

# CONSTRUCTION FLORA AND FAUNA MANAGEMENT PLAN

Moorebank Precinct East Stage 1, Package 2

15 January 2025



# Moorebank Precinct East, Stage 1, Package 2 Construction Flora and Fauna Management Plan

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Signed	
Full name	
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Date	14 February 2025

#### Qube Holdings Limited (as joint approval holder)

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Signed	
Full name	
Organisation	Qube Holdings Limited (ACN: 149 723 053)
Date	4 March 2025



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# REVISIONS

029/04/16Draft issue to SIMTA for comment116/06/16Addressed comments from SIMTA231/01/17Update CoC for consultation317/02/17Update based on consultation and submission for DP&E
116/06/16Addressed comments from SIMTA231/01/17Update CoC for consultation317/02/17Update based on consultation and submission for DP&E
2     31/01/17     Update CoC for consultation       3     17/02/17     Update based on consultation and submission for DP&E
3 17/02/17 Update based on consultation and submission for DP&E
4 28/03/17 Updated based on DP&E comments
5 11/05/17 Updated based on DotEE comments and DP&E CEMP and CFFMP Approval Letter dated 09/05/17
6 20/06/17 Updates and map added to clarify definition of native vegetation
7 01/08/17 Further clarification of the definition of native vegetation
805/09/17Inclusion of MPE Stage 1, Package 1805/09/17Nest Box Strategy and Package 2 Specific Nest Box Addendum
9 07/11/2017 Updates associated with IMEX RfMA 003
1010/01/2018Updates associated with IMEX RfMA 004 & 005
Updated to include the results of the latest threatened species surveys and amended conditions as per the Land and Environment Court Ruling (March 2018)
1202/10/2018Revisions associated with the internal environmental and sustainability audit & RfMA 008
Minor updates associated with 'non1311/01/2019Conformance,' 'non-compliance' and'corrective and preventative actions'
1411/07/2019Revisions associated with RfMA 011 and RfMA 015
15     12/09/2019     Revisions associated with DotEE review of the MPE Stage 1 plans
1628/10/2019Update following DotEE comments requiring update to Figure 4-3(a) and Figure 4-3(b)
17 22/06/2021 Revision associated with Disused Rail Spur Removal
1815/01/2025Revisions associated with RfMA 24 and minor administrative updates



# **ACRONYMS AND DEFINITIONS**

Term	Explanation	
Blue Book	Managing Urban Stormwater: Soils and Construction, published by Landcom in 2004	
CEMP	Construction Environmental Management Plan	
CFFMP	Construction Flora and Fauna Management Plan	
CoC	Conditions of Consent	
Contractor	Principal Contractor	
DNSDC	Defence National Storage and Distribution Centre	
DoE	Commonwealth Department of the Environment	
DP&E	Department of Planning and Environment	
DPI	NSW Department of Primary Industries	
DURS	Disused Rail Spur	
EDO	Environmental Defenders Office	
EEC	Endangered Ecological Community	
EIS	Environmental Impact Statement	
EPA	NSW Environment Protection Authority	
EPBC Act	Commonwealth Environment Protection and Biodiversity Conservation Act 1999	
EPBC Approval	Approval (No. 2011/6229) granted under the EPBC Act on March 2014 by the Commonwealth Department of Environment for the development of the SIMTA Moorebank Intermodal Terminal Facility at Moorebank.	
FCMM	Final Compilation of Mitigation Measures	
IMEX	<ul> <li>Import Export Terminal. Includes the following key components:</li> <li>Truck processing, holding and loading areas - entrance and exit from Moorebank Avenue</li> <li>Rail loading and container storage areas – installation of four rail sidings with adjacent container storage area serviced by manual handling equipment initially and overhead gantry cranes progressively</li> <li>Administration facility and associated car parking- light vehicle access from Moorebank Avenue.</li> </ul>	
IMT facility	<ul> <li>MPE Stage 1 Package 2 including the construction of the following key components together comprising the intermodal terminal (IMT):</li> <li>Truck processing and loading areas.</li> <li>Rail loading and container storage areas.</li> <li>Administration facility and associated car parking</li> <li>Rail Link.</li> </ul>	
Moorebank Precinct	Both MPE site and MPW site	



Term	Explanation	
Minister, the	NSW Minister for Planning	
MPE	Moorebank Precinct East as approved by the Concept Plan (MP_10_0913)	
MPE Site	The site at Moorebank as approved by the Concept Plan (MP_10_0913)	
MPE Stage 1, Package 1	The construction of the Rail Link connecting the Southern Sydney Freight Line to the IMEX, traversing across the Boot land, RailCorp Land, Moorebank Avenue, the MPW Golf Course, Georges River, and Glenfield Waste Facility	
	Construction of the IMEX Terminal (Figure 1-1) including the following key components:	
MPE Stage 1,	1. Truck processing, holding and loading areas - entrance and exit from Moorebank Avenue	
Package 2	2. Rail loading and container storage areas – installation of four rail sidings with adjacent container storage area serviced by manual handling equipment initially and overhead gantry cranes progressively Administration facility and associated car parking- light vehicle access from Moorebank Avenue	
MPE Stage 1 Project	The whole of the land to which the MPE Stage 1 Project approval SSD 6766 relates including both MPE Stage 1 Package 1, and MPE Stage 1 Package 2.	
MPW	Moorebank Precinct West	
MPW Site	The site at Moorebank as approved by the Concept Plan (SSD 5066)	
Native vegetation	Areas of Plant Community Types (PCT) mapped by Arcadis and WSP Parsons Brinckerhoff in the Moorebank Precinct (including Moorebank Precinct East and Moorebank Precinct West) being a consolidation of all assessments for the Moorebank Precinct conducted since 2011 (Figure 3-1)	
Native vegetation clearance	<ul> <li>Native vegetation clearance includes the cutting down, felling, thinning, logging, removing, killing, destroying, poisoning, ringbarking, uprooting or burning of any native vegetation.</li> </ul>	
NBMS	Nest Box Management Strategy	
Non-compliance	An occurrence, set of circumstances, or development that results in a non-compliance or is non-compliant with Development Consent SSD 6766 Conditions of Consent or EPBC Act Approval (EPBC 2011/6229) Conditions of Approval but is not an incident	
Non-conformance	Non-conformances are observations or actions that are not in strict accordance with the CEMP and the aspect specific sub-plan.	
OEH	Office of Environment and Heritage	
PAC	Planning Assessment Commission	
PCT	Plant Community Type	
Project, the (site)	The Project is the MPE Stage 1 Package 2 Project i.e. the IMEX Terminal construction site as depicted in Figure 1-1. This is also the area of impact on any flora and fauna species.	
RSoC	3. Revised Statement of Commitments	



Term	Explanation
SIMTA	Sydney Intermodal Terminal Alliance
SSD	State Significant Development
SSFL	Southern Sydney Freight Line
WIRES	NSW Wildlife Information, Rescue and Education Service Inc
WoNS	Weed of National Significance



# **COMPLIANCE MATRICES**

Table 1-1 Ministers Conditions of Consent (CoC)

#### CoC Requirement

#### **Document Reference**

Note that conditions C10, C11, C12, C20, C21, C23A and E9 refer to works associated with Georges River Bridge and will be addressed by the Construction Flora and Fauna Management Plan developed for MPE Stage 1, Package 1.

