the following components:

- Groundwater,
- Surface water,
- Air quality;
- Noise and vibration (if applicable for ground treatment works); and
- Discharge.

3.5. PLANT AND EQUIPMENT

The following list of plant and equipment has been provided:

- Profile compactor.
- Track loader.
- Track-dozer.
- Excavator.
- Mobile dust suppression system ('fogger').

It is considered that other plant and equipment will be necessary to undertake the proposed works. Details should be provided prior to commencement of work.

3.6. ALTERNATIVES

It is understood that only two options were considered in developing the proposal, these being the current proposal as described within this EIS and a 'do nothing' scenario.

Option 1 involves the proposed waste management facilities or works (earthworks), which are required to facilitate future residential development of the site. The proponent has designed the proposal with the future intended use in mind. A planning proposal process carried out in relation to the proposed rezoning of land to facilitate residential use confirmed there is strategic merit in the proposed eventual land use, however without raising the natural ground level above the FPL, the proposed rezoning was not supported.

Option 2 involves not proceeding with the proposed works. The site is underutilised in its current form. Not proceeding with the proposed works will result in the site remaining unusable for residential development. Option 2 is not the preferred option.

Accordingly, Option 1 is preferred and is considered throughout this EIS. The proposed works will facilitate the delivery of future residential land through rehabilitation of an existing underutilised and flood impacted site.

4. STATUTORY CONTEXT

4.1. COMMONWEALTH LEGISLATION

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provides a national framework for environmental protection and management of nationally and internationally important flora, fauna, ecological communities and heritage places. Part 3 of the EPBC Act lists nine matters of National Environmental Significance (NES) that may require approval from the Commonwealth Minister for the Environment. Further details regarding the impact of the development on places or matters of NES is provided in Section 7 of this EIS.

An action taken by any person on Commonwealth land that is likely to have a significant impact on the environment (Section 26(1)) or an action taken by any person outside of Commonwealth land that is likely to have a significant impact on Commonwealth land (Section 26(2)) may require approval from the Commonwealth Minister for the Environment. The proposal does not involve work by a Commonwealth agency and will not impact or be impacted by an activity, or impact on Commonwealth land.

4.2. ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979 AND REGULATION 2021

The proposal seeks consent under Part 4 the EP&A Act. The development is both designated and integrated development in accordance with the EP&A Act. Integrated development is discussed in Section 4.3 of this EIS.

Section 4.10 of the EP&A Act states designated development is declared to be designated development by an environmental planning instrument or the regulations and does not include State significant development despite any such declaration.

The proposal is further defined in the EP&A Regulation, Schedule 3, Part 2, Clause 45 as waste management facilities or works:

waste management facility or works means a facility or works that-

- (a) stores, treats, purifies or disposes of waste, or
- (b) sorts, processes, recycles, recovers, uses or reuses material from waste.

Clause 45(4) states that development for the purpose of a waste management facility or works is designated development if, inter alia, the facility or work are located:

(a) in or within 100 metres of a natural waterbody, wetland, coastal dune field or environmentally sensitive area of State significance, or

- (b) in an area of high watertable, highly permeable soils, acid sulfate, sodic or saline soils, or
- (c) in a drinking water catchment, or
- (d) in a catchment of an estuary where the entrance to the sea is intermittently open, or
- (e) on a floodplain, or

(f) within 500 metres of a residential zone or 250 metres of a dwelling not associated with the development and, in the consent authority's opinion, considering topography and local meteorological conditions, are likely to significantly affect the amenity of the neighbourhood because of noise, visual impacts, vermin, traffic or air pollution, including odour, smoke, fumes or dust.

The site is partially mapped as a wetland (local), is mapped as containing acid sulfate soils, is flood affected and is within 500 metres of a residential zone. As a result, the proposal is designated development. Part 3 Division 1 of the EP&A Regulation states that a development application for designated development must be accompanied by an EIS.

Schedule 1 of the EP&A Regulation states that a development application for designated development must be accompanied by an EIS. In accordance with Schedule 2, Clause 3, an application was made to the Secretary for the SEARs with respect to the proposed development. SEARs were provided on 11

May 2021 (**Appendix 1**) and are summarised in Table 1.3 with a corresponding comment on where each requirement has been addressed in the EIS. This document has been prepared to outline potential environmental impacts of the proposed development and appropriate management measures to ameliorate that impact in accordance with Schedule 3 of the EP&A Regulation and SEARs.

4.3. PROTECTION OF THE ENVIRONMENT OPERATIONS ACT 1997 AND PROTECTION OF THE ENVIRONMENT OPERATIONS (WASTE) REGULATION 2014

This section outlines how the proposal is considered a 'scheduled activity' under the *Protection of the Environment Operations Act* (POEO Act) *1997*, requires an Environmental Protection Licence and is subsequently integrated development. Schedule 1 of the POEO Act provides a list of scheduled activities that require a licence pursuant to Section 48 of the POEO Act. The proposed works must consider the applicability of Clause 39 of Schedule 1, which states:

"39 Waste disposal (application to land)

- (1) This clause applies to waste disposal by application to land, meaning the application to land of waste received from off site, including (but not limited to) application by any of the following methods—
 - (a) spraying, spreading or depositing on the land,
 - (b) ploughing, injecting or mixing into the land,
 - (c) filling, raising, reclaiming or contouring the land."

The proposal seeks to receive waste from off site for the purpose consistent with Paragraph (1)(c). Accordingly, Clause 39 is applicable to the site and works.

- "(2) However, this clause does not apply to an activity that involves any of the following—
 - (a) sites inside the regulated area that, over any period of time, receive from off site a total of no more than 200 tonnes of the following waste (and no other waste)—
 - (i) building and demolition waste only,
 - (ii) building and demolition waste mixed with virgin excavated natural material,

Subclause (2)(a) is applicable as less than 200 tonnes of material that is not building and demolition waste is proposed to be placed on site. Accordingly, Clause 39 is not applicable and the proposed works are not considered to be a scheduled activity in accordance with this clause.

Additionally, the POEO (Waste) Regulations 2014 provides resource recovery orders and resource recovery exemptions under Clauses 91 and 92 of the Regulations. The NSW EPA provides the following information as part of the SEARs (**Appendix 1**):

"1. Waste to which this exemption applies"

- 1.1. This exemption applies to excavated natural material that is, or is intended to be, applied to land as engineering fill or for use in earthworks.
- 1.2. Excavated natural material is naturally occurring rock and soil (including but not limited to materials such as sandstone, shale, clay and soil) that has:

a) been excavated from the ground, and

- b) contains at least 98% (by weight) natural material, and
- c) does not meet the definition of Virgin Excavated Natural Material in the Act.

Excavated natural material does not include material located in a hotspot; that has been processed; or that contains asbestos, Acid Sulfate Soils (ASS), Potential Acid Sulfate soils (PASS) or sulfidic ores."

It is understood that the proposed fill will not include PASS; accordingly, the proposed works can potentially meet the conditions of this exemption and are not considered a scheduled activity requiring an environmental protection licence (EPL) pursuant to Section 48 of the POEO Act.

Further, for the purpose of Section 50 of the POEO Act the proposed works are also not considered to be a controlled development. Section 50 of the POEO Act stipulates that an EPL (under Section 48 of the POEO Act) can only be granted once development consent (under Part 4 of the EP&A Act) has been granted. Accordingly, the proponent will not be required to seek an EPL from the NSW EPA prior to importing any fill material onsite.

Clause 120 of the POEO Act states that it is an offence to pollute water, if not regulated under an EPL. Appropriate erosion and sediment controls will be installed to prevent impacts of surface water runoff on nearby Windeyers Creek. It is considered that an EPL is not required in relation to the works. The project does not meet the definition of any other scheduled activity within Schedule 1 of the POEO Act.

4.4. STATE ENVIRONMENTAL PLANNING POLICY (BIODIVERSITY AND CONSERVATION) 2021

Chapter 3 of State Environmental Planning Policy (Biodiversity and Conservation) 2021 relates to Koala Habitat Protection (2020). Core Koala habitat is defined by the SEPP as an area with resident population of Koalas, as evidenced by attributes such as breeding females and recent sightings of and historical records of a population. There are 1300 records of Koala within ten kilometres of the study area (the locality) including records within the study area, the most recent record within the locality is from 2019. Potential Koala Habitat is defined by Koala SEPP 2020 as 'areas of native vegetation where trees of the types listed in Schedule 2 constitute at least 15% of the total number of trees in the upper or lower stratum of the tree component'. The study area supports known and/ or potential habitat for Koalas. The development is therefore required to demonstrate compliance with Koala SEPP 2020. Compliance of the development with the provisions of Appendix 4 of the Port Stephens Council Comprehensive Koala Plan of Management (CKPoM) constitutes compliance with Koala SEPP 2020.

A Koala habitat assessment was undertaken for the development in accordance with the guidelines provided in Appendix 6 of the CKPoM and is summarised below:

- The proposed development occurs through land listed by the CKPoM as an area of preferred koala habitat and associated 50m buffers with some areas of link over cleared (Figure 4.4.1 below).
- Inspection of the study area was undertaken and the proposed layout options for the subject land were walked to determine presence or absence of koala habitat.
- Preferred Koala feed tree species were recorded within 80 metres of the proposed subject land.
- The subject land contains predominantly low-moderate condition native vegetation with some areas containing moderate-good condition native vegetation. Previously cleared land providing infrequently used vehicle tracks also occur within the subject land.
- Most of the native vegetation within the subject land consists of PCT1717 with Swamp Mahogany being the primary feed tree species recorded, nearby but not within the subject land. A small number of Forest Red Gums (*Eucalyptus tereticornis*) are also located within the in the southwestern corner of the study area (Figure 4 of the BDAR). No feed tree species, including Swamp Mahogany were observed within the subject land in this vegetation community. Feed tree species will be avoided during construction.

Although habitat within the study area is considered suitable for Koala and it was mapped as Primary Koala habitat, most of the land within the study area does not contain any Koala feed trees with only two small clusters present in the southwestern corner of the study area containing Swamp Mahogany and Forest Red Gums individuals (Figure 4 of the BDAR).

These Koala feed trees clusters constituted between 10% and 35% of the overstorey vegetation in these areas, meeting the definition of Preferred Koala Habitat. However, the remainder of the native vegetation within the study area (PCT 1717) is considered supplementary Koala habitat due to the absence of Koala feed tree individuals (Figure 9 of the BDAR).

Habitat assessment conducted within the subject land included searching for signs of Koala and Koala feed trees. No Koalas were observed within the subject land or study area adjacent to the subject land, no signs of koala were observed. No scats were observed within the subject land. Pre-clearing assessment will be conducted to detect individuals utilising the subject land prior to removal and clearing supervision will be undertaken as part of the actions to avoid and minimise impact (Section 4.1 of the BDAR).

All developments within Port Stephens Local Government Area are required to comply with the provisions of Appendix 4 of the CKPoM in order to comply with Chapter 3 of SEPP (Biodiversity and Conservation) 2021. To comply with the CKPoM, developments within and adjacent to land containing primary Koala habitat need to address performance criteria. Using the results of the Koala habitat assessment, the development was assessed against the performance criteria outlined in Appendix 4 of the CKPoM.

The results of these assessments have determined that the development will be consistent with the objectives of the Port Stephens Council CKPoM, and therefore with Chapter 3 of SEPP (Biodiversity and Conservation) 2021, provided the recommended safeguards are implemented.

4.5. STATE ENVIRONMENTAL PLANNING POLICY (RESILIENCE AND HAZARDS) 2021

SEPP (Resilience and Hazards) 2021, Chapter 3 Hazardous or Offensive Development aims, inter alia, to ensure that in determining whether a development is a hazardous or offensive industry, any measures proposed to be employed to reduce the impact of the development are taken into account; and to ensure that in considering any application to carry out potentially hazardous or offensive development, the consent authority has sufficient information to assess whether the development is hazardous or offensive and to impose conditions to reduce or minimise any adverse impact. The SEPP defines "potentially hazardous industry" and "potentially offensive industry" as follows:

potentially hazardous industry means a development for the purposes of any industry which, if the development were to operate without employing any measures (including, for example, isolation from existing or likely future development on other land) to reduce or minimise its impact in the locality or on the existing or likely future development on other land, would pose a significant risk in relation to the locality—

- (a) to human health, life or property, or
- (b) to the biophysical environment,

and includes a hazardous industry and a hazardous storage establishment.

potentially offensive industry means a development for the purposes of an industry which, if the development were to operate without employing any measures (including, for example, isolation from existing or likely future development on other land) to reduce or minimise its impact in the locality or on the existing or likely future development on other land, would emit a polluting discharge (including for example, noise) in a manner which would have a significant adverse impact in the locality or on the existing or likely future development on other land, and includes an offensive industry and an offensive storage establishment.

The proposed use is not a type of hazardous or offensive industry or hazardous or offensive storage establishment. In determining whether the development is a use defined in the SEPP, consideration was given to the Department of Planning's January 2011 document Hazardous and Offensive Development Application Guidelines – Applying SEPP 33. The risk screening method was applied. It is relevant to note that no hazardous or offensive materials are proposed to be stored on site. The proposal involves the placement of ENM, VENM or RRE, subject to appropriate validation of material. The proposal will be subject of stringent mitigation measures to ensure the development does not pose a risk to human health, life or property, or to the biophysical environment. The proposed use is characterised as Waste Management Facilities or Works (Earthworks - fill) and is not a type of development defined in the SEPP.

No further consideration of the SEPP is required.

Chapter 4 Remediation of Land aims to promote the remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment. The investigations for the site are outlined in a Preliminary Site Investigation (**Appendix 9**) which concludes the site has not been contaminated by the historic or current usage of the site. Importantly, the Preliminary Site Investigation finds the site suitable for the proposed use.

4.6. PORT STEPHENS LOCAL ENVIRONMENTAL PLAN 2013

The site is zoned RU2 Rural Landscape pursuant to the Port Stephens LEP 2013 and flood mitigation work is permitted with consent in the zone. The LEP dictionary provides:

flood mitigation work means work designed and constructed for the express purpose of mitigating flood impacts. It involves changing the characteristics of flood behaviour to alter the level, location, volume, speed or timing of flood waters to mitigate flood impacts. Types of works may include excavation, construction or enlargement of any fill, wall, or levee that will alter riverine flood behaviour, local overland flooding, or tidal action so as to mitigate flood impacts.

The proposed filling of the subject area is considered flood mitigation work for the purpose of LEP 2013 is permitted with consent. Relevant Clauses of LEP 2013 are discussed in Table 4.6.

