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Berrimah Freight Terminal Expansion

Pre-Referral Screening

Aurizon Operations

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Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
0.1	6 November 2023	L. Yallop E. Aliotti	J. Woodworth	C. Smith
1.0	13 February 2024	E. Aliotti	Jill Woodworth	Craig Smith

Basis of Report

This report has been prepared by SLR Consulting Australia (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Aurizon Operations (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

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Table of Contents

Basi	is of Report	i
1.0	Introduction	1
2.0	NT EPA Pre-referral Screening Tool	2
2.1	Part 1 – Screening Questions	2
2.2	Part 2 – Checklist	3
2.3	References	10

Tables in Text

Table 1	NT EPA Pre-referral screening tool Part 2 – Checklist for the Project (adapted
	from NT EPA, 2022)

Figures in Text

Figure 1	NT EPA Pre-referral screening tool Part 1 Screening questions for the Project	
-	(NT EPA, 2022)	2

1.0 Introduction

Aurizon Operations Limited (Aurizon) propose to expand the Berrimah Freight Terminal at East Arm, near Darwin. The expanded terminal will have an integrated logistics focus, which provides an ability to service both bulk and containerised freight, large container storage area and potential for warehousing or colocation with incumbent freight forwarders.

The site for the proposed extension is located on:

- 338 Berrimah Road, East Arm (existing rail terminal, Section 5411 Hundred of Bagot on plan S2000/191B).
- 330 Berrimah Road, East Arm (Section 5412 Hundred of Bagot on plan S2000/191B).
- Part of 270 Berrimah Road, East Arm (Section 6082 Hundred of Bagot on plan S2008/197B).

In accordance with the Northern Territory *Environment Protection Act* 2019 (*EP Act*) and the *Environment Protection Regulations* 2020 (EP Regulations), proposals that have the potential to have a significant impact on the environment require referral to the Northern Territory Environment Protection Authority (NT EPA). Under the *EP Act*, a proponent has the responsibility to refer a proposal to the NT EPA if it has the potential to have a significant impact on the environment to a proposal / action, or it meets a referral trigger. As such, it is the requirement of a proponent to undertake a self-assessment of the proposal prior to beginning any works associated with the proposal.

The NT EPA pre-referral screening tool from the *Environmental Impact Assessment Guideline for Proponents; Referring a Proposal to the NT EPA* (NT EPA, 2022), has been completed herein to identify whether a significant impact to the environment is posed by the proposed Project. The pre-referral includes a preliminary analysis of risks associated with the action and to respond through site selection and Project design, as well as operational approaches, to minimise and mitigate identified risks.

2.0 NT EPA Pre-referral Screening Tool

2.1 Part 1 – Screening Questions

The NT EPA has developed a series of pre-referral screening questions to inform the screening tool to identify if a proposed action has the potential to have a significant impact on the environment. The pre-screening questions that inform the screening tool are provided in **Figure 1**.



Figure 1 NT EPA Pre-referral screening tool Part 1 Screening questions for the Project (NT EPA, 2022)

2.2 Part 2 – Checklist

The NT EPA Pre-referral screening tool checklist (NT EPA, 2022) has been utilised to prepare **Table 1**. It provides a preliminary evaluation of whether the Project has the potential to result in a significant impact on the environment and if formal referral to the NT EPA is necessary. **Table 1** has been reviewed within the context and framework of the NT EPA's environmental factors and objectives (NT EPA, 2021).

The tool has been used to identify the environmental values and sensitivities for each of the NT EPA factors, and to assess whether these environmental values are likely to be impacted by the proposed Project activities.

The Proposal area is defined as having a disturbance footprint approximately 40 ha on Sections 5411, 5412 and 6082, Hundred of Bagot. The Proposal's 'area of influence' is the extent to which the Proposal activities (during construction and/or operations) may have a significant impact upon environmental values, beneficial users and/or sensitive receptors. Consequently, the Proposal's area of influence is considered to be the Proposal area with a buffer of 100 m (to allow for the potential impacts from dust and noise), including watercourses downstream of the Proposal area (to the extent that impacts on water quality and/or quantity could be significant).

The scope of the Project in the context of the NT EPA referral includes:

- Clearing of approximately 40 ha of vegetation.
- Seawall reconstruction import of quarry rock.
- Reclaim import of clean fill.
- Auxiliary Services.
- Hardstand.