C22	The Applicant shall prepare and implement a 'Threatened Dragonfly Species Survey Plan' to determine the presence or absence of threatened dragonfly species listed under the Fisheries Management Act 1994 on the Georges River, adjacent to the development site. The plan, including survey methodology, shall be prepared in consultation with DPI Fisheries prior to the commencement of construction. On implementing the plan, the survey results are to be forwarded onto DPI Fisheries. Should threatened dragonfly species be found at this site, DPI Fisheries should be contacted to agree on possible mitigation measures to avoid impacts in accordance with NSWOPI Policy and Guidelines for Fish Habitat Conservation and Management (2013).	Appendix B Completed by Arcadis in September 2016 for the Moorebank Precinct West project. DPI Fisheries confirmed that further assessment is not required and that this existing Plan also be used to satisfy C22 SSD 6766. (correspondence dated 22/12/16, refer to Appendix B).	
C23A	<ul> <li>"Prior to the commencement of clearing within the railway corridor between the southern boundary of the terminal site and the eastern side of the approved Moorebank Avenue Bridge, the Applicant shall develop and implement a Biodiversity Offset Package to the satisfaction of the Secretary. The Package shall detail how the ecological values lost as a result of the SSD will be offset. The Package shall be consistent with the NSW Biodiversity Offsets Policy for Major Projects (OEH 2014), unless otherwise agreed by the Secretary. The Package shall include, but not necessarily be limited to: (a) the identification of the extent and types of habitat that would be lost or degraded as a result of the final design of the SSD;</li> <li>(b) the objectives and biodiversity outcomes to be achieved;</li> <li>(c) the final suite of the biodiversity offset measures selected and secured in consultation with OEH;</li> <li>(d) the management and monitoring requirements for compensatory habitat works and other biodiversity offset measures proposed to ensure the outcomes of the package are achieved, including:</li> <li>(e) the monitoring of the condition of species and ecological communities at offset (including translocation) locations;</li> <li>(f) the method for the monitoring program(s), including the number and location of offset monitoring of the consultation with the OEH; and</li> <li>(h) timing and responsibilities for the implementation of the provisions of the Package.</li> <li>The Approved Biodiversity Offset Package shall be published on the Project Website within 7 days of its approval. Where land offsets cannot solely achieve compensation for the loss of habitat, additional measures shall be provided to collectively deliver an improved or maintained biodiversity outcome for the region. Where monitoring referred to in (e) above indicates that biodiversity outcomes are not being achieved, remedial actions shall be</li> </ul>	Does not apply to MPE Stage 1 Package 2 (IMEX)	



CoC	Requirement	Document Reference
	undertaken to ensure that the objectives of the Biodiversity Offset Package are achieved to the satisfaction of the Secretary. Such remedial actions shall be documented under an addendum to the Biodiversity Offset Package and the addendum be submitted to the satisfaction of the Secretary, prior to the implementation of that addendum. If the applicant can demonstrate to the satisfaction of the Secretary that the proposed offset land for between the southern boundary of the terminal site and the eastern side of the approved Moorebank Avenue Bridge has been secured, the Applicant shall within 12 months of the commencement of construction develop and implement the Biodiversity Offset Package to the satisfaction of the Secretary in accordance with items (a)-(h) above. Note: Where the Applicant has opted to develop a consolidated Biodiversity Offset Package covering both the Moorebank Intermodal Terminal (SSD 5066) and SIMTA sites, this must be submitted to the Secretary within 12 months of submitting the initial Biodiversity Offset Package in accordance with this condition unless otherwise agreed by the Secretary."	
C23B	<ul> <li>"The Applicant shall:</li> <li>(a) remove the disused rail spur traversing the Southern Boot Land and remediate and rehabilitate the land containing the disused rail spur traversing the Southern Boot Land, which is identified in blue dotted outline on Attachment A to these conditions titled "Figure 1 – Wattle Grove Offset Area"; and</li> <li>(b) once remediation of the disused rail spur is complete, apply within 2 months of completion of the remediation to amend the biobanking agreement to incorporate the land shaded yellow on Attachment A to these conditions titled "Figure 1 – Wattle Grove Offset Area"; and</li> <li>(c) apply within 2 months of the issue of the biobanking agreement to amend the biobanking agreement to incorporate the land shaded red on Attachment A to these conditions titled "Figure 1 – Wattle Grove Offset Area".</li> <li>Nothing in this condition requires the Applicant to amend the biobanking agreement application lodged with OEH in February 2017."</li> </ul>	Section 1.3.1
E31	No threatened species or communities can be cleared other than that required for construction.	Table 11 FF2.1 No threatened species have been recorded within the Project site. The results of a preclearance survey for listed threatened species will be used to update the Environmental Control Map where required.
E31A	Where any threatened flora species are to be cleared, individual plants of species suitable for translocation shall be considered for translocation into areas that have been identified as requiring rehabilitation within the Biodiversity Offset Package.	Table 11 FF7.3 No threatened species have been recorded within the Project site. If identified, translocation of threatened species will be considered
E32	The existing mature trees located on the eastern side of Moorebank Avenue shown on Drawing LA01 (Landscape Masterplan) dated 30.3.2015 shall be retained, unless where required to be removed for construction of a permanent access point to the terminal site.	Table 11 FF2.2