Clause	Consistency	
1.2 Aims	LEP 2013 provides for appropriate development within the LGA. The proposal has given due consideration to the site and surrounds and is in keeping with the aims of the LEP.	
2.1 Land use zones	The site is zoned RU2 Rural Landscape. Development permitted with consent includes: Agriculture; Airstrips; Animal boarding or training establishments; Aquaculture; Boat launching ramps; Boat sheds; Building identification signs; Business identification signs; Camping grounds; Cellar door premises; Cemeteries; Community facilities; Correctional centres; Crematoria; Dual occupancies; Dwelling houses; Eco-tourist facilities; Environmental facilities; Environmental protection works; Extractive industries; Farm buildings; Flood mitigation works ; Forestry; Group homes; Helipads; Home-based child care; Home businesses; Home industries; Information and education facilities; Jetties; Landscaping material supplies; Plant nurseries; Recreation areas; Recreation facilities (outdoor); Roads; Roadside stalls; Rural industries; Tourist and visitor accommodation; Turf farming; Veterinary hospitals; Water recreation structures; Water supply systems	
2.3 Zone objectives	 Objectives of the RU2 zone are as follows: To encourage sustainable primary industry production by maintaining and enhancing the natural resource base. To maintain the rural landscape character of the land. To provide for a range of compatible land uses, including extensive agriculture. The proposed rehabilitation of the disused quarry is consistent with the objectives of the zone by providing for future compatible land uses to occur. 	
5.10 Heritage conservation	An Aboriginal Cultural Heritage Due Diligence Assessment was prepared in relation to the site (Appendix 12). There are no constraints, from an Aboriginal heritage perspective, given that the likelihood of sites of significance remaining within the study area being low. Additionally, the site is not listed as an item of State Significance on the State Heritage Register or within Schedule 5 of LEP 2013.	
6.2 Public utility infrastructure	Services are available to the site and can be augmented as required for future residential works, post rehabilitation.	
7.1 Acid sulfate soils	The site is mapped as containing Class 2 and 4 acid sulfate soils. An Acid Sulfate Soil Management Plan (ASSMP) is not required for the development as it is unlikely to result in works by which the watertable is likely to be lowered.	

Table 4.6: Consistency with relevant clauses of LEP 2013

Clause	Consistency
7.2 Earthworks	The proposed works exceed the exempt development conditions for earthworks; accordingly subclause (3) applies to the proposal. This EIS discusses each of the items under (3)(a) to (h). Overall, the proposed works are considered to have a positive effect on the drainage pattern and soil stability in the locality of the development; improve the land for future use and redevelopment; provide quality fill appropriate for the future residential intended use; not adversely impact on the amenity of adjoining properties; source the fill material from suitable locations within the Hunter to Sydney regions; not disturb relics; and, provide appropriate measures to avoid, minimise or mitigate the impacts of the development on waterways.
7.3 Flood planning	Flood impact assessments have been conducted for the proposed works and the final landform is designed to avoid significant adverse impacts on flood behaviour and the environment (Appendix 11).
7.9 Wetlands	The proposed works are not considered to adversely impact the condition or significance of existing native fauna and flora on the land or the provision of quality of habitats on the land for indigenous or migratory species. Additionally, the proposed works will provide for an improved surface water characteristic of the land, including water quality, natural water flows and salinity by raising the ground level to above the FPL.

4.7. OTHER NSW LEGISLATION

Table 4.7 details relevant NSW legislation, the purpose of the legislation and its relevance to the proposal.

Table 4.7:	Legislative	Requirements	and Approvals
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Legislation Agency)	(Responsible	Purposes of Legislation	Relevance to the Proposal and Approval Requirements
Biodiversity Act 2016	Conservation	Maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development. The Act particularly relates to conservation of biodiversity.	The proposed works will require removal of an area of native vegetation mostly in low condition constituting a degraded and regenerating form of the EEC Swamp Sclerophyll Forest on Coastal Floodplains Threatened Ecological Community (TEC) to accommodate the rezoning proposal.
			A total of 11.62haof this IEC is in moderate-to-good condition occurs in the study area, of which 0.30ha is present in the subject site. The community is heavily invaded by lantana and other weeds in many parts of the study area, particularly in the subject site.
Biosecurity Ad	ct 2015	The primary object of this Act is to provide a framework for the prevention, elimination and minimisation of biosecurity risks.	The proposed works are not considered to involve any biosecurity risks.
Coastal Mar 2016	nagement Act	The objects of this Act are to manage the coastal environment of New South Wales in a manner consistent with the principles of ecologically sustainable development for the social, cultural and economic well-being of the people of the State.	The proposed works are not located within a coastal use area, coastal environment area, coastal wetlands or littoral rainforests.
Contaminated	I Land	The Act establishes a process for	A search of the NSW EPA

Legislation (Responsible Agency)	Purposes of Legislation	Relevance to the Proposal and Approval Requirements
Management Act 2008	investigating and (where appropriate) remediating land that the Environment Protection Authority (EPA) considers to be contaminated significantly enough to require regulation under Division 2 of Part 3. Furthermore, under Section 60 a person whose activities have contaminated land or a landowner whose land has been contaminated is required to notify the EPA when they become aware of the contamination.	Contaminated Land Record on 04 December 2020 did not list the site as contaminated land. The Preliminary Site Investigation (Appendix 9) concluded the site has not been contaminated by the historic or current use.
Crown Land Management Act 2016	The Act outlines functions and management of Crown land.	The proposed works do not occur on Crown land.
Environmentally Hazardous Chemicals Act 1985	The Act regulates use and storage of environmentally hazardous chemicals or declared chemical waste. It provides the OEH with assessment and control mechanisms for chemicals and chemical wastes.	This Act would only apply if environmentally hazardous chemicals were to be used during construction of the proposal and there is potential for a significant impact on the environment. There is no known use of environmentally hazardous chemicals associated with the proposal. Any such chemicals would be identified in the Construction Environmental Management Plan (CEMP) or equivalent.
Fisheries Management Act 1994	 The FM Act applies to all waters within the limits of NSW, except where Commonwealth legislation applies. Relevant sections are discussed: Section 200 requires a permit from the Minister for Primary Industries for Council to carry out dredging or reclamation work Section 205 requires a permit from the Minister for Primary Industries to harm marine vegetation in a protected area (including any public water land such as Crown land) Section 219 requires a permit from the Minister for Primary Industries or approval under this or another Act to create an obstruction that would block passage of fish Section 220ZZ the Determining Authority must consider whether the Proposal will result in a significant impact on threatened species, population or ecological communities, or their habitats. 	The proposed works are not considered to result in any of these impacts or require any permits under the Act.
Heritage Act 1977	The Heritage Act is administered by the Heritage Office within the Office of	No heritage items or places are located within the site.
Legislation (Responsible Agency)	Purposes of Legislation	Relevance to the Proposal and Approval Requirements
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	 Environment & Heritage and concerns protection and restoration and enhancement of State heritage items. The relevant provisions of the Act are: Section 139 prohibits disturbance of a relic unless an excavation permit is obtained from the Heritage Office Section 146 requires notification to the Heritage Office of any discovery of relics. 	
Coal Mine Subsidence Compensation Act 2017	Section 22 of the Act specifies that approval is required for development within mine subsidence districts.	The proposed works are not located within a proclaimed mine subsidence district.
National Parks and Wildlife Act 1974	The Act aims to conserve nature and objects, places or features of cultural value. An Aboriginal Heritage Impact Permit is required under Section 90 to harm or desecrate Aboriginal objects or places.	The Aboriginal Heritage Due Diligence Assessment did not locate any Aboriginal objects (Appendix 12) in the subject area. No archaeological objects or areas of potential archaeological deposits are noted on the site
Protection of the Environment (Clean Air) Regulation 2010	The Regulation provides general controls on preventing or minimising air pollution.	Environmental management measures under a future CEMP will ameliorate potential for air pollution during the construction phase (primarily dust).
Protection of the Environment (General) Regulation 2009	Regulates EPLs, certain pollutants types and locations and requirement to prepare Pollution Incident Response Management Plans (PIRMP).	A PIRMP may be necessary in accordance with any future EPL requirements.
Protection of the Environment (Noise Control) Regulation 2008	Regulates noise from vehicles, machines and articles.	A Noise Assessment (Appendix 6) was undertaken to assess the noise impacts from the construction and operational phases of the proposal. The assessment found that construction noise level during all stages of the work would comply with the EPA Interim Construction Noise Guideline.
Roads Act 1993	Objects of the Act are to, among other things, confer certain functions (in particular, the function of carrying out road work) on RMS and on other roads authorities, and to provide for the distribution of the functions conferred by this Act between RMS and other roads authorities.	No works are proposed within a road reserve or on roads owned/managed by Transport for NSW (TfNSW) or any other roads authorities.
Rural Fires Act 1997	Under Section 63 public authorities must take all practicable steps to prevent the occurrence and spread of bush fires on or from land vested in or under its control or management.	The site is partially affected by bushfire prone land with the centre of the quarry void not being identified as bushfire prone. The proposed activity is not a special fire protection purpose pursuant to the <i>Rural Fires Act 1997</i> or Rural Fires Regulation 2013 and does not require a bushfire safety authority.
Soil Conservation Act 1938	The Act allows for conservation of soil	The proposed works will result in an

Legislation (Responsible Agency)	Purposes of Legislation	Relevance to the Proposal and Approval Requirements
	resources and erosion mitigation.	improved environment. An Erosion and Sediment Control Plan has been prepared in accordance with the Managing Urban Stormwater: Soils and Construction "The Blue Book" (4th edition, Landcom 2004). However, the Soil Conservation Service may stipulate specific consultation prior to construction of runoff diversion or implementing any erosion and sediment control works.
Waste Avoidance and Resource Recovery Act 2001	Objects of the Act include encouraging efficient use of resources and reducing environmental harm in accordance with the principals of ecologically sustainable development. The Act establishes the waste hierarchy of avoidance, resource recovery and disposal.	The proposed works seek to reuse fill material that may be sourced as a result of resource recovery from other projects within the Hunter to Sydney regions.
Water Management Act 2000	The Act outlines approval requirements for activities at a specified location in, on or under waterfront land. Waterfront land includes the bed of any river, lake or estuary and all land within 40 metres of the highest bank of the river, lake or estuary. The Act also outlines water access rights and approval / concurrence requirements for use of groundwater and surface water runoff. Taking groundwater that is not managed by a water sharing plan requires a groundwater licence (Section 92).	The proposed works are within 40m of waterfront land and a controlled activity approval (CAA) will be required prior to undertaking the works.

4.8. **REGIONAL PLANS**

The following subsections review the Hunter Regional Plan 2036, Greater Newcastle Metropolitan Plan 2036 and Port Stephens Local Strategic Planning Statement. These documents are created to support each other and achieve an overall vision. All documents include goals/priorities for housing, economic development, environmental preservation/enhancement and connected communities. Due to the nature of the proposed works and intended future use of the site for recreational purposes many of the provisions of these plans do not apply.

4.8.1. Hunter Regional Plan 2036

The Hunter Regional Plan (HRP) 2036 (NSW Department of Planning & Environment, 2016) provides four (4) overarching Goals and 27 Directions to assist in guiding land use planning priorities and decisions from 2016 to 2036. Raymond Terrace is identified as a Strategic Centre; the HRP states that:

"The success of metropolitan Newcastle depends on the ability to develop, diversify and connect strategic centres, including a successful city centre. These are the largest centres of activity and employment in the region. They contain significant clusters of professional, retail, health and education services that are forecast to be major drivers of the economy in the future."

'Goal 1: The leading regional economy in Australia' identities strengthening the region's economic resilience, protect its well-established economic and employment bases and build on its existing strengths to foster greater market and industry diversification. The proposed works will allow for a currently underutilised site to be redeveloped for the benefit of residential use for the existing and growing population.

'Goal 2: A biodiversity-rich natural environment' seeks to protect and connect natural areas, sustain water quality and security and increase resilience to hazards and climate change. The proposed waste management facility is considered to result in an improved environment for the site and surrounding areas.

'Goal 4: Greater housing choice and jobs' states that it will be necessary to identify and facilitate housing lands to support the regional housing supply. The proposal will contribute to employment through the construction and operational phases and create land suitable for future residential housing.

4.8.2. Greater Newcastle Metropolitan Plan 2036

The Greater Newcastle Metropolitan Plan 2036 (GNMP) (NSW Department of Planning & Environment, 2018) sets out strategies and actions for sustainable growth across Cessnock, Lake Macquarie, Maitland, Newcastle and Port Stephens LGAs. The proposal is consistent with the Plan's intention to deliver 11,050 new dwellings within the Port Stephens LGA by 2036, 40% of which are to be accommodated within Greenfield Areas such as the subject site. The proposal will raise the ground level to above flood level, making the land suitable for future rezoning zoning and development.

4.8.3. Port Stephens Local Strategic Planning Statement

The Local Strategic Planning Statement (LSPS) identifies the 20-year vision for land use in Port Stephens. It sets out social, economic and environmental planning priorities for the future and identifies when they will be delivered. In terms of housing, the planning priorities in the LSPS are consistent with the PSHS i.e. to ensure suitable land supply, increase diversity of housing choice and plan infrastructure to support communities. The proposed works respond to the objectives of the LSPS by facilitating the delivery of land for housing.

Planning priorities for the natural environment include to conserve biodiversity values and corridors and improve resilience to hazards and climate change. Substantial effort has been made to address hazards such as flooding as outlined throughout this EIS.

The LSPS seeks to integrate land use and transport planning. The development provides opportunity for additional housing on existing public and private transport corridors with excellent connectivity to strategic centres and gateways such as Newcastle Airport.

4.9. PORT STEPHENS DEVELOPMENT CONTROL PLAN 2014

Port Stephens Development Control Plan (DCP) 2014 provides guidance to development of land under LEP 2013 and is intended to act as an integrated planning document. The purpose of the Port Stephens DCP is to supplement LEP 2013 and provide additional information to take into account when preparing a development application. An assessment of the proposed works against DCP requirements is provided in Table 4.9 below.