To undertake a preliminary evaluation of impacts on the NT EPA factors and objectives related to the Project, it is important to understand the definition of 'significant impact'. The NT *Environment Protection Act 2019* defines significant impact as "an impact of major consequence having regard to: a) the context and intensity of the impact; and b) the sensitivity, value and quality of the environment impacted on and the duration, magnitude and geographic extent of the impact'.

Theme	Environmental factor and objective	Background information	Summary of key environmental values and sensitivities of relevance to the Project	Proponent's answer to screening questions 1-5. If answer is 'yes' referral is required						Inh
Is the in	dustry type or activity proposed inh	erently hazardous with the potential to	give rise to multiple or major impact sources and		Q1					
	environmenta	I stressors with the potential to impact	on the environment?	Yes No		Q2	Q3	Q4	Q5	
	Landforms Objective: Conserve the variety and integrity of distinctive physical landforms. Terrestrial Environmental Quality Objective: Protect the quality and integrity of land and soils so that environmental values are supported and maintained	 The Project will require land reclamation and construction of a seawall. Approximately 40 ha of land and soils will be disturbed by land clearing and development. Soil disturbance will involve clearing and construction of seawall and hardstand area. 	 Portion of the land reclamation will be located on mangrove and terrestrial vegetation. A seawall is present adjacent to the project site. This will be relocated/constructed on the Project site. From a landscape perspective there are no recognised distinct physical landforms. No distinct characteristics of soil or biological processes that depend on soil quality was identified. Darwin region has a high probability or erosion due to heavy rainfalls during the wet season. Project area is located within a high potential occurrence of Acid Sulphate Soils (ASS). 	Yes No Uncertain N/A Yes No Uncertain N/A						NA Triggers refer Q2 – Clearing • Site consi vegetation Q3 – Construc • Large are prior to co • Dust gene mobilised the surrou • Activities ASS.
Land	<u>Objective</u> : Protect terrestrial habitats to maintain environmental values including diversity, ecological integrity ecological functioning.	 Approximately 40 ha of land and soils will be disturbed by land clearing and development. Clearing will include mangrove (seven assemblage) and vegetation (eight communities) and three fauna habitats. Power lights will be installed. 	 Four threatened species Four threatened species recorded within the Project area: Darwin Cycad (<i>Cycas armstrongii</i>) listed as 'Vulnerable' under the TPWC Act and not listed under the EPBC Act. Bare-rumped Sheath-tailed Bat (<i>Saccolaimus saccolaimus nudicluniatus</i>) listed as 'Near Threatened' under the TPWC Act and as 'Vulnerable" under the EPBC Act. Common Brushtail Possum (<i>Trichosurus vulpecula arnhemensis</i>) listed as 'Near Threatened' under the TPWC Act and as 'Vulnerable" under the EPBC Act. Mitchells Water Monitor (<i>Varanus mitchelli</i>) listed as 'Vulnerable' under the TPWC Act and as 'Critically Endangered" under the EPBC Act (but not observed during the 2023 survey). One threatened species as having a moderate likelihood of occurrence within the Project area: 	Yes No Uncertain N/A						 Priggers refer Q2 – Clearing Two indivious on site will not compressive will not compressive will be site will be directly Nocturnal lights. Mangrove be directly Construct introduction Q5: Possible of extent of clear

Table 1 NT EPA Pre-referral screening tool Part 2 – Checklist for the Project (adapted from NT EPA, 2022)

herent Impacts without mitigation

- erral due to:
- g impacts:
- sists of upper intertidal mangrove and terrestrial on areas.
- uction impacts:
- eas of clearing can cause erosion and soil loss construction.
- nerated and contamination that could be
- d to air or water during construction can affect pundings environment.
- s can potentially create mud waves exposing
- erral due to:
- impacts:
- viduals of the Threatened Darwin Cycad present vill be directly impacted by clearing but this does prise of a population that requires conservation
- ned fauna species present or likely to occur on be directly impacted by habitat loss.
- al fauna species may be impacted by additional
- ve sensitive and significant vegetation on site will the impacted by land clearing.
- ction activities may impact the spread and tion of weeds.
- e cumulative impacts associated with regional aring of mangrove communities.