CoC	Requirement	Document Reference
	Trees to be retained shall be protected and maintained during preconstruction and construction activities in accordance with AS4970-2009 Protection of trees on development sites. Details of tree protection must be provided to the Certifying Authority prior to the commencement of construction.	
E34 d)	a <b>Construction Flora and Fauna Management Plan</b> to detail how impacts on ecology will be minimised and managed. The Plan shall be developed by a suitably qualified and experienced ecologist and in consultation with the OEH, and shall include, but not necessarily be limited to:	This Plan
		Consultation outlined in Section 1.4
	<ul> <li>(i) plans for impacted and adjoining areas showing vegetation communities; important flora and fauna habitat areas; locations where threatened species, populations or ecological communities have been recorded; including pre-clearing surveys to confirm the location of threatened flora and fauna species and associated habitat features;</li> </ul>	Section 3
		Table 11 FF2.1
		Table 11 FF2.3
E34 d)		Table 11 FF2.4
		No threatened species (Figure 3-2,



CoC	Requirement	Document Reference
		Higure 3-3, MPE Stage 1 CFFMP
		Flora Species Acacla pubescens Crevilea parviflora subsp. parviflora Hibbertia puberula subsp. puberula Persoonia nutans Plant Community Type Broad-leaved Ironbark - Grey Box - Melaieuca decora grassy open forest on clayforavel sols of the Cumbertand Plain, Sydney Basin Bioregian Hard-leaved Sofbby Cam - Parramatia Red Gum heathy woodland of the Cumbertand Plain, Sydney Basin Bioregion Parramatia Red Gum woodland on moist alkyvum of the Cumbertand Plain, Sydney Basin Bioregion
		Figure 3-4) have been recorded within the Project site. The results of preclearance surveys will be used to update the Environmental Control Map where required.
E34 d)	(ii) the identification of areas to be cleared and details of management measures to avoid residual habitat damage or loss and to minimise or eliminate time lags between the removal and subsequent replacement of habitat such as:	Table 11 FF2.2
E34		Table 11 FF2.3
d) (ii)	(a) clearing minimisation procedures (including tencing),	Section 5.1
E34		Section 5.1, Section 5.3, Appendix D
d) (ii)	(d) clearing procedures (including nest box plan),	During the original approval of this plan, hollow bearing trees had not been identified on the



CoC	Requirement	Document Reference
		Project site. However, a Nest Box Management Strategy (NBMS) was included within the Stage 1 Package 1 CFFMP and has been adopted as part of this plan with site specific requirements. The NBMS is included within Appendix D. Where hollow bearing trees are identified during preclearing surveys, the process outlined in Section 5.1 will be followed and the NBMS would be implemented.
E34 d) (ii)	(c) removal and relocation of fauna during clearing,	Table 11 FF3.2, FF3.3
E34 d) (ii)	(d) habitat tree management,	Table 11 FF3.2
E34 d) (ii)	(e) construction worker education; and	Table 11 FF1.1
		Section 6.2
E34 d) (ii)	(f) installation of exclusion fencing prior to commencement of construction	Section 5.1
E34	(iii) rehabilitation details, including identification of flora species and sources, and measures for the management and maintenance of rehabilitated areas;	Table 11 FF5.1
⊟34 d)		Section 5.2
E34 d)	(iv) <b>a Weed Management Strategy</b> *, incorporating weed management measures focusing on early identification of invasive weeds and effective management controls (including for those related to aquatic and riparian zones);	No weeds have been identified within the Project site, however, the management of weeds is outlined in Section 3.3. A weed management strategy has been prepared for the Stage 1 Package 1 CFFMP.
E34	(v) a description of how the effectiveness of these management	Table 11 FF 4.1 and 4.2
d)	measures would be monitored;	Section 6.3
E34 d)	(vi) a procedure for dealing with unexpected EEC/ threatened species identified during construction, including cessation of work and notification of the OEH and DPI Fisheries, determination of appropriate mitigation measures in consultation with the OEH and DPI Fisheries (including relevant re-location measures) and updating of ecological monitoring and/ or biodiversity offset requirements; and	Table 11 FF 7.3
E34 d)	(vii) mechanisms for the monitoring, review and amendment of this plan.	Section 6.3

Table 1-2 Final Compilation of Mitigation Measures (FCMM)

FCMMRequirementDocument ReferenceNote that conditions 8B, 8C, 8D, 8E, 8F, 8G, 8H and parts of 8A are not relevant to MPE Stage 1, Package 2<br/>and will be addressed separately by the Construction Flora and Fauna Management Plan developed for MPE<br/>Stage 1, Package 1.



FCMM	Requirement	Document Reference
	A Flora and Fauna Management Plan will be prepared as part of the CEMP. Native vegetation clearing will not occur until the Flora and Fauna Management Plan is approved. The Flora and Fauna Management Plan will include the following measures as a minimum:	This Plan
	Site inductions are to include a briefing regarding the local threatened flora and native fauna of the site and protocols to be undertaken if they are encountered	Table 11 FF1.1 Section 6.1
	<ul> <li>If any animal is injured, contact the relevant local wildlife rescue agency (e.g. WIRES) and/or veterinary surgery as soon as practical. Until the animal can be cared for by a suitably qualified animal handler, if possible minimise stress to the animal and reduce the risk of further injury by:</li> <li>Handling fauna with care and as little as possible.</li> <li>Covering larger animals with a towel or blanket and placing in a large cardboard box.</li> <li>Placing small animals in a cotton bag, tied at the top.</li> </ul>	Table 11 FF3.2 and FF8.1 Section 5.1
	Flora and fauna surveys will be undertaken of the RailCorp land prior to commencement of construction in this area. If required, an addendum biodiversity report would be prepared, and the Biodiversity Offset Strategy and the Threatened Species Management Plan would be updated	* Not applicable to this CFFMP as works do not extend into the RailCorp Land. This will be addressed in MPE Stage 1, Package 1
	Clearing of vegetation will be timed to avoid periods when rain is forecast in accordance with Chapter 4.4.2 of 'the Blue Book'	Table 11 FF3.1
8A	The extent of vegetation clearing is to be clearly identified on construction plans. Clearly identifying sensitive areas ('no-go areas') which cannot be impacted by construction and managing clearing such that clearing activities are constrained to these approved areas only. High visibility plastic fencing is to be installed to clearly define the limits of the works area within the Rail link specifically the Southern Boot Land, and works areas at the riparian corridor of the Georges River.	Table 11 FF 2.1
	In circumstances where native vegetation or mature tree clearing is required outside of the biodiversity study area, an ecologist will inspect the proposed area and provide advice on the impact to flora and fauna and appropriate management.	Table 11 FF 3.2
	Management of noxious weeds is to be undertaken in accordance with the <i>Noxious Weeds Act</i> 1993 and include details relating to the monitoring, management and where necessary eradication of weeds, disposal of green waste, and vehicle/plant weed wash down protocols if required.	Table 11 FF 3.4
	Equipment used for treating weed infestation(s) will be cleaned prior to moving to a new area within the Proposal site to minimise the likelihood of transferring any plant material and soil.	Table 11 FF 3.4
	Soil stripped and stockpiled from areas containing known weed infestations are to be stored on cleared land at least 40 m from native vegetation	Table 11 FF 3.4
	Water from the truck wash down in the Rail East Compound will be captured and disposed of offsite to prevent weed spread to adjoining native vegetation	* Not applicable to this CFFMP. This will be addressed in MPE Stage 1, Package 1