Table 4.9: Port Stephens DCP 2014 **Clause and Controls** Compliance **B** General Provisions **B1** Tree Management B1.A Non-rural areas The proposed development has been able to restrict direct impacts to: B1.1 Where any activity specified in Column 2 is proposed an applicant must attain the Removal of one hectare of exotic / slashed vegetation which is heavily disturbed, not consistent corresponding approval type specified in Column 1 except for an activity where no approval is with any threatened ecological communities and provides limited foraging resources for threatened required. fauna species. Figure BA: Approval requirements thresholds • Removal of PCT 1717 Broad-leaved Paperbark - Swamp mahogany - Swamp Oak - Saw Sedge Column 2 - Tree management activity Column 1 – Approval swamp forest of the Central Coast and Lower North Coast, consistent with Swamp Sclerophyll type required Forest EEC, in line with the following: Native vegetation panel Clearing of native vegetation that is subject to the biodiversity offset scheme Low-moderate condition – 4.03 hectares to be removed approval as specified in the Biodiversity Conservation Act 2016 Moderate-good condition – 1.32 hectares to be removed. 0 Council issued permit Removal or pruning of a tree or other vegetation where height exceeds 3m Removal of 0.12 hectares of moderate condition PCT 1071 Phragmites australis and 0 or circumference breast height exceeds 300mm; or Typha orientalis coastal freshwater wetlands of the Sydney Basin Bioregion, consistent Removal or pruning of a tree or other vegetation, irrespective of the size, with Freshwater Wetlands EEC. that is: a NSW Christmas Bush (Ceratopetalum gummiferum); -An assessment of the impacts of vegetation removal is provided in Appendix 5 and throughout a Cabbage Tree Palm (Livistona australis); this EIS. a species listed under the Biodiversity Conservation Act 2016; listed under the register of significant trees³; or part of a heritage item, heritage conservation area, Aboriginal object or Aboriginal place of significance, which Council is satisfied: is of a minor nature or is for the maintenance of that item, area. object or place; and - will not adversely affect the significance of that item, area, object or place Council issued Removal or pruning of a tree or other vegetation that forms part of a heritage development consent item, heritage conservation area, Aboriginal object or Aboriginal place of significance, which Council is not satisfied: is of a minor nature or is for the maintenance of that item, area, object or • place; and will not adversely affect the significance of that item, area, object or place Note: A development application will need to be lodged

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Clause and Controls		Compliance
Council approval not required	 Removal or pruning of a tree or other vegetation: authorised under other legislation, such as vegetation clearing authorised under the <i>Rural Fires Act 1997</i>, or a construction certificate or subdivision certificate; or where height exceeds 3m or circumference breast height exceeds 300mm, that is: within 5m of the wall of an approved structure measured from the wall to the trunk of the tree; a tree grown for fruit or nut production; maintenance of less than 12 months growth or 10% of foliage in accordance with Australian Standard (AS) 4373– Pruning of amenity trees; an undesirable species; or not otherwise listed as requiring Council approval; or that requires urgent removal notification post-event; or where there is a risk to human life or property, when Council is provided with a tree removal notification 10 days prior to removal. Note: The onus of proof is on the landowner and photos should be taken before and after removal. Landowners are encouraged to seek the advice of a qualified arborist in determining the direct threat of any tree. 	
B2 Natural Resources		
B2.A Environmental sign	ificance	
B2.1 Development located on land or is within 500m of land that contains items of environmental significance, such as threatened species or communities, listed migratory species, wildlife corridors, wetlands or riparian corridors and has the potential to impact biodiversity provides:		The site is identified within LEP 2013 as containing local wetlands. A BDAR (Appendix 5) completed for the site provides an assessment of impacts on wetlands.
a flora and fauna survey	to inform the assessment of significance,	
- The flora and fauna surve	ey is in accordance with:	
 NSW Department of Er Assessment: Guidelines for 	nvironment and Conservation. 2004, 'Threatened Species Survey and or development and activities'8	
- Hunter and Central Coas and Central Coast Regiona	st Regional Environmental Management Systems. 2002, 'Lower Hunter al Fauna and Flora Guidelines'9	

- If development poses a significant effect under 5A of the EP&A Act or if development is on land

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m and biodiversity credits required to be retired me constraints of the project, Raymond Terrace
rsity offset obligations through payment into the lent amount calculated using the BAM Offsets



Clause and Controls	Compliance
in a secure tenure ownership	Payment Calculator.
 located on land to which this Plan applies 	
B2.C Noxious weeds	
B2.3 Development situated on land that contains noxious weeds, as identified by a section 64 certificate under the <i>Noxious Weeds Act 1993</i> will seek to prevent, eliminate or restrict the spread of noxious weeds in accordance with noxious weeds technical specification	The BDAR (Appendix 5) found that seven priority weed species for the Hunter Region, which includes the Port Stephens LGA, were recorded in the study area. The report recommends mitigation measures to manage the spread of weeds on and off site.
B2.D Koalas	



Clause and Controls	Compliance
B2.4 Development located on or in proximity to land identified as koala habitat complies with the Port Stephens Comprehensive Koala Plan of Management10 through consideration to the performance criteria, being:	An assessment of impacts on Koala habitat are addressed in the BDAR in Appendix 5 and summarised throughout this EIS.
• Minimising the removal or degradation of native vegetation within preferred koala habitat or supplementary koala habitat	
• Maximising the retention and minimising degradation of native vegetation within supplementary habitat, habitat buffers and habitat linking areas	
 Minimising removal of any individual preferred koala feed trees 	
 Where appropriate, restore and rehabilitate koala habitat/buffers and linking areas 	
- Removal of koala habitat is off-set by a net gain of koala habitat on-site or adjacent	
 Make provision for long-term management of both existing and restored koala habitat 	
 Not compromise the safe movement of koalas, through: 	
- Maximisation of tree retention	
- Minimising barriers for movement, such as fences	
 Restrict development to defined building envelopes 	
 Minimising the threat to koalas from dogs, motor vehicles and swimming pools 	
- Development demonstrates consideration to the performance criteria within the statement of environmental effects (SEE) by providing the following:	
- Assessment of koala habitat in accordance with Appendix 6 – Guidelines for Koala Habitat Assessment of the Port Stephens Comprehensive Koala Plan of Management10	
- Site analysis plan indicates vegetation to be disturbed, cleared or retained	
- Illustration of the Asset Protection Zone (APZ)	
- Proposed measures for the safe movement of koalas, such as fencing or traffic control measures	
- Details of any programs to monitor koala populations	
Note: The Port Stephens Comprehensive Koala Plan of Management10 applies through the application of the SEPP (Koala Habitat Protection) 2019	
B3 Environmental Management	
B3.A Acid sulfate soils	
B3.1 Development located on acid sulfate soils (ASS) as identified on the Acid Sulfate Maps of the	The site is mapped as Class 2 and 4 Acid Sulfate Soils Notwithstanding, an Acid Sulfate Soil
Local Environmental Plan adheres to the Local Environmental Plan requirements by taking one of	Management Plan (ASSMP) is unlikely to be required due to the minimal extent of excavation and



Clause and Controls	Compliance
the following three paths:	no impact to the water table.
1. Accept that ASS is present and prepare a development application and an ASS management plan as set out in the NSW ASS Manual40; or	
2. Provide a framework for the on-going management and monitoring of the impacts throughout the development, in your ASS management plan. There is no set formula for managing ASS and each case must depend on the particular circumstance. Please refer to the NSW ASS Manual40 for details; or	
3. Undertake a preliminary assessment as set out in the NSW ASS Manual40, to determine whether ASS is present and whether the proposed works are likely to disturb or oxidise these soils or lower the water table.	
If ASS is present, Council must consider the following matters before development consent is granted:	
 The likelihood of the proposed development resulting in the discharge of acid water 	
• The adequacy of the ASS management plan prepared for the proposed development in accordance with the NSW ASS assessment guidelines	
B3.B Air quality	
B3.2 An air quality report is required where development has potential to adversely impact surrounding areas in terms of air quality	An Air Quality Report (Appendix 7) has been prepared as it was considered that dust would be the key air quality matter relevant to the proposed works. The report provides:
 An air quality report is to be generally provided for the following development types: 	"Emission rates for particulate matter (which has been identified as the key pollutant), have
o Rural industries	been estimated for all dust generating activities using published emission factors. Impacts at the
o Heavy Industry	meteorology driving the dispersion of pollutants has been developed using a combination of the
o Sewerage systems	TAPM and CALMET meteorological models.
o Waste or resource management facilities	Modelling shows that particulate concentrations for all the modelled size fractions (TSP, PM10,
o Extractive industry	PM2.5) and deposited dust levels are well below the respective assessment criteria across all
• The air quality report is to:	project site to the overall air quality levels is very low
o Address construction, operation and occupational impacts	Given that the operations at the project site comply with the relevant impact assessment criteria
o Identify emissions and measures to mitigate against impact on any nearby residences, especially on sensitive receivers	and taking into consideration the minimal contribution to the cumulative concentrations, it can be concluded that the proposed cut and fill operations at the 251 Adelaide Street site are not
o Prepared in accordance with the NSW Department of Environment and Conservation, 2001.	considered to be a critical issue with respect to air quality matters."



Clause and Controls	Compliance
'Approved Methods for Modelling and Assessment of Air Pollutants in New South Wales'39.	Potential impacts and mitigation measures further discussed in Section 6.5 of this EIS.
B3.C – Noise	
 B3.3 An acoustic report is required for development that has the potential to produce offensive noise, meaning: that, by reason of its level, nature, character or quality or the time at which it is made, or any other circumstances: is harmful to (or is likely to be harmful) to a person who is outside the premises from which it is emitted, or interferes unreasonably with (or is likely to interfere unreasonably with) the comfort or repose of a person who is outside the premises from which it is emitted that is of a level, nature, character or quality prescribed by the regulations or that is made at a time, or in other circumstances, prescribed by the regulations, such as the Environmental 	A Noise Assessment (Appendix 6) prepared for the proposed works provides that the proposed activity would involve the use of construction plant and equipment. Providing the management strategies outlined in the Noise Assessment are adopted, construction activity noise associated with the proposed development can managed to minimise impact to surrounding receivers to comply the NSW EPA guidelines. Potential impacts and mitigation measures further discussed in Section 6.3 of this EIS.
 Inter of an other circumstances, prescribed by the regulations, such as the Environmental Protection Authority. 2000, 'NSW Industrial Noise Policy'14 Note: Development that is likely to require compliance with this requirements includes: clubs, hotels and pubs with outdoor smoking, dining and gaming areas, mechanical plant, carparks; function centres that host outdoor weddings; childcare centres with outdoor and indoor play areas, air-conditioning plant, carparks; residential developments with ventilation and air-conditioning plant, carparks; and commercial developments with workshops, mechanical and ventilation plant such as air exhaust and supply fans, chillers, cooling towers, truck and freight train movements, loading docks etc. 	
B3.D – Earthworks	
 B3.4 Development may need to provide a bulk earthworks plan in order to adequately address the above matters when: cut exceeds 2m in depth fill has a total area of 100m2 or more is within 40m of the top bank of a riparian corridor as defined under the <i>Water Management Act 2000</i> 	An Earthworks Management Plan (Appendix 4) provides the levels of the site that will be filled. Areas of cut to fill along with areas where imported fill will be placed are identified in the plan. A plan has also been prepared that identifies finished levels across the site to 5.7m AHD.
B3.5 Fill must consist of Virgin Excavated Natural Material (VENM) as defined under the <i>Protection of Environment Operations Act 1997</i> or any other waste-derived material the subject of	The fill will consist of ENM, VENM, and other permitted material (RRE). This is discussed further in Sections 3.4 and 4.3 of this EIS.



Clause and Controls	Compliance
a resource recovery exemption under section 91 of the Protection of the Environment Operations (Waste) Regulation 2014 that is permitted to be used as fill material.	
B4 Drainage and Water Quality	
B4.A Stormwater drainage plan	
B4.1 Development that applies to this part is to provide a stormwater drainage plan and a written description of the proposed drainage system within the SEE.	The Waste / Fill Management Plan (Appendix 3 and 4) demonstrates finished ground levels that also indicate drainage patterns following the placement of fill.
Note: C1.D also provides drainage requirements for development relating to subdivision	
Note: Hydrological/hydraulic calculations and designs shall be prepared in accordance with the approaches outlined in the current Australian rainfall and runoff guidelines using the current hydrologic soil mapping data for Port Stephens available from Council. Other current Australian published design guides may also be applied to particular design situations.	
B4.B On-site detention / on-site infiltration	
 B4.2 On-site detention / on-site infiltration is required in stormwater requirement areas where: the post-development flow rate or volume exceeds the pre-development flow rate or volume; or impervious surfaces exceed the total percentage of site area listed under Figure BC; or it is identified under Section D Specific Areas of the DCP. 	No on-site detention or infiltration is proposed.
Note: A map of stormwater requirement areas is published on Council's website.	
 B4.3 On-site detention / on-site infiltration is to be: sized so that the post-development flow rate and volume equals the predevelopment flow rate and volume for all storm events up to and including the 1% annual exceedance probability (AEP) storm event 	No on-site detention or infiltration is proposed.
• provided by either underground chambers, surface storage or a combination of the two and are generally positioned:	
 under grassed areas for any cellular system (which can be easily maintained) under hardstand areas such as driveways for any concrete tank structures 	
Note: A neutral or beneficial effect (NorBE) on water quality must be designed for all storm events.	
B4.4 Details of the on-site detention / on-site infiltration concept design must be provided in the stormwater drainage plan and the written description and must include information on:	No on-site detention or infiltration is proposed.

Clause and Controls

Compliance

- demonstrated flow rate / volume for all design storm events up to the 1% AEP
- pipes, pits, overland flow and discharge point
- surface grates and maintenance access points
- orifice type, location and screening facility
- slope/gradient of the land
- ${\boldsymbol{\cdot}}$ post-development flow rate and volume for the site equal to pre-development flow rate and volume for the site

Note: B4.8 states that on-site detention / on-site infiltration may not be required for dual occupancy development if the water quality requirements under Figure BE have been satisfied.

Figure BC: Maximum impervious surface table

Land use zone	Maximum impervious surface area (%)
E4, R5, RU1, RU2 & RU3	Refer to Figure BD (below)
E1, E2, E3, IN4, RE1, RE2, SP1, SP2, W1 & W2	merit-based approach
R1, R2 & RU5	60
R3	75
B5, B7, IN1 & IN2	90
B1, B2, B3 & B4	100

Figure BD: Lot area impervious surface table

Lot area (m ²)	Maximum impervious surface area (%)
>5000	7.5
2000 to 5000	30
900 to 2000	40
<900	60

Note: Figure BD above only applies to land zoned E4, R5, RU1, RU2 and RU3

B4.C Water quality

B4.5 Development is to provide stormwater quality improvement devices (SQIDs) in accordance Refer to Erosion and Sediment Controls in **Appendix 3**. with Figure BE: Water quality table, unless:

• a WSUD strategy that applies to the land has been approved by Council and is listed on Council's website for the purposes of this requirement.



Clause and Controls	Compliance
 the development is a dwelling house, semi-detached dwelling, secondary dwelling, and/or ancillary structure to residential development, or; 	
 the development is for alterations and additions to a dwelling house, semi-detached dwelling, secondary dwelling, and/or ancillary structure to residential development, or; 	
 the development is for other minor alterations and additions on a lot of less than 250m2 	
A document listing approved WSUD strategies is available on Council's webpage. Where an approved WSUD strategy applies to the land, details are to be provided which demonstrate that any requirements outlined in the list of approved WSUD strategies have been incorporated into the development.	
Note: The list of approved WSUD Strategies should be consulted for the purpose of determining whether SQIDs are required for a complying development proposal.	
B4.6 Stormwater quality improvement devices (SQIDs) are designed to be taken off-line from minor and major drainage systems.	Refer to Erosion and Sediment Controls in Appendix 3.
B4.7 Development submits the evidence of how the water quality targets have been achieved (eg SSSQM Certificate, MUSIC or MUSIC-Link report).	A MUSIC model has not been provided as part of the proposal.
B4.9 Erosion and sediment measures are provided during the construction phase in accordance with the issued conditions of consent	Erosion and Sediment Controls are provided in Appendix 3 .
 B4.10 Development that, in the opinion of the Council, has the potential to significantly adversely affect the water quality of the drinking water catchment will be referred to Hunter Water under section 51 of the <i>Hunter Water Act 1991</i>. Development or activities which pose unacceptable risks to a drinking water catchment are not likely to be supported by Hunter Water. Note: Refer to Hunter Waters' document 'Guidelines for developments in the drinking water catchments' for development types that will likely trigger referral to Hunter Water. Figure BE: Water quality table 	As per the comment for B4.5, no significant adverse effects to water quality are anticipated as a result of the proposed works.