Theme	Environmental factor and objective	Background information	Summary of key environmental values and sensitivities of relevance to the Project	Proponent's answer to screening questions 1-5. If answer is 'yes' referral is required
			 Yellow Spitted Monitor (Varanus panoptes) listed as 'Vulnerable' under the TPWC Act and not listed under the EPBC Act. 	
			Migratory species	
			Two threatened migratory species were recorded to occur within the saltpan located approximately 100 m south-west from the Project area. Therefore, the saltpan area has been removed from the Project design:	
			• Far Eastern Curlew (<i>Numenius</i> <i>madagascariensis</i>) listed as 'Critically Endangered' under the TPWC Act and 'Critically Endangered', 'Marine' and 'Migratory' under the EPBC Act.	
			 Common Greenshank (<i>Tringa nebularia</i>) listed as 'Least Concern' under the TPWC Act and 'Endangered', 'Migratory' and 'Marine' under the EPBC Act. 	
			These species were assess as having a low likelihood of occurrence within the Project area.	
			One migratory species was identified to have a moderate likelihood of occurrence within the Project area:	
			 Saltwater Crocodile (Crocodylus porosus) listed as 'Least Concern' under the TPWC Act and 'Migratory and Marine under the EPBC Act. 	
			Nocturnal Fauna	
			 Nocturnal fauna species were recorded within the Project area. 	
			Ecological Values	
			 Mangroves are considered to be both sensitive and significant vegetation in the Northern Territory. However, under the Northern Territory Planning Scheme (NTPS) 2020, The Project is located on RW (Railway) and DV (Development). 	
			 No threatened species, ecological communities or critical habitat were identified within the Project area under the EPBC Act. 	
			 Darwin Harbour is listed as a Site of Conservation Significance (SoCs). 	
			• There are no protected areas or reserves that will be impacted on by the proposed action.	
			Pest species	
			Project area is subject to high density of declared weeds.	
			Four feral species were recorded within the Project area.	

Inherent Impacts without mitigation



Theme	Environmental factor and objective	Background information	Summary of key environmental values and sensitivities of relevance to the Project	Propone questic r	ent's a ons 1-4 eferra	answe 5. If ai Il is re	er to so nswer equire	creeni is 'ye d	ng s'	Ir
	Hydrological Processes Objective: Protect the hydrological regimes of groundwater and surface water so that environmental values including ecological health, land uses and the welfare and amenity of people are maintained	 Clearing of vegetation may increase stormwater runoff and direct stormwater flows into Bleesers Creek. Water for construction will be extracted by a licensed contractor from an existing Power and Water Corporation (PWC) watermain. No groundwater extraction for the Project. 	 The Project area falls within the Darwin Harbour Declared beneficial uses. The proposed action will not require additional supply or quantity of water from surface or groundwater features. No culturally important water features will be affected by the proposed action. Surface water Bleesers Creek is located north of the proposed disturbance footprint. No major rivers or creeks traverse the Project site. Groundwater No groundwater dependent ecosystems (GDEs) are present in the Project area. 	Yes No Uncertain N/A						Triggers refe Q2 – Bleese proposed dis overland flow Q3 – Clearir • Overland and stor • Groundw infiltration hard sur
Water	Inland Water Environmental Quality Objective: Protect the quality of groundwater and surface water so that environmental values including ecological health, land uses and the welfare and amenity of people are maintained.	 Spills, leaks and inappropriate storage of contaminants during construction and operation may degrade downstream water quality. Stormwater runoff may transport contaminants into Bleesers Creek. Dangerous goods may be handled or stored on final land use. Project area will be connected to mains water supply. 	 Surface water There are no freshwater aquatic ecosystems on or adjacent to the Project site. Groundwater No historical groundwater level data from the Project locality. Low yields of less than 0.5 L/s. Groundwater in the vicinity is saline. Groundwater flow is likely to run a northern direction toward Timor Sea. Near-shore groundwater levels are likely to be influenced by tides and fluctuate seasonally. 	Yes No Uncertain N/A						Triggers refe Q3 – Constr water quality sedimentatio Q4 – Operat downstream and storage
	Aquatic Ecosystems Objective: Protect aquatic habitats to maintain environmental values including biodiversity, ecological integrity and ecological functioning	Bleesers Creek located adjacent to the proposed disturbance.	 There are no threatened freshwater aquatic species that will be impacted by the proposed action. No GDEs are present in the Project area. There are no RAMSAR wetlands in the vicinity of the area of impact. The proposed action does not require diversion of any streams or creeks. 	Yes No Uncertain N/A						NA
Sea	Coastal Processes <u>Objective</u> : Protect the geophysical and hydrological processes that shape coastal morphology so that the environmental values of the coast are maintained.	 Approximately 40 ha of land and soils will be disturbed by land clearing and development for land reclamation for the sea wall and hardstand. Clearing of vegetation may increase stormwater runoff and transport sediments and contaminants into Bleesers Creek. 	 Tidal creeks may be impacted during construction due to the following: Potential transportation of sediments in stormwater runoff. Potential transportation of contaminants in stormwater runoff. Project area is located within a high potential occurrence of ASS. 	Yes No Uncertain N/A						 Triggers refe Q2, Q3, Q4 Potentia moveme Propose permane activities waters f