FCMM	Requirement	Document Reference
	Works areas at each watercourse crossing will be clearly delineated prior to commencement of works	* Not applicable to this CFFMP. This will be addressed in MPE Stage 1, Package 1
	<ul> <li>Undertake a two-stage approach to clearing:</li> <li>Remove non-hollow bearing trees at least 48 hours before habitat trees are removed.</li> <li>Hollow bearing trees are to be knocked with an excavator bucket or other machinery to encourage fauna to evacuate the tree immediately prior to felling.</li> <li>Felled trees must be left for a short period of time on the ground to give any fauna trapped in the trees an opportunity to escape before further processing of the trees.</li> <li>Felled hollow bearing trees must be inspected by an ecologist as soon as possible (not longer than 2 hours after felling).</li> </ul>	Table 11 FF2.5, FF 3.2
	areas to be cleared and relocated to suitable nearby bushland areas in the presence of an ecologist.	
	Large woody <i>debris</i> will be retained in watercourses where possible. In the event large woody debris are to be impacted they will be relocated in consultation with an ecologist	CFFMP. This will be addressed in MPE Stage 1, Package 1
	Instream works at Georges River and Anzac Creek will be minimised where possible, including disturbance to aquatic vegetation. Disturbed areas will be contained to the 20 m wide corridor	* Not applicable to this CFFMP. This will be addressed in MPE Stage 1, Package 1
	If any pits/trenches are to remain open overnight, they are to be securely covered, where reasonable and feasible. Alternatively, fauna ramps (logs or wooden planks) are to be installed to provide an escape for trapped fauna.	Table 11 FF6.7
	Undertake a pre-start-up check for sheltering native fauna of all infrastructure, plant and equipment and/or during relocation of stored construction materials	Table 11 FF6.4
	Directional lighting will be used where lighting is required in construction areas.	Table 11 FF6.5

#### Table 1-3 Revised Statement of Commitments (RSoC)

RSoC	Requirement	Document Reference
Note that Impacts to riparian corridors, threatened flora and aquatic habitats are not relevant to MPE Stage 1, Package 2 and will be addressed separately by the Construction Flora and Fauna Management Plan developed for MPE Stage 1, Package 1.		
Biodiversitv	The Proponent will undertake further detailed assessment to establish the potential biodiversity impacts of the proposed rail link and measures to mitigate its potential impacts. The investigations shall incorporate the mitigation measures listed within Section 5 of the Flora and Fauna Assessment and as summarised below:	
	Avoid impacts	Table 11 FF 2.2
	Site establishment, earthworks and rail construction	
	Mitigate impacts	Table 11



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SoC	Requirement	Document Reference
	<ul> <li>Soil disturbance related to site establishment, earthworks rail construction*</li> <li>Vegetation clearance for rail construction, access and maintenance tracks</li> <li>Construction in riparian areas/in proximity to watercourse</li> <li>Construction of pavement, slabs and building structures</li> <li>Hot works (including vegetation clearing requiring heat producing equipment)</li> <li>Alteration to air quality and noise environments</li> <li>Operation of the SIMTA proposal</li> </ul>	and *Impacts to riparian corridors not applicable to the Project site, this will be addressed in the CFFMP for MPE Stage 1 Package 1.
	<u>Management of Threatened Plant Species</u> The Proponent shall prepare and implement a Threatened Sp Management Plan for the <i>Persoonía nutans</i> and <i>Grevillea par</i> subsp. <i>parviflora</i> populations within the rail corridor that would affected by the rail link	*Impacts to threatened flora not applicable to the Project site, this will be addressed in the CFFMP for MPE Stage 1 Package 1.
	<u>Off-Set impacts</u> The Proponent will update the Preliminary Biodiversity Offset Strategy (Hyder Consulting 2013) in accordance with the NS <sup>1</sup> offset principles for major projects (state significant developm and state significant infrastructure) and continue to consult w the Department of the Environment (DOTE) through the project approval processes.	The Biodiversity Offset Strategy is being prepared and does not form part of the construction environmental management plan (CEMP).
	The offset package will be secured before any clearing of endangered ecological communities or threatened species is carried out.	
	<u>Aquatic Flora and Fauna</u> The Proponent will implement the following measures to prot the aquatic flora and fauna as part of the applications for the detailed planning applications (where relevant and applicable	*Impacts to aquatic habitats not applicable to the Project site. This will be addressed in MPE Stage 1, Package 1
	<ul> <li>Implementation of design principles for friendly fish passa</li> <li>Implementation of Construction and Operation Managem Plans for maintenance of structures in riparian and aquati zones.</li> <li>Minimise siltation of the Georges River during construction through implementing the water quality mitigation measur detailed within the Stormwater and Flooding section of the Statement of Commitmente</li> </ul>	age. ent ic n res e
	<ul> <li>Thorough assessment of any development within the Anz Creek CSWL community, including potential impacts on groundwater quality and quantity.</li> <li>Lantana removal within nominated construction zones to reduce degradation of streamside vegetation and offset a potential impacts to aquatic biodiversity.</li> </ul>	ny
	Riparian The proposed rail link (located within the rail corridor) is exent from the requirement for a WM Act controlled activity approva- from NOW as a transitional Part 3A project; however the deta design of the rail link will seek to conform to the objects of the Act and its associated guidelines. The riparian setback for Anzac Creek, as specified by NOW, metres (20 metre CRZ and 10 metre VB), for Georges River	*Impacts to riparian corridors not applicable to al the Project site. This will be ailed addressed in MPE Stage 1, e WM Package 1 is 30 the

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Moorebank Intermodal
Precinct

RSoC	Requirement	Document Reference
	riparian setback is likely to be a minimum of 50 metres (40 metre CRZ and 10 metre VB).	
	Riparian corridors will be appropriately revegetated to restore and/or maintain ecological, functional and habitat values and impede surface flows and drop sediment before it reaches the waterways.	
	Water quality and quantity issues will be managed during the construction phase through the implementation, inspection and maintenance of best practice soil and water management techniques which will be defined in the CEMP for sedimentation and erosion control during construction.	
	Water quality and quantity issues will be managed during the operation phase through the implementation, inspection and maintenance of Water Sensitive Urban Design (WSUD) measures such as rainwater tanks, grass filter strips, swales and bio retention.	