Clause and Controls		Compliance			
Type of development or site area	Water qua Devlopment within a drinking water catchment	ality targets Development outside a drinking water catchment	Tool used to achieve target		
Lots with a site area greater than 250m ² and less than 2,500m ²	 Before water is released into public drainage, the water quality outcomes shall achieve: NorBE; or Council's water quality stripping targets whichever achieves the better water quality outcome. 	Before water is released into public drainage it must achieve Council's water quality stripping targets	 Either: Water quality modelling, such as SSSQM or MUSIC; or Compliance with a standard drawing produced by Council for the purposes of development control B4.5 published on Council's website 		
Lots with a site area equal to or greater than 2,500m ²	Before water is released into public drainage , the water quality outcomes shall achieve: • NorBe : or • Council's water quality stripping targets whichever achieves the better water quality outcome.	Before water is released into public drainage it must achieve Council's water quality stripping targets	Water Quality Modelling, such as MUSIC Modelling		
B4.D – Riparian	Corridors				
B4.11 Development involving a controlled activity within waterfront land (within 40m from the highest bank of the river, lake or estuary) adheres to the <i>Water Management Act 2000</i> Note: Council can advise on the location and order of waterfront land		The proposed works are within 40m of a watercourse and will therefore involve a controlled activity. The proposal will be subject to a CAA from NRAR in accordance with the <i>Water Management Act 2000.</i>			
 B4.12 Development provides the following buffers to riparian corridors that are generally consistent with the recommendations of the NSW Office of Water. 2012, 'Guidelines for riparian corridors on waterfront land'15: 50m buffer from 3rd order water courses or above with a 40m vegetated riparian zone and 10m vegetated buffer 30m buffer from 1st-2nd order water courses with a 20m vegetated riparian zone and 10m 		Appropriate buffers to riparian zones can be achieved.			
vegetated buffer B4.13 Riparian corridors are dedicated as public open space when Council agrees to take ownership of that land		N/A – No land is proposed to be dedicated to public open space at this time.			



Clause and Controls	Compliance			
B5 Flooding				
B5.A Development on all flood prone land				
B5.1 If multiple flood hazard categories are specified for a site on a flood certificate, the proposed development must be located on the land with the lowest flood risk.	The proposed works will result in an improved state for flood impact of the site.			
B5.2 Development must meet the minimum FFL as specified in Figure BJ. Note: The National Construction Code may provide minimum FFLs for some categories of development which prevail to the extent of any inconsistency with these controls. The finished surface of open space car parking, carports and driveways should be designed being regard to vehicle stability including carports and driveways should be designed	The purpose of the proposed works is to ensure the site meets the minimum FPL to facilitate future residential development.			
by flood waters.				
B5.3 Development for a building (and/or an associated driveway or access) must be of a flood compatible design and construction and shall meet the relevant requirements in the Construction of Buildings in Flood Hazard Areas (Australian Building Codes Board). Council may also require structural certification for development proposed on land which becomes a floodway in the PMF.	N/A – The proposed works are not for a building. Following approval, the subject area may be rezoned for residential purposes, suitable for future development.			
B5.4 Fencing on flood prone land should be stable in events up to the current day 1% AEP flood event and not obstruct the flow of floodwater	Details of fencing are not yet provided; however, it is noted that it should be consistent with this control.			
B5.5 All incoming main power service equipment, including all metering equipment, and all electrical fixtures, such as power points, light fittings, switches, heating, ventilation and other service facilities must be located above the FPL, or where possible above the PMF.	Details of any required power service equipment are not yet provided; however, it is noted that it should be consistent with this control.			
Where the above cannot be achieved, the following features shall be used:				
 Electrical cabling is not to be installed within walls, or chased into walls; and 				
 Any circuit containing switches, power points or any other electrical fitting that are located below the FPL, shall connect to the power supply through an individual Residual Current Device (RCD), located in the meter box. 				
B5.6 The storage of hazardous or potentially hazardous materials, potentially polluting material or material that could be washed from site and cause harm downstream must be stored above the FPL with appropriate bunding.	The proposed works will not involve the storage of hazardous or potentially polluting material or material.			
B5.7 Items that may wash away during flood events (e.g. rainwater tanks, hot water tanks, gas cylinders, shipping containers) must be elevated above the 1% AEP flood event level in the year 2100 (without freeboard) or anchored to resist buoyancy and impact forces.	N/A – The proposed works are for earthworks only.			



	Clause and Controls	Compliance			
	B5.B Development on all flood prone land other than minimal risk flood prone land				
 B5.8 A flood impact and risk assessment is required for: Any fill on land identified as floodway. Any fill located in a flood storage area, unless: The net volume of fill does not exceed the lesser of 20% or 2000m3 of the flood volume of the lot in the 1% AEP flood event in the year 2100 (this includes consideration of previous fill volumes); and It is demonstrated that the fill does not adversely affect local drainage patterns of all events up to the 1% AEP flood event in the year 2100. Note: Fill in flood storage areas greater than the abovementioned volume can be offset by flood storage. Offsetting can be achieved through consolidation of lots and/or assigning an 'easement to flood land' on the compensatory lot/s. Compensatory lots must be located within the zone of influence of the proposed fill (as demonstrated by the flood impact and risk assessment) or adjacent to the proposed fill and be of the same hazard category of the subject site. Any fill for the purposes of a livestock flood refuge mound, unless the livestock flood refuge mound is located in an identified flood fringe area: The volume/size and location of the livestock flood refuge mound meets the criteria in Figure BK; and The size of the mound must have regard to the agricultural capacity of the land. The design and size of the mound shall be determined by reference to the NSW Department of Primary Industries 		A Flood Impact Assessment and addendum report is provided in Appendix 11 . Flood behaviour at the site for the 10% AEP and 1% AEP design flood events has been determined for existing and post-development scenarios, identifying that there will be negligible off-site peak flood level impacts associated with filling the site in this manner. This would also be the case for Hunter River flood events. No additional flood impact assessment is considered necessary for the proposed development.			
	 Agriculture. 2009, 'Primefacts: Livestock flood refuge mounds'; and Where the proposed development could change flood behaviour, affect existing flood risk, or expose people to flood risks that require management or; If Council determines a flood impact and risk assessment is necessary for any other reason. 				
	B5.9 For residential accommodation, subdivision, commercial premises, industrial premises, garages, open car parking spaces and carports, a reduced planning horizon of 50 years from the date of determination will be accepted where the design facilitates ongoing flood adaptation (ie the future raising of the building).	N/A – The proposed works do not involve these development types. Future development will be subject of a separate application.			
	B5.10 Where proposed alterations and additions to existing residential accommodation is less than 40% of the gross floor area of the existing residential accommodation, and does not involve a	N/A – The proposed works do not involve residential development. Future development will be subject of a separate application.			



Clause and Controls	Compliance
net increase in the number of bedrooms, Council will consider a FFL lower than the flood planning level (FPL), but not lower than the existing floor level. Any additional flood risk must include mitigation measures to reduce the overall flood risk of the development.	
B5.11 Access from the building envelope to the public road is to have a minimum finished access level of:	N/A – The proposed works do not involve residential development. Future development will be subject of a separate application.
 The flood immunity of the connecting public road; or 	
The current day 1% AEP flood event level for the site.	
B5.12 Earthworks for driveways and access must satisfy the objectives of B3.D of the DCP and LEP.	N/A – Future development will be subject of a separate application.
Note: Impacts on local drainage and localised flooding should be considered and addressed. Driveways should be designed and constructed in accordance with Councils standard design drawings	
B5.13 Subdivision that creates the ability to erect additional dwellings is to indicate building envelopes above the FPL and comply with the requirements of B5.11, B5.12 and B5.14 of this Part	N/A – The proposed works do not involve subdivision. However, the proposed works will create the ability to erect dwellings above the FPL.
B5.14 If evacuation egress from residential accommodation, a commercial premises, an industrial premises, fill or development vulnerable to emergency response and critical infrastructure to flood free areas cannot be achieved via a route that is flood free in the current day 1% AEP flood event or is a low hazard flood area, an onsite flood refuge must be provided meeting the following criteria:	N/A – The proposed works do not involve these development types.
 Is located above the PMF level; 	
 Is intrinsically accessible to all people on the site, plainly evident and selfdirecting; 	
 Is accessible in sufficient time for all occupants with fail safe access and no reliance on elevators; 	
 Has unobstructed external access for emergency boats during flooding; 	
• Caters for the number of persons that could reasonably be expected on-site at any one time (approx. 2m2 per person);	
 Provides adequate shelter from the storm and has natural lighting and ventilation; and 	
• Contains sufficient clean water, a first aid kit, portable radio with spare batteries and a torch with spare batteries.	
Note: If a flood refuge is required, the DA must be accompanied by structural certification.	



Clause and Controls	Compliance
 B5.15 A site based overland flow report must be submitted for development located within a designated overland flow path. The purpose of this report is to demonstrate that the development: Will not result in material increase in flood level or flood hazard upstream, downstream or surrounding properties; and Will provide acceptable management of flood risk with appropriate development levels to ensure the safety of people 	Refer to the Flood Impact Assessment and addendum report (Appendix 11).
B5.C Development on land identified as floodway	
B5.16 Development other than farm buildings and/or fill is not supported on land identified as either low hazard floodway or high hazard floodway.	The proposed works are considered to be fill and should therefore be supported.
B5.17 Fencing in a floodway should not include non-permeable materials or fencing types that could restrict or redirect flood waters.	Details of fencing are not yet provided; however, it is noted that the material should be consistent with this control.
B5.D Application of performance based solutions	
 B5.18 The proposed land use is consistent with Figure BI, which shows suitable land uses by flood hazard category (as identified on a flood certificate) and the proposed development incorporates adequate measures to manage risk to human life from flooding, including: Evacuation access from an area affected by flooding to an area free of risk from flooding, taking into account any potential access restrictions; Warning times and procedures to make people aware of the need to evacuate; Consideration of the current and potential future occupants; and Consistency with the most recent Council adopted flood study or floodplain risk management study that has been undertaken for the site 	The proposed works will result in an improved flood condition of the site.
 B5.19 The proposed development will not increase the potential individual or cumulative flood impacts on other development or properties that are likely to occur in the same floodplain. In determining any potential increase in flood impacts, Council will consider: Future (in the year 2100) flood levels and/or velocities including, but not limited to the 5% AEP flood event, 1% AEP flood event and probable maximum flood (PMF) events; Loss of flood storage in the immediate floodplain; and Consistency with the most recent, Council adopted flood study or floodplain risk management study that has been undertaken for the site. 	The proposed works have been designed to avoid increasing flood impacts or adversely contributing to the potential individual or cumulative flood impacts on other development and properties.
B5.20 The proposed development must be compatible with the flood hazard category of the land	As above.



Clause and Controls	Compliance
(as identified on a flood certificate) or include mitigation measures or offsets to reduce the flood risk. In determining compatibility, Council will consider:	
• Whether there is other land on the site with lower flood risks where the development could be located;	
 Depth of flood inundation on the site and the adjacent land; 	
 Flow velocity on the site as well as upstream and downstream from the site; 	
• Suitability of design so that the development does not become isolated by high hazard floodwaters; and	
• Consistency with the most recent, Council adopted flood study or floodplain risk management study that has been undertaken for the site.	
B6 Williamtown RAAF Base - Aircraft Noise and Safety	
B6.A Site acceptability	
B6.1 When development is located within the 2025 ANEF, which is identified by Figure BP, it is classified into one of the following classifications through referencing Figure BL:	The proposed works are not of a development type identified within Figure BL.
 Acceptable – no design measures required to reduce aircraft noise, or 	
 Conditionally acceptable – design measures required, or 	
- An acoustic report is required for the following:	
- to support development that is classified as conditionally acceptable	
- to support subdivision of land and subsequent permissible development types by referencing Figure BL and Figure BM	
• Unacceptable – development is generally unacceptable. However, details submitted with a development application that demonstrate the following will be considered on a merit-based approach:	
- Development on a vacant pre-existing lot within the ANEF 25-30 noise contours that satisfies AS 2021 - Acoustics - Aircraft noise intrusion - Building siting and construction indoor noise requirements20	
- Replacement of a pre-existing dwelling in any of the ANEF noise contours satisfies the AS 2021 - Acoustics - Aircraft noise intrusion - Building siting and construction indoor noise requirements20	
- Development on land zoned B7 Business Park and adjacent to the Williamtown (Newcastle)	



Clause and Controls

Compliance

Airport

Note: Part D15 - Defence or Airport Related Employment Zone (DAREZ) provides site specific requirements for land zoned B7 Business Park and adjacent to the Williamtown Airport.

Figure BL: Building site acceptability based on ANEF Zone

Development type		Acceptable	Conditionally acceptable	Unacceptable
			ANEF Zone	
:	residential accommodation caravan parks	<20	20-25	>25
•	tourist & visitor accommodation	<25	25-30	>30
•	educational establishments	<20	20-25	>25
:	respite day care centres health services facilities	<20	20-25	>25
:	places of public worship entertainment facility information and education facility	<20	20-30	>30
•	commercial premises	<25	25-35	>35
:	general industry light industry	<30	30-40	>40
•	heavy industry	Acc	eptable in any ANEF Z	one

B7 Heritage This Part applies to development that is situated on land that contains a heritage item or within a The site does not contain a heritage item and is not within a heritage conservation area. heritage conservation area. **B8 Road Network and Parking B8.A Traffic impacts** B8.1 The statement of environmental effects (SEE) details: The proposed works do not propose any formalised parking. Access arrangements will remain as existing, with a widening of the access point. A Traffic Impact Assessment (Appendix 10) • car parking location, number and dimensions; prepared for the EIS has assessed the traffic implications of the proposed works on the existing access arrangements; road network and junctions. The Traffic Impact Assessment states: • traffic implications on the existing road network and junctions; Overall, the above assessment has demonstrated that the proposed importation of fill will have · street features, such as trees, footpaths and pipes; and



Compliance			
a minor and acceptable impact upon the surrounding road network, with traffic generated by these works being well within the capacity of Adelaide Street and the broader road network (Pacific Highway).			
The key element of this project will be the provision of safe and suitable temporary access for Truck and Dog combinations, which is proposed to occur via a new access point in the northwest corner of the site off Adelaide Street. Given the relatively low number of trucks required to access the site per day, and the short period for the importation of fill, no upgrades are proposed to Adelaide Street.			
The bulk earthworks shall see up to 50 heavy vehicles inbound and outbound a day however these shall be dependent upon the availability of material to be imported from various sites to provide for this fill. The existing access layout at Adelaide Street is considered appropriate however should be enhanced with "Trucks Turning Ahead "signage and the maintenance of vegetation at the access for the duration of the landfill project, anticipated to be 12 months.			
The temporary site access provides acceptable sight distances which satisfy the requirements for travel speeds of 50 km/hr along the site frontage. Sight lines also satisfy the requirements for a 70km/hr zone allowing for motorists accelerating in this location.			
Refer to above.			
Noted.			
The proposed works are not a development type listed in Figure BU.			
The proposal seeks to maintain the existing ingress/egress with minor improvements through widening and upgrading to be all weather access. Details of this widening to be provided prior to commencement of works.			



Clause and Controls	Compliance		
2. Determine the ingress/egress category by identifying whether that class is located on either an arterial road or local street and by referencing the number of parking spaces that are required, which is determined by B8.4			
3. Determine entry, exit and driveway separation widths by using the ingress/egress category			
B8.D Visitor parking & loading facilities	N/A – The proposed works do not include service areas, formal car parking or loading bays.		
B8.E Access to public transport for 20 or more dwellings	N/A – The proposed works do not involve residential development.		
C Development Types			
The proposed works are not a type of development specified in Section C of the DCP 2014.			
D Specific Areas			
The proposed works are not within an area specified in Section D of the DCP 2014.			