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ferral due to:

ers Creek receives surface water runoff from isturbance and may be sensitive to alteration of ows.

ing and hard surface impacts:

nd surface water flows may be altered by clearing rmwater drainage network.

lwater recharge may be impacted by reduced on due to replacement of natural ground with irfaces.

ferral due to:

ruction activities have potential to impact the by of Blessers Creek from stormwater runoff and ion.

ation activities have potential impact on n water quality with dangerous goods handling e on site.

ferral due to:

and Q5 – Clearing impacts:

al sedimentation downstream and contaminant ent in stormwater runoff.

ed site location may impact the tidal creek with nent land reclamation. After clearing, construction es will commence with the sea wall to prevent from entering the construction site.



Theme	Environmental factor and objective	onmental factor and Background information Summary of key environmental values and sensitivities of relevance to the Project		Propon questio	ng s'	In				
		•	Bleesers Creek can extend to the existing sea wall during king tides.							Activities ASS and
	Marine Environmental Quality Objective: Protect the quality and productivity of water, sediment and biota so that environmental values are maintained	•	Soil disturbance will involve clearing and construction of the sea wall and hardstand. Construction activities will involve plant and equipment use.	• •	DEPWS data indicate an overall good to very good water quality of the East Arm area, despite the receiving urban stormwater runoff from Darwin and the treated wastewater from the Berrimah Waste Stabilisation Plant. Clearing of vegetation may increase stormwater runoff and transport sediments and contaminants into Bleesers Creek. Adjacent surveys indicating sediments of Darwin harbour have generally been shown to have low levels of contamination. However, some metals (arsenic, chromium and/or mercury), tributyltin compounds and petroleum hydrocarbons have been recorded in the East Arm area at concentrations exceeding national dredging guideline levels. Project area is located within a high potential occurrence of ASS.	Yes No Uncertain N/A				 Triggers refe Q3 – Clearin Stormwa contamir Activities ASS.
	Marine Ecosystems <u>Objective</u> : Protect marine habitats to maintain environmental values including biodiversity, ecological integrity and ecological functioning.	•	Soil disturbance will involve clearing and construction of the sea wall and hardstand. Darwin Harbour is located adjacent to the Project area.	•	Clearing of vegetation may increase stormwater runoff and transport sediments and contaminants into Bleesers Creek.	Yes No Uncertain N/A				Triggers refe Q3 - Stormw contaminants

nherent Impacts without mitigation

es can potentially create mud waves exposing and contaminants can potentially be transported.

erral due to:

ng and construction impacts:

vater runoff may potentially transport inants and sediment.

s can potentially create mud waves exposing

erral due to: water runoff may potentially transport ts and sediment.