Table 1-4 Commonwealth Approval (EPBC 2011/6229)

Condition	Requirement	Document Reference		
The mitigation measures outlined in Annexure A of the Commonwealth Approval are included within Table 11 of this plan where relevant.				
5	Flora and Fauna Management Plan	# This Plan		
	For the better protection of EPBC listed flora and the environment on Commonwealth land, the person undertaking the action must engage a suitable qualified expert to prepare a Flora and Fauna Management Plan (FFMP) for the approval of the Minister. The FFMP must include (but need not be limited to):			
5a	Details on the timing of native vegetation clearance works;	Table 11 FF2.3 and Section 4.2.1		
5b	<ul> <li>detailed maps of the rail link easement and construction zone showing:</li> <li>i. permanent infrastructure and temporary works;</li> <li>ii. no-go areas; and</li> <li>iii. physical barriers used for the protection of native vegetation on Commonwealth land, and of EPBC Act listed Nodding Geebung and Small-flower Grevillea</li> </ul>	Figure 3-3, MPE Stage 1 CFFMP Flora Species Acacla pubescens Crevilea parvificra subsp.		
		<ul> <li>Control of the camboo subop.</li> <li>Personia nutans</li> <li>Personia nutans</li> <li>Personia nutans</li> <li>Personia nutans</li> <li>Piant Community Type</li> <li>Broad-leaved Ironbark - Grey</li> <li>Box - Melateuca decora grassy</li> <li>open forest on clasygravel sois</li> <li>of the Camboorand Paian</li> <li>Sydney Basin Bioregion</li> <li>Parramatta Red Gum neatity</li> <li>wooland of the Camboorand</li> <li>on moist aluxium of the</li> <li>Cumbenland Plain, Sydney</li> <li>Basin Bioregion</li> </ul>		
		Figure 3-4 Table 11 FF2.1		

Condition	Requirement	Document Reference
		Table 11 FF2.1 and FF2.2
5c	measures to minimise the extent of native vegetation clearing upon Commonwealth land and the clearing of Nodding Geebung and Small-flower Grevillea	Table 11 FF2.1
		Section 5.1
5d	provisions to ensure no more than 17 individuals of <b>Nodding</b> <b>Geebung</b> and 634 stems of <b>Small-flower Grevillea</b> are cleared	Table
		Table FF2.1, FF3.0
		Section 5.1.
5e	the results of targeted surveys for Hibbertia sp. Bankstown	Section 5.
	recorded) and what measures will be implemented to avoid,	Table 11 FE7 3
	mitigate and manage impacts to these species, if individuals are found on site;	
5f	Measures which allow terrestrial fauna to disperse naturally	Table 11 FF3.3
	individuals;	
5g	actions to maintain or enhance the long-term viability of	Not applicable to this plan –
	native vegetation adjoining the rail easement in particular, adjoining populations of <b>Nodding Geebung</b> and <b>Small</b> -	management of flora and fauna
	flower Grevillea	easement are outlined in the MPE
		Stage 1, Package 1 (RALP)
5h	Measures to safeguard flora and fauna from the threat of	Table 11 FE1 2 FE2 1 FE3 3
011	weeds, fire, pathogens and unauthorised access, including	FF3.5, FF6.8
	(but not limited to) the commitments outlined in Section 7.4.1	
5i	ongoing monitoring to inform the adaptive management of	Not applicable to this plan -
51	native vegetation adjoining the rail easement;	management of flora and fauna
		impacts adjacent to the rail link
		Stage 1, Package 1 (RALP)
		CFFMP.
5	Flora and Fauna Management Plan	# This Plan
	For the better protection of EPBC listed flora and the	
	the action must engage a suitable qualified expert to prepare	
	a Flora and Fauna Management Plan (FFMP) for the	
	approval of the Minister. The FFMP must include (but need not be limited to):	
5a	Details on the timing of native vegetation clearance works;	Table 11 FF2.3 and Section 4.2.1

There are no conditions specifically relating to Flora and Fauna Management in Concept Plan Conditions of Consent.



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### **1.1 Development Ownership**

In 2022, LOGOS joined the ESR group of companies and since August 2024, the LOGOS and ESR operations have been integrated to now operate under the name ESR Australia & NZ (ESR). The applicant/ approval holder entity remains unchanged at this stage until further notice and references to LOGOS and LOGOS authored documents and/or plans may continue and remains relevant where LOGOS and ESR are used interchangeably.

#### 1.1.1 MLP Acquisition and Applicant Transfer

In December 2021, LOGOS acquired the warehousing and property components of Qube's Moorebank Logistics Park including taking over delivery of the development under the MPE Stage 1 SSD 6766 consent and resulting in a transition away from the Sydney Intermodal Terminal Alliance (SIMTA). In August 2024, LOGOS integrated its operations with ESR Group Limited. This report has been prepared on behalf of ESR Australia & NZ, part of ESR Group.

# **1.2 Development Overview**

Approval for the construction and operation of Stage 1 of the Moorebank Precinct East (MPE) Project, comprising an Intermodal (IMT) Facility including a rail link (Package 1) and Import Export (IMEX) Terminal (Package 2) was received on 12 December 2016 (SSD 6766). The construction and operation of the MPE Stage 1 project was subject to an appeal in September 2017 (Appeal Number 2017/00081889). The approval was upheld and the revised Conditions of Consent (CoC) were released on 13 March 2018.

This Construction Flora and Fauna Management Plan (CFFMP) has been developed to manage impacts to threatened and protected flora and fauna species, populations and communities and terrestrial biodiversity values during the construction of Package 2 of the MPE Stage 1 Project (hereafter the Project). The Project was also approved under the Commonwealth *Environment Protection and Biodiversity Conservation Act* 1999 (EPBC Act) on 6 March 2014 (EPBC 2011/6229).

Within this plan, a strategy has been established to demonstrate the contractor's approach to the management of terrestrial biodiversity values. The CFFMP also accounts for requirements of the MPE Stage 1 Project Environmental Impact Statement (EIS) [Appendix S – SIMTA Stage 1 – Biodiversity Assessment Report and Threatened Species Management Plan].