5. CONSULTATION

5.1. PORT STEPHENS CITY COUNCIL CONSULTATION

The proponent has met with Council to discuss the application and proposed development. The purpose of the meeting was a general outline of the development and EIS and timing around lodging the application.

5.2. COMMUNITY CONSULTATION

After lodgement of the application, community consultation will be undertaken in accordance with the EP&A Act. Section 4.64 of the EP&A Act states the EP&A Regulation contains exhibition and notification requirements for designated development. Clause 56 of the EP&A Regulation requires the consent authority to place the application and any accompanying information on public exhibition for a period of 30 days. A notice of the application must be published on the consent authority's website, and on the land to which the proposal relates and be given to adjoining owners and relevant public authorities. The notice is to contain information as set out in Clause 58 of the EP&A Regulation.

5.3. AGENCY CONSULTATION

Clause 56 of the EP&A Regulation requires that, for the purposes of Section 4.64 (1) (g) of the EP&A Act, at the same time as giving public notice, the consent authority must give written notice of a development application for designated development to such public authorities (other than relevant concurrence authorities or approval bodies) as, in the opinion of the consent authority, may have an interest in the determination of that development application.

5.4. DEPARTMENT OF PLANNING AND ENVIRONMENT

As part of the SEARs process, consultation has been carried out with the DPE, specifically the:

- Environment, Energy and Science Group
- o Water Group
- o Environment Protection Authority

Each agency provided their specific requirements for the proposed development in the SEARs. The EIS has been prepared in accordance with the SEARs.

5.5. EXHIBITION

After lodgement of the application, community consultation will be undertaken in accordance with the EP&A Act. Section 4.64 of the EP&A Act states the EP&A Regulation contains exhibition and notification requirements for designated development. Clause 78 and 79 the EP&A Regulation requires the consent authority to place the application and any accompanying information on public exhibition for a period of 30 days. A notice of the application must be published in a local newspaper, and on the land to which the proposal relates and be given to adjoining owners and relevant public authorities. The notice is to contain information as set out in Clause 78 of the EP&A Regulation.



6. ENVIRONMENTAL ASSESSMENT

6.1. LAND USE

6.1.1. Existing Environment

The site is located in Port Stephens LGA, between Heatherbrae and Raymond terrace in a mixed rural and urban area. Surrounding development includes the Raymond Terrace Waste Water Treatment Works site to the east, vegetated land to the west and a water filled quarry void to the south. Land to the west of Adelaide Street is grazing farmland and land to the north is residential land.

The site is elevated at the western boundary adjacent to Adelaide Street. Topographically, the site is extensively disturbed by previous vegetation clearing and extraction of gravel and sand. Drainage generally flows towards Grahamstown Drain and Windeyers Creek.

6.1.2. Potential Impacts

The proposed works have potential to create short term impacts on public access to the site and noise during construction. This has the potential to impact the current uses directly adjoining the site such as the nearby residential developments.

Once construction is complete, the proposal will result in positive impacts for the existing environment in that the land will be re-shaped from underutilised, low-lying land to a site that is suitable for future residential use. Following approval, a planning proposal for the rezoning of land from rural to residential zoning would be prepared and submitted to Council for assessment. Once the land is zoned for residential purposes, a DA will be prepared and submitted for a residential subdivision. The rezoning and subdivision development approvals will be separate to the proposed Waste Management Facilities or Works (Earthworks - fill).

6.1.3. Environmental Management Measures

Environmental management measures to minimise impact on land use are:

- Nearby residents and other stakeholders to be advised of proposed earthworks staging and timing on an ongoing basis,
- > Contact details of the site supervisor to be displayed on site at all times,
- > Access to be maintained to adjacent properties at all times,
- All mitigation measures identified in this EIS are to be implemented in a CEMP prepared in relation to the activity. Contractor to adhere to all Environmental Management Measures in the CEMP.

6.2. TRAFFIC AND ACCESS

6.2.1. Existing Environment

The vehicular access to the site is from the existing unsealed driveway off Adelaide Street, which was previously used by the quarry. Due to the nature of the site, there is no formal parking within the site. There is ample capacity onsite for parking in managed vegetated areas throughout the site.

Adelaide Street provides the link between Raymond Terrace and the Pacific Highway network and carries some regional traffic beyond Raymond Terrace in the Port Stephens LGA. The local road network is utilised by most vehicle sizes including B-double combinations. Adelaide Street is single lane (each travel direction) road with sealed shoulders and grass verges. The signposted speed is 70km/h along Adelaide Street and separate to the road there is an off-road shared pathway for pedestrian and cyclists along the western side of Adelaide Street.



6.2.2. Potential Impacts

There will be impacts to during the estimated 12-month period of earthworks. The potential impacts are outlined below.

Construction traffic

Equipment required for the project will include:

Infill

a. (50) tippers and dogs entering the site and exiting the site per day 5 1/2 days per week with no work on Sundays or public holidays.

b. Bulldozer and excavator to be delivered to the site at the start, to be stored on site and removed at the end of the fill period.

<u>Compacting of driveways with some minor earthworks at the stormwater drainage lines at the western side of the site:</u>

- a. Profile Compactor
- b. Track Loader

Site levelling:

- a. Two D9 Track Type Tactor.
- b. 30 T Excavator.

Separate to the movement of heavy vehicles into and from the site at the start and finish of each stage, the general operation of the site fill will see up to 50 truck (tipper) and dogs access the site each day (50 inbound, 50 outbound) with these movements being spread throughout the day.

Truck movements would typically occur during normal construction hours (i.e. 7am-6pm Monday-Friday, 8am to 1pm Saturday) giving an average of 5 trucks per hour entering and exiting the site (5 inbound and 5 outbound). There may be periods where additional heavy vehicles shall access the site however it is considered that these additional movements would be minimal and are offset by reduced truck movements at other times throughout the day.

Adelaide Street accessway

Access to the site shall be provided via a temporary access in the northwest corner of the site. The site historically had an unsealed access off Adelaide Street which provided access to the sand quarry operated by ROCLA. The temporary access shall be located more than 100m into the 50km/hr zone with road users having sufficient distance to have reduced speed. The driveway will be wide enough to allow for the two-way movement of truck and dog combinations to ensure free flow into the site with no delays for entering vehicles. Due to the traffic demands for the project and the desire not to drive through the centre of Raymond Terrace, this access shall operate as a right in left out only for the heavy vehicles associated with the land fill operations whilst all movements shall be required for the low number of light vehicles associated with staff movements. Further details of the traffic assessment can be found in **Appendix 10**.

The operation of the access as a right in left out only sees no demand for heavy vehicles to interact with the pedestrian crossing to the north of the subject site.

6.2.3. Environmental Management Measures

Environmental management measures to minimise impact on traffic and access are:

The temporary intersection of Adelaide Street and the site access is acceptable for the low volume of trucks accessing and exiting the site. Road safety will be enhanced with installation of "Trucks Turning Ahead" signs for the duration of the landfill project (12 months). These signs would be provided in advance of the access for drivers travelling in both directions as well as on Kent Street.



- Regular trimming of vegetation at the site access and within the sight triangles can enable visibility to be maintained for all road users.
- > Prepare a drivers' code of conduct that include the following instructions
 - Ensure that heavy vehicles do not enter Raymond Terrace or transit through
 - Approach the site from the south and depart to south and do not travel north
 - o Provide standard construction hours or vehicle movements to abide by
- Truck shakedown facility shall be incorporated into the exit to prevent material being tracked onto Adelaide Street.
- Increase width of Adelaide Street accessway.

6.3. NOISE AND VIBRATION IMPACTS

6.3.1. Existing Environment

Main sources of ambient noise within the immediate area include vehicles, air conditioners, recreational activities associated with the shared pathway, pacific highway and manufacturing type noises originating from the nearby industrial park (in Heatherbrae). Broader noise impacts include traffic along surrounding roads, small residential power tools, pets and wildlife. A number of sensitive land uses are located in proximity of the site. The nearest residents are located at (refer to Figure 6.3.1):

- R1 Residents located to the west on the opposite side of Adelaide Street. The receivers are more than 60m from the western site boundary.
- R2 Residential properties to the north along Meredith Crescent, along the northern site boundary. (Figure 6.3.1).



To the south is the quarry void that is to be redeveloped (separate application).

Figure 6.3.1: Nearest Residents and Noise Logger Position (Source: Acouras consultancy)

6.3.2. Potential Impacts

Construction Noise

The proposed activity would involve the use of construction plant and equipment discussed in Section 3.6. Mobilisation of heavy construction vehicles may also generate additional road traffic noise on the external road network. Construction activity has a low potential to generate noise noticeable at nearby



noise sensitive receivers due to the limited number of receivers located near the proposed activity. The works would be undertaken during daytime hours and therefore impacts on any nearby receivers would be minimal. Mitigation measures would also be implemented to minimise any potential noise impacts.

Vibration impacts may be present with the filling works proposed. It is considered that the vibration would be felt by close receivers and would only be during the daytime construction hours.

There may be some additional road traffic noise given that only approximately 50 vehicle movements per day are expected, this noise is not expected to be significant.

A noise assessment has been prepared in by the Acoustic consultant to assess the typical noise level of construction (no mitigation) and noise level (with mitigation) for the proposal. The mitigated noise levels are outlined below.

Description of Noise Source ²	# of Sources	Sound Pressure Level, L _p dBA				
		5m	10m	20m	40m	80m
Excavator (30T)	1	77	71	65	59	53
Bulldozer	1	78	72	66	60	54

Phase 1: Typical Noise Level of Construction Equipment (with mitigation)

Phase 2: Typical Noise Level of Construction Equipment (with mitigation)

Description of Noise Source ²	# of Courses	S	Sound Pressure Level, L _P dBA					
Description of Noise Source ²	# of Sources	5m	10m	20m	40m	80m		
Compactor	1	83	77	71	65	59		
Loader (wheeled)	1	75	69	63	57	51		

Phase 3: Typical Noise Level of Construction Equipment (with mitigation)

Description of Noise Source?	# of Sources	Sound Pressure Level, L _p dBA					
Description of Noise Source-	# of sources	5m	10m	20m	40m	80m	
Front end loader	1	83	77	71	65	59	
Excavator (30T)	1	77	71	65	59	53	

Figure 6.3.2: Noise assessment provided by Acoruras Consultancy.

Mitigation techniques employed in the above modelling include distance, screening, enclosure and silencing.

6.3.3. Environmental Management Measures

Environmental management measures to minimise noise impacts:

General:

- > Consult with surrounding residents and other stakeholders
- Toolbox and induction of personnel prior to shift to discuss noise control measures that may be implemented to reduce noise emissions to the community
- > Contact details of the site supervisor to be on site at all times
- > Regularly inspect and maintain equipment
- Work will occur during standard construction hours (7am to 6pm Monday to Friday, 8am to 1pm Saturday and no work on Sundays or public holidays). Where work occurs outside these hours consultation will be required with adjoining residences depending on the nature of the work
- Consider noise screens or similar noise dampening options where numerous complaints are received.



- Construction Vibration
- In all cases, where the vibration levels are found to exceed the relevant criteria, alternative construction methods should be considered to reduce the impact. This may include the following strategies:
 - Prior to start of construction work and after the construction activities, prepare a dilapidation report on the state of the adjacent existing buildings.
 - During the construction, consider conducting vibration monitoring next to the sensitive buildings to determine when exceedances that may take place.
 - When exceedances occur/are likely to occur: o Use smaller equipment This will reduce the level of impact, but will need longer duration. The number of smaller equipment can be increased to compensate for the longer duration.
 - Allowance for respites When human comfort levels are exceeded, breaking up the longer exposure periods to allow for rest will reduce the degree of impact.
- Construction vehicles:
- Construction vehicles will access (enter/exit) the site on Adelaide Road. Drivers are to be informed of designated vehicle routes, parking locations and other relevant practices such as minimising the use of engine brakes, and no extended periods of engine idling.
- Schedule deliveries during the nominated hours only.
- Nominate an off-site truck parking area, away from residential street, for trucks arriving prior to gates opening. No trucks are to wait outside the site before the gates open.
- Provide on-site truck waiting areas away from residences and other sensitive land uses. Where possible provide only forward truck movements to avoid engaging reversing alarms.
- Prepare Construction Traffic Management Plan (prepared by others).
- Community Consultation:
- Strategies to inform the community of the various ways they could contact the project staff if they have queries, concerns or complaints. This may include a 24 hour complaints phone line, project email and website addresses.
- Procedures to notifying residents and occupants of other sensitive land uses of forthcoming works likely to affect their noise amenity (such as letterbox drops).
- The Project Manager to maintain a register of complaints and any corrective actions taken. The register must record, but not necessarily be limited to:
 - The date and time of the complaint;
 - The means by which the complaint was made;
 - Any personal details of the complainants that were provided, or if no details were provided, a note to that affect;
 - Nature of the complaints;
 - Any action(s) taken by the applicant in relation to the compliant, including any follow up contact with the complainant; and
 - If no action was taken by the applicant in relation to the complaint, the reason(s) why no action was taken.
- When complaints are received, implement a long/short term noise monitoring strategy and analysis of the results to improve the management plan, so that best practice noise control measures are continually met for the duration of the project.

6.4. SOILS AND GEOLOGY

6.4.1. Existing Environment

Soils and Sediments

With reference to the 1:100,000 scale Soil Landscapes of Newcastle Sheet (Matthei, 1995) the soil landscape is Disturbed Terrain characterised by level plain to hummocky terrain, extensively disturbed by human activity, including complete disturbance, removal or burial of soil. Local relied and slopes are highly variable. Landfill includes soil, rock, building and waste materials.

The Port Stephens Acid Sulfate Soils Map (Sheet ASS_02) shows the site to be within areas mapped as Class 2 and Class 4 Acid Sulfate Soils (ASS). Class 2 areas are likely to locate ASS and



development consent is required for works below the natural ground surface. Class 4 areas are likely to locate ASS, and consent is required for works more than 2 metres below the natural ground surface or works which the water table is likely to be lowered more than 2 metres below natural ground surface.

A Preliminary Site Investigation was prepared to consider the existing site conditions. The Investigation found the following:

- The site is mapped as containing acid sulfate soils Class 2 and 4. With reference to the 1:25,000 scale Williamtown Acid Sulfate Soils Risk Map – Edition 2, the subject land lies within the map class description of No Known Occurrence.
- The property is not reported as being subject to regulation in relation to environmental impacts, as documented in the NSW EPA / OEH public registers.
- A WorkCover NSW Authority data search of records relating to historical storage of dangerous goods on the site revealed no records pertaining to the site were held.
- A conceptual site model (CSM) was derived for the site which identified potential contaminating sources that may have occurred and evaluated the likelihood for relevant exposure pathways to be complete.

Contamination

The Investigation found there is a low potential for contamination to be present on-site given previous and current land use of the site and adjacent properties.