Theme	Environmental factor and objective	Background information	Summary of key environmental values and sensitivities of relevance to the Project	Propone questio re	nt's ans ns 1-5. If eferral is	ver to ansv requ	o scr wer is lired	eenir s 'yes	ng s'	In
Air	Air Quality <u>Objective</u> : Protect air quality and minimise emissions and their impact so that environmental values are maintained.	 The Project is located within an industrial area. Construction phase: Approximately 40 ha vegetation will be cleared for land reclamation. Vehicle movements will increase to import fill materials on site. Fuel/diesel plant and equipment. Construction activities include sea wall, hardstand etc Operation phase: Train movement will increase from one per day to three per day. Trains will be propelled by two diesel electric locomotives. Operation will be 27 hours a day, 7 days a week for 365/366 days per years. 	 Background air quality data indicate general good air quality in the region surrounding the Project site, except for exceedances of suspended particulate, and the 24-hour average PM₁₀ and PM_{2.5} during the dry season. Pollutant of concerns identified during the construction and operations phases are: Particulate matter from construction (fugitive dust) and fine particulate matter emitted from locomotives and other diesel-fuelled mobile plant and machinery. Gaseous products of combustion. VOCs from the storage and handling of diesel. Construction dust associated with earthworks and track-out activities will have: A low risk of adverse human health or dust soiling effects. A medium risk of ecological effects. The VOC emissions associated with handling and combustion fuel will have a very low local risk. No significant sources of odour have been identified for the Project, other than combustion fumes and fuel vapours during refuelling. Fumes and vapours are expected to be detectable not more than a few metres beyond the Project boundaries. 	Yes No Uncertain N/A						Triggers refe Q2 – The pro- exceedances Q3 - Emissio truck movern may impact to Creek, mang
	Atmospheric Processes <u>Objective</u> : Minimise greenhouse gas emissions so as to contribute to the NT Government's goal of achieving net zero greenhouse gas emissions by 2050.	 Approximately 40 ha vegetation will be cleared for land reclamation. Plant and equipment during construction will be present on site. Vehicle movements to import fill materials on site during construction. Increase of train movements during operations. Increase consumption of electricity, including lighting. 	 Greenhouse emissions with truck and train movements will increase during construction and operations. Scope 1 emission from the combustion of diesel dispensed at the site into locomotives and used in the on-site freight handling equipment. Scope 2 emissions associated with electricity will be minor. The operational phase of the Project is not expected to contribute majorly to either territory or nationwide GHG emissions totals. 	Yes No Uncertain N/A						Triggers refe Q3 – GHG e operations re handling. Q4 - Margina local and reg
People	Community and Economy <u>Objective</u> : Enhance communities and the economy for the welfare, amenity and benefit of current and future generations of Territorians.	 The proponent has engaged with the stakeholders. Local contractors and workforce will be utilised for the construction and operation phases. 	 The Project will have a positive impact on local employment and resource use. Aurizon will utilise local contractors to conduct the clearing and construction. Current on-going Project such as Tiger Brenan bypass. 	Yes No Uncertain N/A			3 [] [] [Triggers refe Q2 and Q5– safety of roa Tiger Brenna Q3 – Resour

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erral due to:

roposed activities can contribute to the air quality es in the Industrial area.

ons associated with earthworks, wind erosion, nents and fuel combustion with equipment use the ecological sensitive receptors (Bleesers groves, salt flat for migratory bird habitat).

erral due to: emission will be associated with the terminal elated to the increase of trains and containers'

al increase in existing levels of key GHGs at gional scale due to increased train movements

erral due to: – Increase of vehicles may impact the traffic and ad users, associated with the cumulation of the han bypass Project. urce impacts:



Theme	Environmental factor and objective		Background information	S	Summary of key environmental values and sensitivities of relevance to the Project	Propone questic	lr			
		•	Important fill materials demand for land reclamation, estimated to be 600,000 m ³ . Traffic increase with vehicle movements. Service infrastructure demand will increase (e.g. transportation, power and utilities).	•	Road users commuting from and to Darwin. Limited supplier of fill material within the Darwin Region.					Construction surrounding resources.
	Culture and Heritage Objective: Protect culture and heritage.	•	An AAPA certificate has been applied for. A search of the AAPA register has not identified any sacred sits that would be impacted by these works.	•	No declared heritage places and objects protected under the <i>Heritage Act 2011</i> (NT). There are no Indigenous Protected Areas.	Yes No Uncertain N/A				NA
	Human Health Objective: Protect the health of the Northern Territory population.	•	Construction site after clearing will not be accessible by the public. Project is located adjacent to mangroves.	•	Food sources health and availability will not be impacted by the action. Drinking and recreational water will not be impacted by the action. East Arm Peninsula and mangroves are subject to large numbers of biting insects: midges and mosquitoes. Potential for UXO present in the Project area is low.	Yes No Uncertain N/A				Triggers ref Q2 and Q3- insects in th

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on fill material required may impact the g Projects with the potential limitation of

ferral due to:

 Presence of mangroves and associated biting he vicinity of the Project will impact the workers.



Proponent's declaration that the pre-referral screening has been conducted

Screening declaration by proponent:

I,Craig Smith......, (*full name*) declare that I am authorised to verify the prereferral screening of this proposed action/strategic proposal on behalf of.....Aurizon Operations Ltd, and further declare that:

- the attached environmental impact assessment documents (including attachments) are true; and
- the attached environmental impact assessment documents do not provide false or misleading information and I know it is an offence to provide false and misleading information, noting the penalties under section 260 of the EP Act, and section 119 of the *Criminal Code Act 1983*.

2.3 References

Northern Territory Environment Protection Authority (NT EPA), 2022. *Referring a Proposal to the NT EPA: Environmental impact assessment, Guidance for proponents (version 2.0).* Darwin, Northern Territory, Australia.

Northern Territory Environment Protection Authority (NT EPA), 2021. *NT EPA Environmental Factors and Objectives: Environmental impact assessment General Technical Guidance (version 2.0)*. Darwin, Northern Territory, Australia.



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