This CFFMP addresses the relevant requirements of the Project Approvals, including the EIS, Submissions Report and Minister's Conditions of Consent (CoC), and all applicable State and Commonwealth guidelines and standards specific to the management of terrestrial biodiversity during construction of the Project.

### 1.3 Background and Scope

The MPE Project site is located approximately 27 kilometres (km) south-west of the Sydney Central Business District (CBD) and approximately 26 km west of Port Botany and includes the former Defence National Storage and Distribution Centre (DNSDC) site.

The MPE Project involves the development of an IMT, including warehouse and distribution facilities, rail link, freight village (ancillary site and operational services), stormwater, landscaping, servicing and associated works on the eastern side of Moorebank Avenue, Moorebank. It is to be developed in three key stages:

- Stage 1 Construction of the IMEX and rail link
- Stage 2 Construction of warehouse and Distribution Facilities
- Stage 3 Extension of the IMEX and completion of Warehouse and Distribution Facilities.

Stage 1 of the MPE Project comprises, and will be constructed across, two packages:





- Package 1: The Rail Link (not included within this CFFMP) includes a connection to the IMEX, and traverses across Moorebank Avenue, Anzac Creek and Georges River prior to connecting to the Southern Sydney Freight Line (SSFL).
- Package 2 (Figure 1-1): The IMEX (subject of this CFFMP) includes the following key components:
  - o Truck processing, holding and loading areas entrance and exit from Moorebank Avenue
  - Rail loading and container storage areas installation of four rail sidings with adjacent container storage area serviced by manual handling equipment initially and overhead gantry cranes progressively
  - Administration facility and associated car parking- light vehicle access from Moorebank Avenue.
- Removal of the Disused Rail Spur (DURS) and rehabilitation of the land containing the DURS as required by CoC C23B of the MPE Stage 1 Consent (as amended by the court decision on 13 March 2018).

The layout of the IMEX generally comprises operational areas, an administration area, rail sidings, utilities and drainage infrastructure, landscaping and signage. The operational areas of the IMEX consist of the primary and secondary container loading / unloading areas and container storage areas, and the truck holding area. Within these areas containers will be stacked up to five high.

#### 1.3.1 Removal of Disused Rail Spur

As a result of the NSW Land and Environment Court Order of 13 March 2018, the MPE Stage 1 Consent was amended to include the removal of the DURS as CoC 23B.The DURS removal works involve the removal of the DURS and associated infrastructure, followed by the remediation and rehabilitation of the DURS footprint. Remediation of the site will be covered by the existing "Boot Land" Environmental Management Plan (EMP) prepared by GHD and dated May 2016. This EMP includes procedures for managing unexpected finds, water and sediment monitoring, reporting and record keeping.

Management measures in this CFFMP are considered appropriate to manage the DURS construction activities.

#### 1.3.2 Environmental Planning Approval

The MPE Stage 1 Project has been assessed by the Department of Planning and Environment (DP&E) under Division 4.7 (Division 4.1 prior to March 2018) of the *Environmental Planning and Assessment Act 1979* (EP&A Act) as State Significant Development (SSD). The Planning Assessment Commission (PAC) granted Approval for the MPE Stage 1 Project on 12 December 2016 and is subject to the Minister's Conditions of Consent (CoC, 18 December 2016 (ref SSD-6766)). The MPE Stage 1 Project, its impacts, consultation and mitigation were documented in the following suite of documents:

- State Significant Development Application SSD 6766 (as amended in the Land and Environment Court 13 March 2018)
- SIMTA Intermodal Terminal Facility Stage 1 Environmental Impact Statement (Hyder Consulting Pty Ltd, May 2014)
- SIMTA Intermodal Terminal Facility Stage 1 Response to Submissions (Hyder Consulting Pty Ltd, September 2015)
- Biodiversity Assessment Report, MPE Stage 1, (Arcadis 2017)
- Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act) Approval (No. 2011/6229) granted on March 2014.
- SIMTA Intermodal Terminal Facility Moorebank Precinct East -Stage 1 Project Securing Biodiversity Offset Land (Arcadis, November 2017).



# 1.4 Purpose and Application

Within the submission of planning approval for the MPE Stage 1, Arcadis (then Hyder Consulting) undertook a Biodiversity Assessment Report (Hyder 2015). This CFFMP has been developed based on the initial biodiversity impact assessment, and to address the final compilation of mitigation measures within the EIS and revised statement of commitments. This plan aims to demonstrate how terrestrial biodiversity will be managed during construction of the Project.

This plan provides methods to measure and reduce the impact to terrestrial biodiversity by the contractor during the construction of the Project, including all contractor and consultant partners.

Specifically, the purpose of this CFFMP is to:

- Manage flora and fauna impacts in accordance with the Project approval documents (as outlined in Section 1.1.1)
- Review and consider the Biodiversity Assessment Report and Threatened Species Management Plan (Appendix S of EIS) during the construction phase of Package 2 of the Project
- Ensure that through the use of best practice, impacts to terrestrial biodiversity are minimised.



MPE Stage 1 CEMP



Figure 1-1 MPE Site Overview



# **1.5 Objectives and Targets**

The following high level objectives and targets identified in the table below are set for the Project for the management of terrestrial biodiversity:

Table 1-1 Objective and Targets

Objective	Performance Indicators
<ul> <li>To correctly implement flora and fauna management controls to ensure ecolo impacts are minimised during construct comply with contractual and legislative requirements.</li> <li>Minimise impacts or environmental consequences to threatened species, populations, endangered ecological co and their habitats</li> <li>Maintain existing areas of vegetation r by construction as viable habitat throu control of woode pacts or pathogene and</li> </ul>	<ul> <li>No death or injury to fauna</li> <li>No unapproved destruction of flora or fauna habitats</li> <li>Weeds controlled in accordance with the requirements of the relevant legislation.</li> <li>Any threatened fauna or flora that have not been identified in the EIS, but which may inhabit the Project site, are identified as early as practicable.</li> </ul>
fire to promote natural regeneration.	ccess and



### **1.6 Consultation**

The NSW Minister's Condition of Approval requires that the Flora and Fauna Sub-Plan be prepared in consultation with the Office of Environment and Heritage (OEH). A draft version of the CFFMP was provided to the OEH for comment and review as outlined below (Table 1-2). Appendix C contains evidence of consultation.