6.4.2. Potential Impacts

The proposed earthworks will result in the further disturbance of soils throughout the site. A Conceptual Site Model has been developed and is provided within the Preliminary Site Investigation (**Appendix 9**). The purpose of the CSM is to assess plausible pollutant linkages between potential contamination sources, migration pathways and receptors. Potential contamination sources, exposure pathways and human environmental receptors that were considered for this assessment are outlined in Table 6.4.2 below:

Table 6.4.2: Preliminary	y Conceptual Model
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Site Area	Potential Sources	Potential Contaminants	Media	Sensitive Receptor	Migration & Exposure Pathways	Potential Risk of Complete Exposure Pathway
Entire site	Fill of unknown origin and quality placed at the site, migration of contamination onto the site from adjoining lands (i.e. former quarry site).	HM, TRH, BTEX, VOC, PAH, OCP/ OPP, PCB, PFAS, and asbestos.	Soils Groundwater Air/Soil Vapour LNAPL/DNAPL (if present)	Future site users, site workers (construction and maintenance), offsite residents, offsite basement users (if present). Onsite vegetation, Grahamstown Drain (approx. 70m) and Windeyers Creek (approx. 470m).	Seepage into the subsurface soils, and groundwater. Dermal Contact Ingestion Inhalation	Medium (should contamination be present)

The Preliminary Site Investigation (**Appendix 9**) concludes there is a low potential for relevant exposure pathways to be present on-site given previous and current land use of the site and adjoining properties.

A Detailed Site Investigation carried out for the rehabilitation of the quarry void has determined that the site has not been contaminated by the historic or current usage of the site.

The proposed earthworks will regrade the landform in the northern part of the site and involve a combination of cut and fill. Excavation has the potential to expose contaminates beneath the surface however the risk of this occurring is low based on the outcomes of the Preliminary Site Investigation. Excavation also has the potential to expose acid sulfate soils. Again, the risk is considered low based on the information available.

The placement of fill has the potential to create a buffer between natural surface materials and the future development of the site, however the as the risk of contamination within the natural surface materials is low, this matter does not require further consideration.

6.4.3. Environmental Management Measures



Environmental management measures to minimise impact on soils and geology:

- Undertake site walkover inspection after vegetation is cleared to allow adequate visual assessment of the existing ground surface of the site prior to the commencement of construction works;
- Any material to be removed from the site (including virgin excavated natural materials (VENM) must be classified for ff-site disposal in accordance with the EPA (2014) Waste Classification guidelines;
- Any material being imported to the site should be assessed for potential contamination in accordance with EPA NSW Guidelines;
- Oils, fuels and chemicals used during construction will be stored in a locked bund capable of holding 110% of the capacity of the containers within;
- > Equipment will be serviced and maintained to minimise potential for loss of fluids;
- Implement Bulk Earthworks and Erosion Control Plans in accordance with the Managing Urban Stormwater: Soils and Construction "The Blue Book" (4th edition, Landcom 2004);
- > Utilise existing cleared areas of the site as the construction compound and stockpile area(s);
- The CEMP will include details on waste management and provide a spill management procedure.

6.5. AIR QUALITY & DUST

6.5.1. Existing Environment

Table 6.5.1 below is a summary of the rainfall collected by the Bureau of Meteorology for Raymond Terrace (Kinross) and temperatures collected for Williamtown RAAF (approximately 10.2km away). In summer the mean daily temperatures average around 28°C. In winter mean daily temperatures average around 18.5°C. Rainfall is generally higher in summer and spring.

Table 6.5.1: Summary of the climate in Raymond Terrace (2020-2021) (Bureau of Meteorology (accessed 23/02/2021))

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	ОСТ	NOV	DEC
Rainfall	(mm)											
Mean	9.7	12.1	5.5	5.2	5.8	7.44	14	5.0	4.7	11.3	5.9	12.6
Temperature (°C)												
Mean	28	28.1	26.1	24.9	19.7	18.5	17.7	18.9	23.2	24.8	27.0	26.5

Urban activities in the local area affect air quality, generally through use of vehicles and power tools all year and wood fires utilised during winter months. The site is surrounded by local roads where public transport and traffic on these roads affect air quality through vehicle emissions.

6.5.2. Potential Impacts

The proposed earthworks have the potential to generate dust from excavation and the importation, storage and placement of fill on-site. The main air pollutant of concern is anticipated to be dust / particulate matter emissions generated from the various earth-moving and handling operations. Based on discussions with Raymond Terrace Parklands, sources / activities that have the potential to generate fugitive dust emissions include:

- > Handling of the cut material, including loading and unloading operations.
- > Unloading of imported ENM and VENM material on the development site.
- Fill activities on the southern side portion of the development site to achieve the required flood planning level of 5.7m AHD.
- > Wind erosion emissions from the temporary stockpiles located within the development site.



Particulate emissions for the various size fractions – total particulates (TSP), particulate matter less than 10 microns (PM10) and particulate matter less than 2.5 microns (PM2.5) were estimated using approved emission factors for the above operations. Emissions were based on an annual material handling rate of 100,000 m 3 of material (40,000m³ cut to fill plus 60,000m³ imported). Impacts from the above activities were predicted at the nearest sensitive receptors which are discussed in the following section. It is anticipated that the project would take approximately 12 months to complete.

To predict impacts from the cut and fill operations on the surrounding environment, a set of sensitive receptors representing both residential and non-residential developments were identified for the assessment. The model predicted incremental (i.e. project only) and cumulative (incremental + background) particulate concentrations for the various size fractions along with deposited dust levels were determined across each of these receptors and compared against the relevant assessment criteria to assess compliance.

Sensitive receptors selected for this assessment are visually illustrated in Figure 4 and tabulated in Table 1 of the Air Quality Assessment in **Appendix 5**. A review of potential impacts in the context of ambient air quality demonstrates that the project operations do not contribute to additional exceedances of the assessment criteria for both the 24-hour average PM10 and PM2.5 concentrations.

The proposal will not significantly impact climate. Climate change has potential to result in warmer temperatures, increased sea level and increased storm intensity.

Particulate emissions from various activities were estimated and modelling was conducted using the CALPUFF dispersion model. Impacts from the operations at the project site were predicted at the nearest sensitive receptors along with inclusion of existing background concentrations.

Modelling shows that all the assessed pollutants are well below the respective assessment criteria across the entire study area. Moreover, it is evident from the modelling that contributions from the operations at the project site to the overall air quality concentrations is very low.

As such, it can be concluded that cut and fill operations at the site are not expected to have an adverse impact on the existing air quality levels, and therefore, are not considered to be a critical issue with respect to air quality matters (**Appendix 5**).

6.5.3. Environmental Management Measures

Environmental management measures to minimise impact on air quality, climate and climate change are:

- > Maintain vehicles and machinery to minimise emissions
- General mitigation measures
 - o Identify dust-generating activities and inform site personnel about location
 - Identify adverse weather conditions (dry and high wind blowing from dust source to sensitive receptors) and halt dust emitting activities if visible dust impacts are identified at sensitive receptors.
- > Handling of soil and structural fill material
 - Minimise drop height for material handling equipment.
- Wind generated dust from temporary stockpiles and exposed areas
 - Apply watering through water trucks or sprinklers.
 - Progressive staging of dust generating activities throughout the day to avoid concurrent dust emissions.
 - Minimise exposed area if possible.
 - Minimise amount of temporary material stockpiled if possible.
- Wheel generated dust during hauling
 - o Restrict vehicle movement to haul routes that are watered regularly.
 - Cleaning of haul roads.
 - Speed restrictions.

6.6. HYDROLOGY



6.6.1. Existing Environment

The subject site is located on the Windeyers Creek low-lying floodplain, which is upstream of the Hunter River. The adjoining sewage treatment is east of the subject site and was constructed to be above the Windeyers Creek Floodplain. The Hunter River floodplain has a levee to protect the flood plains from flood events.

The site is located within the low-lying floodplain area bounded by Adelaide Street and the Pacific Highway and provides a storage area for flooding of both Windeyers Creek and the Hunter River. Windeyers Creek is characterised by wide, low-lying swamp areas where ground levels are typically 1.0-1.5 m AHD. Windeyers Creek separates into two branches. The northern creek branch has been realigned into a well-defined channel (Grahamstown Drain) running along the north and west boundaries of the site.

6.6.2. Potential Impacts

A flood impact assessment has been prepared for proposed earthworks to determine peak flood levels and flood behaviour at the site for the 10% Annual Exceedance Probability (AEP) and 1% AEP design events (**Appendix 11**). An XP-RAFTS hydrologic model and a TUFLOW hydraulic model were developed for the assessment.

Flood behaviour at the site for the 10% AEP and 1% AEP design flood events has been determined for existing and post-development scenarios, identifying that there will be negligible off-site peak flood level impacts associated with filling the site in this manner. This would also be the case for Hunter River flood events.

6.6.3. Environmental Management Measures

Environmental management measures to minimise impact on water quality and flooding:

- Oils, fuels and chemicals will be stored in a locked bund within the construction compound capable of holding 110% of the capacity of the containers within;
- > Equipment will be serviced and maintained to minimise potential for loss of fluids;
- Implement Erosion and Sediment Control Plans in accordance with the Managing Urban Stormwater: Soils and Construction "The Blue Book" (4th edition, Landcom 2004);
- > Utilise existing cleared areas of the site as the construction compound and stockpile area(s);
- Filling of the site is to be undertaken in accordance with the concept fill plan as prepared by BMT.

6.7. FLORA AND FAUNA AND BUSHFIRE

6.7.1. Existing Environment

The subject land supports 5.48ha of native vegetation and 1ha of slashed / exotic vegetation. Native vegetation within the overall study area varies in composition and condition as a result of previous land uses, with native vegetation covering 18.83ha of the 44.06ha total area. Exotic vegetation was restricted to the access routes throughout the site, particularly the access road to the quarry void, underneath power lines and along the edge of Grahamstown Drain.

The following PCTs were assessed as present within the subject land:

- PCT 1717 Broad-leaved Paperbark Swamp mahogany Swamp Oak Saw Sedge swamp forest of the Central Coast and Lower North Coast.
- PCT 1071 Phragmites australis and Typha orientalis coastal freshwater wetlands of the Sydney Basin Bioregion
- Exotic / Slashed Vegetation.

The PCTs are mapped in Figure 2.3.4.

The site is partially affected by Bushfire Prone Land with the centre of the quarry void not being identified as bushfire prone land. The proposed filling works are located partially within the bushfire prone land. The proposed activity is not a special fire protection purpose pursuant to the *Rural Fires Act* 1997 or Rural Fires Regulation 2013 and does not require a bushfire safety authority.



A search of the EPBC Protected Matters Search Tool on 24 February 2021 (10km buffer) (**Appendix 5**) identified the following:

- > 1 Wetland of International Importance
- ➢ 5 Listed Threatened Ecological Communities
- > 75 Listed Threatened Species
- ➢ 63 Listed Migratory Species.

The EPBC Act Protected Matters report states that no World Heritage Properties or National Heritage Places are located within a 10km radius of the site.

The report has identified one (1) Wetland of National Environmental Significance (Hunter Estuary Wetlands) within a 10-20km proximity to the site. The Kooragang component of the Hunter Estuary Wetlands Ramsar site is located in the estuary of the Hunter River, approximately 7km north of Newcastle on the coast of New South Wales. The Hunter Wetlands Centre Australia is located in the Ironbark Creek Catchment in the suburb of Shortland, 12km northwest of Newcastle and 2.5km from the Kooragang component of the Ramsar site.

6.7.2. Potential Impacts

A total of 18.83ha of native vegetation was recorded within the study area, which is a total of 44.06ha in size. The subject land was identified for the proposed development, in consideration of the biodiversity values known and likely to occur within the study area. This resulted in minimisation of biodiversity impacts to the removal or modification of 5.47ha of native vegetation and associated habitat, of which 4.03ha is in low-moderate condition, represented by the Swamp Sclerophyll Forest / Coastal Swamp Sclerophyll Forest EEC (5.35ha) and the Freshwater Wetlands EEC (0.12ha).

Threatened flora and fauna were not recorded within the subject land during the field investigation undertaken in accordance with the BAM. However, due to project timeframe constraints, habitat for several threatened species was assumed within the subject land.

Measures to mitigate potential indirect impacts to biodiversity values are detailed in Section 4.0 of the BDAR. Given the proposal is unlikely to have a significant residual impact on any EPBC Act listed fauna species, referral to the Commonwealth Minister for the Environment is not deemed necessary for the current proposal (refer to Section 8.1 and Appendix 4 of the BDAR for further details). It is not anticipated that the proposed development will impact any candidate species or ecological communities at risk of Serious and Irreversible Impact as outlined in Section 10.2 of the BAM (refer to Appendix 3 of the BDAR for further details).

Residual impacts to native vegetation will require retirement of 81 ecosystem credits and 1289 species credits in accordance with the Biodiversity Offsets Scheme, as outlined in Table 25 and Table 26 of the BDAR.

6.7.3. Environmental Management Measures

- Residual impacts to native vegetation will require retirement of 81 ecosystem credits and 1289 species credits in accordance with the Biodiversity Offsets Scheme, as outlined in Table 25 and Table 26 of the BDAR (Appendix 5).
- Environmental management measures to minimise impact on flora and fauna are presented in Table 12 of the BDAR (Appendix 5).

6.8. HERITAGE – ABORIGINAL

6.8.1. Existing Environment

An Aboriginal Cultural Heritage Due Diligence Assessment (**Appendix 12**) prepared in relation to the proposal found that based upon the historic land use assessment and the site inspection, the study area has been highly impacted by at least 40 years of sandmining. The potential for items of Aboriginal heritage to remain in- situ is very low. There are no constraints to the rezoning, given that the likelihood of sites of significance remaining within the study area being low.



Consultation occurred with Richard Kime of the Worimi Local Aboriginal Land Council (LALC) (**Appendix 12**). The LALC response states:

Upon inspection on 251 Adelaide Street, Raymond Terrace with Angela on the 15th May 2016 there was no sightings of cultural significance onsite. With the area being heavily disturbed by past sandmining there may be a small possibility of artefact sightings on the outskirts of the area once excavation takes place.

6.8.2. Potential Impacts

The Aboriginal Cultural Heritage Due Diligence Assessment and consultation with the LALC confirmed the planning proposal will not impact on places or items of Aboriginal heritage.

6.8.3. Environmental Management Measures

Environmental management measure to minimise impact on Aboriginal heritage are:

- Any works proposed outside the activity site (such as drainage works and creek rehabilitation / stabilisation) are to be subject of a separate assessment,
- Proceed with caution. In the event that an Aboriginal object or objects are uncovered during the proposed construction works, ground disturbance works should cease within 20 metres of the object and an archaeologist, Heritage NSW and the local Aboriginal parties should be contacted to determine an appropriate management strategy,
- Contractors are aware that it is an offence under Section 86 of the National Parks and Wildlife Act 1974 to harm or desecrate an Aboriginal object unless that harm or desecration is the subject of an Aboriginal Heritage Impact Permit,
- The works may be undertaken at the specified locations provided that the proposed activities remain as discussed in this document,
- In the unlikely event that human skeletal material is uncovered during the proposed construction works, all works should cease within 20 metres of the skeletal remains. Should the remains be verified as human, the NSW Police and Heritage NSW will be contacted immediately. No works will proceed within the vicinity of the skeletal remains until an appropriate course of action has been determined in consultation with NSW Police, Heritage NSW and Aboriginal parties (if the remains are identified as Aboriginal).

6.9. HERITAGE – NON-ABORIGINAL

6.9.1. Existing Environment

The State Heritage Inventory was searched on 24 February 2021. The site is not listed as an item of State Significance on the State Heritage Register. In additional to State Heritage Items, local heritage registers were searched and found various heritage items within Raymond Terrace. There are two local heritage items in close proximity to the subject site. The first is the item is "Kia-ora", including the mulberry tree beside the driveway and is approximately 300m north of the subject site. The second item is "Kinross," including stone shed and landscaping setting.

6.9.2. Potential Impacts

The proposed activity is contained wholly within the site and does not impact either local heritage item due to the distance between the subject site. There are no impacts to non-Aboriginal heritage as a result of the proposed activity.

6.9.3. Environmental Management Measures

Environmental management measures to minimise impact on non-Aboriginal items are:

If during the course of proposed works previously unknown historical archaeological material or heritage items are discovered, all work in the area of the item(s) shall cease immediately and Heritage Division, Heritage NSW and a qualified heritage consultant will be consulted, in accordance with Section 146 of the *Heritage Act 1977*, to determine an appropriate course of action prior to the recommencement of work in the area of the item.



6.10. VISUAL IMPACTS

6.10.1.Existing Environment

The proposed activity involves the regrading of land to facilitate future residential development. The site is buffered from public view through the existing vegetation and setbacks from the Adelaide Street frontage and residential land to the north.

The proposed works will occur over an approximate 1-year period and will have up to 50 heavy vehicles attend the site per day and additional machinery for site levelling once the quarry has been filled to a suitable level.

6.10.2. Potential Impacts

The proposed activity will occur within the existing cleared and disturbed areas of the site. The works will be partially visible from Adelaide Street. The nature of the proposal is such that the improved landform and associated works will have a positive visual impact on the site. There will be short term adverse visual impact during construction as a result of construction equipment and vehicles.

A desktop visual impact assessment has been prepared and considered below. The sensitivity of the viewpoint will be assessed and the magnitude of the proposed development for the viewpoint.

Viewpoint	Assessment	Visual Impact
Adelaide Street	Sensitivity is considered to be low. The visual landscape is not going to significantly alter the existing streetscape. Short-term construction vehicles movements are considered to be negligible. The retention of vegetation on-site will continue to provide a visual buffer. The magnitude of the development is considered to be negligible as the works are between 0-2.0m above ground level and set back from the Adelaide Street Frontage.	Low Impact
Meredith Crescent Residencies	Sensitivity is considered to be low. The visual landscape is not going to significantly alter the existing streetscape. Short-term construction vehicles movements are considered to be negligible. The retention of vegetation on-site will continue to provide a visual buffer. The magnitude of the development is considered to be negligible as the works are primarily below ground level and set back from the Adelaide Street Frontage.	Low Impact
Waste Water treatment plant	Sensitivity is considered to be negligible to the waste water treatment plant. The usage of the site is limited to Hunter Water technicians and similar works. The magnitude of the development is moderate due to the change of the quarry formation and potential site usage.	Moderate – Low Impact
Pacific Highway	Sensitivity is considered to be low. The visual landscape is not going to significantly alter the existing streetscape. Short-term construction vehicles movements are considered to be negligible. The retention of vegetation on-site will continue to provide a visual buffer. The magnitude of the development is considered to be negligible as the works are primarily below ground level and set back from the Adelaide Street Frontage.	Low Impact

6.10.3. Environmental Management Measures

Environmental management measures to minimise impact on the visual environment are:

- Maintain the construction site by removing waste materials, parking in designated areas and storing construction equipment appropriately,
- > Remove all waste and material once construction is complete,

6.11. SOCIAL AND ECONOMIC

6.11.1.Existing Environment



Australian Bureau of Statistics (ABS) website <u>www.stat.abs.gov.au</u> (accessed 24 February 2021) indicates Raymond Terrace has a population of 12,820 being 48.7% male and 51.3% female. The median age of residents is 36 and the median weekly household income is \$1,102.00.

6.11.2. Potential Impact

The proposed filling will have short term impacts on traffic along Adelaide Street during the construction phase. A traffic assessment was undertaken and found that the impact to Adelaide Street would be negligible with the signage recommendations and the current traffic counts.

The amenity and environmental considerations associated with the social effects of the proposed filling have been discussed in Section 6 of this report, this includes the visual, traffic, noise and air quality impacts.

The economic effects are identified in three main categories. Direct employment could be an economic impact through the project management and construction vehicle drivers. The contractors of the site will make contributions into the local economy through services and hiring equipment. Lastly is the long-term investment as the project is expected to result in the delivery of new residential land over a ten-to-20-year period resulting in positive social and economic impacts.

6.11.3. Environmental Management Measures

Environmental management measures to minimise impact on social and economic factors are:

- > Preparation of a project consultation and or notification strategy prior to construction.
- > Contact details of the site supervisor to be on site at all times.

6.12. WASTE

6.12.1.Existing Environment

Waste generation at the subject site is limited due to the site no longer being utilised as a quarry and only on-site monitoring occurring on the site.

6.12.2. Potential Impacts

The proposed vehicles and contractors on-site could increase waste generation throughout the site.

Inadequate treatment of waste generated during construction of the facility has the potential to impact the environment through the contamination of soils (contamination from spills), water (sedimentation, spills) and air (emissions, dust).

6.12.3. Environmental Management Measures

Environmental management measures to minimise impact on waste are:

- All construction waste generated by the proposal will be classified in accordance with Waste Classification Guidelines Part 1: Classifying Wastes (NSW EPA, 2014),
- Construction waste material is not to be left on site once the works have been completed by a licensed contractor,
- Working areas are to be maintained, kept free of rubbish and cleaned up at the end of each working day, and
- > Provide waste bins in suitable areas that are managed and emptied regularly

6.13. MANAGEMENT PLANS

A CEMP will be prepared by the preferred contractor that incorporates the mitigation measures identified in this EIS. The CEMP will include a stormwater management plan, groundwater management plan, erosion and sediment control plan, construction traffic management plan and waste management plan. The CEMP will also identify measures to engage and maintain communication with those who may be affected by construction activities and to manage any complaints that are received.


An Operational Management Plan will be prepared and include a Waste Management Plan and relevant operational measures identified in this EIS, in particular those relating to the minimisation of contamination, waste, noise, traffic impacts and dust.

6.14. CUMULATIVE ISSUES

The proposed earthworks are unlikely to occur at the same time as the proposed backfilling of the decommissioned quarry or at the same time as any other known major developments in the area and as such there is unlikely to be cumulative impact of several major constructions at the same time.

Traffic and access impact will be minor as the sequence of construction over 1 year will spread out the vehicle movements on a road that is capable of supporting the additional vehicle movements with some upgrades to the Adelaide Street accessway and vehicle turning signs.

Soils and dust will be managed in the site through the monitoring of movements throughout the site. Given the construction time period the increase of soils through the site will increase at a manageable rate and is unlikely to cause cumulative issues during the construction phase. Leading into flooding and stormwater impacts which when filled in accordance with the conceptual plan will negate adverse flooding impacts both for the site and surrounding floodplains and catchments.

Noise and vibrations during filling may impact on surrounding residents, however noise can be managed with appropriate management measures.

Waste management will be required during construction and operation and can be appropriately managed.

There is unlikely to be significant cumulative issues as a result of the proposed development.

6.15. OBJECTS OF THE ENVIRONMENTAL PLANNING AND ASSESSMENT 1979

The objects of the EP&A Act have been considered throughout the EIS and are addressed in Table 6.15 below:

Object	Response
(a) to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources.	The site is currently unsuitable for residential development due to the existing flood levels. The proposed earthworks will enable future residential development (subject to rezoning).
(b) to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment.	The EIS presents potential environmental impact of the proposal and concludes the impact will not be significant. The proposal will have a positive social and economic impact through additional residential land.
(c) to promote the orderly and economic use and development of land.	The proposed development is for the filling of a site that, if not for being flood prone land, is otherwise suitable for residential development.
(d) to promote the delivery and maintenance of affordable housing.	The proposed development will facilitate residential land release within an existing serviced area that is close to schools, employment and shops.
(e) to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats.	The proposed development will not have a significant impact on threatened and other species of native animals and plants, ecological communities and their habitats.
(f) to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage).	The proposed development will not impact on Aboriginal and non-Aboriginal heritage.
(g) to promote good design and amenity of the built environment.	The development will include a revised driveway entrance into the site which will provide safe passage into the site.
(h) to promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants.	N/A.

Table 6.15: Objects of EP&A Act



(i) to promote the sharing of the responsibility for	Noted.
environmental planning and assessment between the	
different levels of government in the State.	
(j) to provide increased opportunity for community	The EIS will be exhibited with opportunity for
participation in environmental planning and	community to comment on the proposal.
assessment.	

6.16. ECOLOGICALLY SUSTAINABLE DEVELOPMENT

The principles of Ecologically Sustainable Development (ESD) are defined in Section 6(2) of the *Protection of the Environment Operation Act 1991*. ESD and how it has been considered in this EIS is presented in Table 6.16.

Table 6.16: Ecologically Sustainable Development Principles **ESD** Principle and Programme Comment the precautionary principle-namely, that if there are The proposed development has sought necessary threats of serious or irreversible environmental damage, information, including specialist advice, to have an lack of full scientific certainty should not be used as a understanding of potential environmental impacts. reason for postponing measures to prevent Environmental mitigation measures have been environmental degradation. proposed to ameliorate potential impacts to the In the application of the precautionary principle, public environment. and private decisions should be guided by: (i) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and (ii) an assessment of the risk-weighted consequences of various options inter-generational equity-namely, that the present Positive impacts of the filling of the low lying land are generation should ensure that the health, diversity and expected where the additional land can be utilised for productivity of the environment are maintained or future residential purposes (subject to rezoning) and enhanced for the benefit of future generations will be a benefit to future generations. Environmental impacts of the development have been minimised through appropriate design and environmental mitigation measures. conservation of biological diversity and ecological Tree removal impacts have been addressed and integrity-namely, that conservation of biological appropriate offsetting measures proposed. diversity and ecological integrity should be a fundamental consideration improved valuation, pricing and incentive Environmental attributes of the site have been mechanisms-namely, that environmental factors identified throughout this EIS. Impact to the should be included in the valuation of assets and environment has been avoided, where practicable, and services, such as: environmental mitigation measures are identified to (i) polluter pays-that is, those who generate pollution ameliorate environmental impact. and waste should bear the cost of containment, avoidance or abatement, (ii) the users of goods and services should pay prices based on the full life cycle of costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste

(iii) environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems.



6.17. ENVIRONMENTAL RISK ASSESSMENT

Environmental risks have been considered based on specialist investigations, findings of this EIS and proposed environmental mitigation measures and are summarised in Table 6.17. The EIS found that environmental risks can be appropriately managed through the environmental mitigation measures and is unlikely to have a significant impact on the environment.

Environmental Issue	Risk	Comment	
Traffic and Transport	Low	Access to the site is provided from Adelaide Street, minor upgrades are proposed to the accessway that will enable safer vehicle ingress and egress. The Traffic assessment found the proposed development will have negligible impacts on the road conditions.	
Soils, Geology and Contamination	Low	The site is not contaminated by previous activities. The proposed development involved excavation of soil for reuse on site. In addition, ENM and VENM will be imported to the site. By following the Waste Classification Guidelines, the proponent can be satisfied that the site will remain free of contaminants and be safe for future use	
Water Quality and Flooding	Low	The site is considered flood prone due to the low-lying nature of the site and the catchment of the Hunter River.	
Air Quality	Low	Dust (airborne particulate matter) during construction is identified as being the key air quality issue to be assessed. Appropriate dust control during construction will ameliorate potential off site dust emission.	
Noise	Low	Noise and vibration impacts may be present with the filling works proposed. It is considered that the vibration would be felt by close receivers and would only occur during the daytime construction hours. Noise during construction and operation is unlikely to create an adverse impact.	
Flora, Fauna and Bushfire	Low	Tree removal is required to accommodate the proposed earthworks. The site is classed as bushfire prone land map.	
Heritage	Low	The site is not located in a heritage precinct and does not contain any known non- Indigenous heritage item.	
Visual	Low	The filling of the flood prone land is unlikely to impact on the visual amenity of the site, due to the nature of the site and proposed works. The construction vehicles will be a short-term visual impact.	
Social and Economic	Low	The proposal will result in positive social impacts through future re-development of a vacant site that could be used for residential purposes.	
Waste Management	Low	All waste generated by the proposal will be classified prior to disposal a licenced facility through an approved Waste Management Plan.	
Hazards	Low	Hazards associated with the site and its related activities are not likely to significantly impact the external environment or residences in the vicinity of the site	

 Table 6.17: Environmental Risk Rating Following Implementation of Environmental Mitigation Measures



7. MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE

The EPBC Act provides a national framework for environmental protection and management of nationally and internationally important flora, fauna, ecological communities and heritage places. Part 3 of the EPBC Act lists nine matters of NES that may require approval from the Commonwealth Minister for the Environment. An action taken by any person on Commonwealth land that is likely to have a significant impact on the environment (Section 26(1)) or an action taken by any person outside of Commonwealth land that is likely to have a significant impact on Commonwealth land (Section 26(2)) may require approval from the Commonwealth Minister for the Environment.

An EPBC Act Protected Matters Report (24 February 2021) identified the following matters of NES that may occur within 10 kilometres of, or may relate to, the site as presented in Table 7.1. Refer to Section 6.7 for discussion on flora and fauna.

Table 7.1: Matters of NES

Matters of NES	Occurrence in or near the site (10km buffer)
World Heritage Properties	None
National Heritage Places	None
Wetlands of International Importance	1
Great Barrier Reef Marine Park	None
Commonwealth Marine Areas	None
Threatened Ecological Communities	5
Threatened Species	75
Migratory Species	63

An action taken by any person on Commonwealth land that is likely to have a significant impact on the environment (Section 26(1)) or an action taken by any person outside of Commonwealth land that is likely to have a significant impact on Commonwealth land (Section 26(2)) may require approval from the Commonwealth Minister for the Environment. Other matters protected by the EPBC Act, including Commonwealth land, identified in the search is presented in Table 7.2.

Table 7.2: Other Matters Protected by the EPBC Act

Other Matters Protected by the EPBC Act	Occurrence in or near the site (10km buffer)
Commonwealth Land	8
Commonwealth Heritage Places	1
Listed Marine Species	71
Whales and Other Cetaceans	1
Critical Habitats	None
Commonwealth Reserves Terrestrial	None
Australian Marine Parks	None

Commonwealth land will not be affected by the Proposal. Other relevant issues have been considered throughout this EIS.

Table 7.3 provides an assessment of the proposed development against each matter of NES applicable to the site.