Table 1-2 Consultation Summary

Agency	Date	Person Contacted	Comment	Status
OEH	22/12/16		Contacted by phone to inform the CEMP would be submitted mid-January. OEH Stated they were happy to receive.	Open
	23/01/17		Contacted by phone to inform the CEMP would be submitted 1 February with a consultation period of 2 weeks. No answer, voice message left.	Open
	25/01/17		Phone call received from OEH. OEH stated they were happy to receive the documents and make comment within given timeline.	Open
	1/02/17		Email sent containing briefing note CEMP, CHMP and CFFMP for review, reiterating February 15 deadline for comments.	Open
	8/02/17		Phone call and email sent to track progress of document reviews. No answer, voice message left	Open
			Response received stating that documents were unable to be opened. The documents were resent via email.	
	16/02/16		Phone call and email sent to remind OEH that deadline has passed and any comments would need to be submitted ASAP.	Open
	16/02/16		Comments on CFFMP received, it was advised that OEH were unable to provide comments on the CHMP and CEMP.	Open
	20/02/17		Email sent to indicate how comments have been addressed within Draft Document (to be submitted to DP&E). (See Appendix A).	Closed
			Consultation complete	



# **2 ENVIRONMENTAL OBLIGATIONS**

Table 3 below details the legislation, planning instruments and guidelines relevant to this sub-plan.

Table 3 Legislation, Planning Instruments and Guidelines

Environmental Planning Legislation	Description	Relevance to this CFFMP
Environmental Planning and Assessment Act 1979	This Act establishes a system of environmental planning and assessment of development proposals for the State.	The Development Consent conditions and obligations are incorporated into this CFFMP.
Environment Protection and Biodiversity Conservation Act 1999 (Cwth)	The main purpose of this Act is to provide for the protection of the environment especially those aspects that are of national environmental importance and to promote ecological sustainable development. The Act binds the Crown. Do not take, use, keep or interfere with "nationally significant" cultural and natural resources, protected wildlife and protected plants without Approval.	The project as a whole is a controlled action under the EPBC Act with controlling provisions related mainly to the Rail connection (refer to compliance matrices).
Threatened Species Conservation Act 1995 Threatened Species Conservation Regulation 2002 Threatened Species Conservation (Savings and Transitional) Regulation 1996	This Act and Regulations provide for obtaining licenses to harm or pick threatened species populations or ecological communities whether plant or animal or to damage any critical habitat. The offence of picking or harming any threatened species is covered under the National Parks & Wildlife Act Part 8A. It is a defence under Part 8A of that Act if the offence was essential to carrying out development that is in accordance with a	The CoC addresses the requirements of the TSC Act and regulations (refer to compliance matrices). This Act was repealed by Schedule 10 to the <i>Biodiversity</i> <i>Conservation Act 2016 No 63</i> with effect from 25 August 2017. See <i>Biodiversity</i> <i>Conservation Act below.</i>
	Development Consent within the meaning of the EP&A Act or an approval within the meaning of Part 5 of the EP&A Act.	
<i>Biodiversity Conservation</i> <i>Act 2016</i>	This Act broadly incorporates similar objectives to those identified under TSC Act, and additionally seeks to establish a framework for assessment and offsetting of development impacts as well as investment in biodiversity conservation.	This CFFMP prescribes measures to avoid and minimise impacts on threatened species and communities listed under the BC Act, that are known or considered likely to occur in the Project site.
Fisheries Management Act 1994	This Act is applicable to all waters within the state including private and public waters and all permanent and intermittent waters. The Act is most relevant in respect to maintaining water quality and ensuring no polluted water from site works enters streams, creeks and waterways. In addition this Act also has relevance for the removal of marine vegetation.	Water discharging from the Project site must not pollute the adjacent streams or watercourses.

Moorebank
Intermodal Precinct
 Treemer

Environmental Planning Legislation	Description	Relevance to this CFFMP
Noxious Weeds Act 1993	This Act provides for the classification and control of noxious weeds. Declared noxious weeds are classified as Class 1, State Prohibited Weeds; Class 2, Regionally prohibited Weeds, Class 3 Regionally Controlled Weeds, Locally Controlled Weeds and Class 5 Restricted Plants. Class 1, 2 & 5 weeds are referred to in the Act as "Notifiable Weeds".	The Act applies to owners or occupiers of land. Management of weeds is a requirement of the CoC (refer to compliance matrices). This Act was repealed by Schedule 6 to the <i>Biosecurity</i> <i>Act 2015 No 24</i> with effect from 1 July 2017
Biosecurity Act 2015	The primary objective of the Act is to provide a framework for the prevention, elimination and minimisation of biosecurity risks posed by biosecurity matter, dealing with biosecurity matter, carriers and potential carriers. Division 2 of the Act defines local control authorities for weeds and Schedule 1 outlines special provisions relating to weeds, including the duty of land occupiers to control and manage weeds.	This CFFMP prescribes measures to manage weeds and pests that may be identified in the Project site, although none have been identified to date.





# **3 EXISTING ENVIRONMENT**

# 3.1 Flora

The methodology and results of initial surveys of the Project are set out in the Biodiversity Assessment Report (BAR, Hyder 2015). The BAR was amended by Arcadis in November 2017 to satisfy part of Condition C23 to facilitate the commencement of clearing from the Southern Boundary of MPE Stage 1, Package 2 to the RailCorp Land section of MPE Stage 1, Package 1.

The vegetation within the Project site consisted almost entirely of planted trees with a mown or managed understorey, which does not meet the criteria for any threatened ecological communities.

The planted tree species are typical of cultivated eucalypts that are commonly found as mature street trees in suburban Sydney, with *Eucalyptus microcorys* (Tallowwood), *E. saligna* (Sydney Blue Gum), *Corymbia maculata* (Spotted Gum) and *C. citriodora* (Lemon-scented Gum) frequently recorded.





Photograph 1: Mature trees of *Eucalyptus* saligna and *Corymbia maculata* on the Project site (Hyder 2015)

Photograph 2: Mature trees of *Eucalyptus microcorys* on the Project site (Hyder 2015)

The ground layer in the non-paved areas of the Project site consisted of mown grass lawns, dominated by *Cynodon dactylon* (Couch), *Pennisetum clandestinum* (Kikuyu) and other exotic grass species; there was a native grass component persisting in some locations, with native grasses observed including *Paspalidium distans*, *Austrodanthonia sp.* (Wallaby Grass) and *Eragrostis leptostachya* (Paddock Lovegrass) as well as some small native herbs.