Matters of NES		Comment	Likely Impact
Wetlands of International	Importance	The site is within the Hunter estuary wetlands	Nil
(Ramsar)		(Ramsar site). The proposal will not significantly	
		impact a wetland of international importance.	
Listed Threatened	Ecological	The Flora and Fauna and Offset Assessment	Nil
Communities		Report found no significant impacts on any of	
		the potential matters of NES identified were	
		considered likely to be triggered by the	
		proposal.	
Listed Threatened Species		As above.	Nil
Listed Migratory Species		As above.	Nil

Table 7.3: Matters of NES Assessment



Table 7.4 provides an assessment of the proposed development against other matters protected by the EPBC Act.

Table	7.4:	Matters	of NES	Assessment
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Other matters protected by the EPBC Act	Comment	Likely Impact
Commonwealth Land	The proposal does not involve Commonwealth land and the site does not adjoin Commonwealth land. The proposed works are not of a nature or scale that will affect Commonwealth land within the local area.	Nil
Commonwealth Heritage Places	The site is within 10km of Williamtown RAAF Base Group. The proposed works are not of a scale or nature to affect the heritage of this place.	Nil
National Heritage Places	No national heritage places will be significantly affected by the proposal.	Nil
Listed Marine Species	The proposed works are not considered to adversely affect any listed marine species.	Nil

Referral under the EPBC Act is not considered to be required for the proposed works.



8. LIST OF APPROVALS AND LICENCES

8.1. ENVIRONMENTAL PROTECTION LICENCE

As provided in Section 4.3, it is understood that the works meet the conditions of the exemption under the POEO (Waste) Regulations 2014 and the works are not considered a scheduled activity requiring an EPL pursuant to Section 48 of the POEO Act.

Further, for the purpose of Section 50 of the POEO Act the proposed works are not considered to be a controlled development.

The project does not meet the definition of any other scheduled activity within Schedule 1 of the POEO Act.

It is understood that there is no existing groundwater licence and that a licence will not be required.

8.2. CONTROLLED ACTIVITY APPROVAL

The proposed works are within 40m of a watercourse and will therefore involve a controlled activity. The proposal will subject to a CAA from NRAR in accordance with the *Water Management Act 2000.*



9. CLAUSE 171 FACTORS

Factors required to be taken into account under Clause 171 of the EP&A Regulation 2021 are presented in Table 9.1.

 Table 9.1: Consideration of Environmental Assessment

Fact	or	Potential Impact on the Environment
a)	The environmental impact on a community	The proposed works are for environmental protection works and will rehabilitate a disused quarry for future recreation opportunities. The proposal will not result in a significant environmental impact on a community.
b)	The transformation of a locality	Permanent transformation of the locality will be positive as the site is currently inaccessible and largely uncontrolled.
c)	The environmental impact on the ecosystems of the locality	The site has been assessed as not containing any significant ecosystems and the works will result in an improved relationship between the site and locality. It is unlikely the proposal will have a significant impact on any threatened species, populations and/or ecological communities.
d)	Reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality	The proposal will have a positive visual impact on the locality through rehabilitating a disused quarry and providing for future potential recreation opportunities, not reduce environmental quality or value of the locality.
e)	 the effects on any locality, place or building that has— (i) aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance, or (ii) other special value for present or future generations 	There are no known heritage or archaeological sites that will be impacted by the proposal.
f)	The impact on the habitat of protected fauna (within the meaning of the <i>National Parks and Wildlife Act</i> 1974)	It is unlikely that the proposal will have a significant impact on any threatened species, populations and/or ecological communities.
g)	The endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air	As above.
h)	Long-term effects on the environment	The proposed works are for environmental protection works and will rehabilitate a disused quarry for future recreation opportunities. The proposed filling of the site has been designed to improve flood regimes on the site and in the surrounding area. Long-term effects will be positive.
i)	Degradation of the quality of the environment	As above.
j)	Risk to the safety of the environment	Environmental mitigation measures will minimise risk to the safety of the environment during construction.
k)	Reduction in the range of beneficial uses of the environment	The proposal will result in an improvement to the beneficial use of the environment.
I)	Pollution of the environment	Environmental mitigation measures will ameliorate potential for pollution of the environment.
m)	Environmental problems associated with the disposal of waste	Wastes generated will be classified and removed from site for disposal at an appropriate waste facility. Any fill material brought onto site will be VENM, ENM and other approved material. Any other material may be subject to



Factor		Potential Impact on the Environment
		an EPL, which will provide requirements for the mitigation of environmental problems associated with the fill.
n)	Increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply.	The proposal will utilise resources that are not in short supply.
o)	Cumulative environmental effect with other existing or likely future activities	The proposal is unlikely to have a significant cumulative impact on the environment.
p)	Impact on coastal processes and coastal hazards, including those under projected climate change conditions	None.
q)	Applicable local strategic planning statements, regional strategic plans or district strategic plans made under the Act, Division 3.1,	Strategic need is addressed in Section 4.9 and 4.10 of this EIS.
r)	Other relevant environmental factors	No other considerations identified.



10. ENVIRONMENTAL MANAGEMENT MEASURES

10.1. CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

A CEMP or equivalent will be prepared for the proposed works prior to commencement of works. The CEMP will be prepared in accordance with the *Guideline for the Preparation of Environmental Management Plans* (Department of Infrastructure, Planning and Natural Resources, 2004). Figure 4.1 of the guideline outlines information to be included in a CEMP including:

- Users of the EMP document (background, environmental management, implementation and monitor and review)
- Background (introduction, project description, EMP context, EMP objectives and environmental policy)
- Environmental Management (environmental management structure and responsibility, approval and licensing requirements, reporting, environmental training and emergency contacts and response)
- Implementation (risk assessment, environmental management activities and controls, environmental management plans or maps and environmental schedules)
- Monitor and Review (environmental monitoring, environmental auditing, correction action and EMP review).

The CEMP or equivalent will include any licences and permits that may be required, environmental management measures outlined in Section 6 of this EIS and additional site-specific measures that may be required as part of establishing the construction site or construction methodology.

An Operational Management Plan and Infrastructure Management Plan will also be prepared as part of detailed design in consultation with relevant stakeholders.

10.2. TRAFFIC AND TRANSPORT

- The temporary intersection of Adelaide Street and the site access is acceptable for the low volume of trucks accessing and exiting the site. Road safety will be enhanced with installation of "Trucks Turning Ahead" signs for the duration of the landfill project (12 months). These signs would be provided in advance of the access for drivers travelling in both directions as well as on Kent Street.
- Regular trimming of vegetation at the site access and within the sight triangles can enable visibility to be maintained for all road users.
- > Prepare a drivers' code of conduct that include the following instructions
- > Ensure that heavy vehicles do not enter Raymond Terrace or transit through
- > Approach the site from the south and depart to south and do not travel north
- > Provide standard construction hours or vehicle movements to abide by
- Truck shakedown facility shall be incorporated into the exit to prevent material being tracked onto Adelaide Street.
- Increase width of Adelaide Street accessway.

10.3. AIR QUALITY

- > Maintain vehicles and machinery to minimise emissions
- General mitigation measures
 - o Identify dust-generating activities and inform site personnel about location
 - Identify adverse weather conditions (dry and high wind blowing from dust source to sensitive receptors) and halt dust emitting activities if visible dust impacts are identified at sensitive receptors.
- Handling of soil and structural fill material
 - Minimise drop height for material handling equipment.
- Wind generated dust from temporary stockpiles and exposed areas
 - Apply watering through water trucks or sprinklers.



- Progressive staging of dust generating activities throughout the day to avoid concurrent dust emissions.
- Minimise exposed area if possible.
- Minimise amount of temporary material stockpiled if possible.
- > Wheel generated dust during hauling
 - Restrict vehicle movement to haul routes that are watered regularly.
 - Cleaning of haul roads.
 - Speed restrictions.

10.4. NOISE AND VIBRATION

General:

- > Consult with surrounding residents and other stakeholders
- Toolbox and induction of personnel prior to shift to discuss noise control measures that may be implemented to reduce noise emissions to the community
- > Contact details of the site supervisor to be on site at all times
- > Regularly inspect and maintain equipment
- Work will occur during standard construction hours (7am to 6pm Monday to Friday, 8am to 1pm Saturday and no work on Sundays or public holidays). Where work occurs outside these hours consultation will be required with adjoining residences depending on the nature of the work
- Consider noise screens or similar noise dampening options where numerous complaints are received.
- Construction Vibration
- In all cases, where the vibration levels are found to exceed the relevant criteria, alternative construction methods should be considered to reduce the impact. This may include the following strategies:
 - Prior to start of construction work and after the construction activities, prepare a dilapidation report on the state of the adjacent existing buildings.
 - During the construction, consider conducting vibration monitoring next to the sensitive buildings to determine when exceedances that may take place.
 - When exceedances occur/are likely to occur: o Use smaller equipment This will reduce the level of impact, but will need longer duration. The number of smaller equipment can be increased to compensate for the longer duration.
 - Allowance for respites When human comfort levels are exceeded, breaking up the longer exposure periods to allow for rest will reduce the degree of impact.
- Construction vehicles:
- Construction vehicles will access (enter/exit) the site on Adelaide Road. Drivers are to be informed of designated vehicle routes, parking locations and other relevant practices such as minimising the use of engine brakes, and no extended periods of engine idling.
- Schedule deliveries during the nominated hours only.
- Nominate an off-site truck parking area, away from residential street, for trucks arriving prior to gates opening. No trucks are to wait outside the site before the gates open.
- Provide on-site truck waiting areas away from residences and other sensitive land uses. Where possible provide only forward truck movements to avoid engaging reversing alarms.
- Prepare Construction Traffic Management Plan (prepared by others).
- Community Consultation:
- Strategies to inform the community of the various ways they could contact the project staff if they have queries, concerns or complaints. This may include a 24 hour complaints phone line, project email and website addresses.
- Procedures to notifying residents and occupants of other sensitive land uses of forthcoming works likely to affect their noise amenity (such as letterbox drops).
- The Project Manager to maintain a register of complaints and any corrective actions taken. The register must record, but not necessarily be limited to:
 - The date and time of the complaint;



- The means by which the complaint was made;
- Any personal details of the complainants that were provided, or if no details were provided, a note to that affect;
- Nature of the complaints;
- Any action(s) taken by the applicant in relation to the compliant, including any follow up contact with the complainant; and
- If no action was taken by the applicant in relation to the complaint, the reason(s) why no action was taken.

When complaints are received, implement a long/short term noise monitoring strategy and analysis of the results to improve the management plan, so that best practice noise control measures are continually met for the duration of the project.

10.5. FLORA, FAUNA AND BUSHFIRE

- Residual impacts to native vegetation will require retirement of 81 ecosystem credits and 1289 species credits in accordance with the Biodiversity Offsets Scheme, as outlined in Table 25 and Table 26 of the BDAR (**Appendix 5**).
- Environmental management measures to minimise impact on flora and fauna are presented in Table 12 of the BDAR (Appendix 5).

10.6. HERITAGE (ABORIGINAL)

- Any works proposed outside the activity site (such as drainage works and creek rehabilitation / stabilisation) are to be subject of a separate assessment,
- Proceed with caution. In the event that an Aboriginal object or objects are uncovered during the proposed construction works, ground disturbance works should cease within 20 metres of the object and an archaeologist, Heritage NSW and the local Aboriginal parties should be contacted to determine an appropriate management strategy,
- Contractors are aware that it is an offence under Section 86 of the National Parks and Wildlife Act 1974 to harm or desecrate an Aboriginal object unless that harm or desecration is the subject of an Aboriginal Heritage Impact Permit,
- The works may be undertaken at the specified locations provided that the proposed activities remain as discussed in this document,
- In the unlikely event that human skeletal material is uncovered during the proposed construction works, all works should cease within 20 metres of the skeletal remains. Should the remains be verified as human, the NSW Police and Heritage NSW will be contacted immediately. No works will proceed within the vicinity of the skeletal remains until an appropriate course of action has been determined in consultation with NSW Police, Heritage NSW and Aboriginal parties (if the remains are identified as Aboriginal).

10.7. HERITAGE (NON-ABORIGINAL)

If during the course of proposed works previously unknown historical archaeological material or heritage items are discovered, all work in the area of the item(s) shall cease immediately and Heritage Division, Heritage NSW and a qualified heritage consultant will be consulted, in accordance with Section 146 of the *Heritage Act 1977*, to determine an appropriate course of action prior to the recommencement of work in the area of the item

10.8. VISUAL IMPACT

- Maintain the construction site by removing waste materials, parking in designated areas and storing construction equipment appropriately,
- > Remove all waste and material once construction is complete.



10.9. SOCIAL AND ECONOMIC

- > Preparation of a project consultation and or notification strategy prior to construction.
- > Contact details of the site supervisor to be on site at all times.

10.10. WASTE MANAGEMENT

- All construction waste generated by the proposal will be classified in accordance with Waste Classification Guidelines Part 1: Classifying Wastes (NSW EPA, 2014),
- Construction waste material is not to be left on site once the works have been completed by a licensed contractor,
- Working areas are to be maintained, kept free of rubbish and cleaned up at the end of each working day, and
- > Provide waste bins in suitable areas that are managed and emptied regularly

10.11. PRELIMINARY HAZARD ANALYSIS

- Safety Data Sheets to be on site at all times.
- > All safety systems and safeguards to comply with the relevant standards and regulations.



11. CONCLUSION AND JUSTIFICATION FOR THE PROPOSAL

This EIS has been prepared for Raymond Terrace Parklands to accompany a DA for earthworks / fill to ensure that an underutilised area of land at 251 Adelaide Street, Raymond Terrace – which is currently constrained by flood impacts – can be made suitable for future rezoning and residential development. The proposal requires consent pursuant to Part 4 of the EP&A Act.

The proposal is further defined as waste management facilities or works and identified as designated development, and therefore the DA must be accompanied by an EIS.

The purpose of the DA is to regrade a flood affected portion of the site to accommodate future residential development. The proposal will ensure that an underutilised site can be restored to a use that is appropriate for the residential land use needs of a growing population in the Port Stephens LGA.

The option of not proceeding with the proposed works has been considered; however, not proceeding with the proposed works will result in the site remaining underutilised. Proceeding with the works are consistent with regional strategic planning directions for the area, as the works will provide additional land which is suitable for future rezoning and subsequent residential redevelopment. In this way, the proposal ensures that the housing needs of the growing region can be met without causing significant impact on the environment. The project will result in direct investment into the local (and greater) economy through sourcing of fill material, creation of jobs and employment through the construction phases and in the future, the opportunity to purchase residential land for development. The proposal results in significant social and economic outcomes for the immediate locality and greater region in this way.

The development is adequately consistent with the principles of ecologically sustainable development. There is unlikely to be significant impact on the environment as a result of the proposed works provided environmental mitigation measures proposed in Section 10 of this EIS are adopted.

The proposal is found to not have a significant impact on the environment, including threatened species, populations or ecological communities, or their habitats. Approval is not required under the EPBC Act.

The proposal is with merit and approval should be granted under Part 4 of the EP&A Act.



APPENDICES



Secretary's Environmental Assessment Requirements 1571



APPENDIX 2 Detail Survey Plan



Earthwork Management Plan



Earthworks Management Plan



Biodiversity Development Assessment Report



APPENDIX 6 Acoustic Report



APPENDIX 7 Air Quality Report

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Geotechnical Report



Preliminary Site Investigation Report



Traffic Impact Assessment



Flood Impact Assessment and Addendum



Aboriginal Heritage Due Diligence Assessment