There was one area adjoining the disused rail line bordering the south-eastern boundary of the Project site that supported mature trees of *Eucalyptus sclerophylla* (Hard-leaved Scribbly Gum) and an understorey of native shrubs, grasses and herbs. Exotic cover was low, with *Eragrostis curvula* (African Lovegrass) dominating in patches. It is possible that this area has been subject to management as there were mesh tree guards around the bases of two trees. This small (0.1 ha) area has been mapped as native vegetation (Figure 3-1). To the southeast of the Project site is a network of drainage channels with some tree plantings and some apparent tree and shrub regeneration. The channels supported a mixture of native, nonlocal native and exotic trees and shrubs including *Eucalyptus saligna, E. tereticornis* (Forest Red Gum), *Corymbia maculata, Melaleuca quinquenervia* (Broad-leaved Paperbark), *Casuarina glauca* (Swamp Oak) and *Eucalyptus parramattensis* (Parramatta Red Gum).

For Moorebank Precinct, native vegetation is defined as "Areas of Plant Community Types (PCT) mapped by Arcadis and WSP Parsons Brinckerhoff in the Moorebank Precinct (including Moorebank Precinct East and Moorebank Precinct West) being a consolidation of all assessments for the Moorebank Precinct conducted since 2011. The areas of native vegetation within the vicinity of the Project site is shown in Figure 3-1.



MPE Stage 1 CFFMP



Figure 3-1 Native vegetation within the vicinity of the Project site



## 3.2 Landscaping

Landscaping on the western boundary of the Project site, along Moorebank Avenue will consist of an 18m wide setback. Differentiating plant species will be used at the Project site entry/exits to accentuate these nodal points. This 18m wide setback will include a bio-retention swale which will be used for water capture and management along this boundary. Water treatment is to be facilitated in this bio-retention channel with the plantings of suitable wetland plants. All planting is to be informal, with groups of trees, shrubs and swathes of groundcovers. This will serve to enhance the natural characteristics of the landscape. A high diversity of species will help to integrate the site into the surrounding area.

Landscaping along the southern boundary of the Project site will include a mix of trees, shrubs and swathes of groundcover to create a biological connection to the bushland to the south. Landscaping will also be provided around the northern and eastern boundaries of the Project site. This landscaping will include a mix of shrubs and turfed areas. The landscape design aims to integrate the Project site with its broader environment by:

- using species that are local to the area.
- using trees throughout the Project site, where feasible, to provide for a uniform canopy cover within vegetated areas.
- using local species as understorey planting to enhance local habitat values.
- using materials in high visibility areas that are sympathetic to the colours and textures of local plant species being used.

Only trees required to be removed as part of establishing permanent access on Moorebank Avenue, Main IMT construction haulage road and Main IMT construction stockpile will be removed; other existing mature trees will be retained. Trees to be retained shall be protected and maintained during preconstruction and construction activities as outlined in Table 11.

# **3.3 Noxious Weeds**

Noxious weeds have not been detected within the Project site, however the presence/absence of noxious weeds is to be confirmed by an ecologist prior to clearing and bulk earthworks commencing. Noxious weeds that have the potential to occur, based on the results of field surveys within surrounding lands by Hyder (2015) are summarised in Table 8 below. Management measures for weeds are outlined in Table 11 FF3.4.

Name	Example Photo	Class	WoNS	Weed control requirements
Chrysanthemoides monilifera subsp. rotundata Bitou Bush		3	Yes	The plant must be fully and continuously suppressed and destroyed.
Cortaderia selloana Pampas Grass		3	No	The plant must be fully and continuously suppressed and destroyed.
<i>Lantana camara</i> Lantana		4	Yes	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority.

Table 4 Noxious weeds with the potential to occur within the Project site



Name	Example Photo	Class	WoNS	Weed control requirements
<i>Opuntia</i> sp. Prickly Pear		4	Yes	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority.
<i>Rubus fruticosus</i> Blackberry		4	Yes	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority.

\* Photos sourced from NSW Weedwise. http://weeds.dpi.nsw.gov.au/

# 3.4 Fauna Habitat

Native vegetation has been predominantly cleared from the Project site and persists as isolated trees amongst expanses of mown exotic and native grasses. Habitat features such as rocky features, well-developed leaf litter, ground timber and hollow logs are absent from cleared and disturbed areas. Thus, the availability of sheltering and foraging habitat for reptiles and cover-dependent terrestrial mammals is reduced.

Isolated trees offer potential nesting, sheltering and roosting habitat to birds such as Pied Currawong (*Strepera graculina*) and Noisy Miner (*Manorina melanocephala*). Flowering eucalypts also provide foraging habitat for Grey-headed Flying Fox (*Pteropus poliocephalus*).

A small number of scribbly gums (*Eucalyptus sclerophylla*) located in the south of the Project site (outside of the impact area) support small and medium-sized hollows, offering nesting habitat to hollow-dependent species such as Rainbow Lorikeet (*Trichoglossus haematodus*) and Scaly-breasted Lorikeet (*Trichoglossus chlorolepidotus*).

A diversity of microchiropteran bat species were recorded in cleared and disturbed areas, including White-striped Mastiff Bat (*Tadarida australis*), Gould's Wattled Bat (*Chalinolobus gouldii*), Chocolate Wattled Bat (*Chalinolobus morio*), Little Forest Bat (*Vespadelus vulturnus*) and the threatened Eastern Bentwing-bat (*Miniopterus schreibersii oceanensis*).

Open grassy areas provide foraging habitat for ground-feeding birds such as White-winged Chough (*Corcorax melanorhamphos*), Red-rumped parrot (*Psephotus haematonotus*) and small terrestrial mammals such as the Brown Hare (*Lupus capensis*). Other small trees and shrubs throughout the site that may offer sheltering and nesting habitat to smaller birds are restricted to small areas of horticultural plantings.

Identified fauna habitat and threatened fauna species are shown in Figure 3-2.

The buildings currently on the Project site offer limited habitat features to native fauna, although they may support potential roosting habitat for microchiropteran bats. Given that inspection of these buildings was not possible during site surveys, it is assumed that some of the buildings offer potential fauna habitat. As outlined in Table 8, preclearance surveys, including echolocation call recording and dawn/dusk surveys will be undertaken by an ecologist to confirm any roost sites. If confirmed within the construction site, demolition of the buildings may be restricted to winter, outside of the critical breeding season.

A lack of habitat connectivity within the Project site, and between the site and adjacent areas, reduces potential movement of arboreal mammals and cover-dependent fauna into and through the Project site. The riparian corridors associated with the Georges River and Anzac Creek, and the vegetated lands within the Southern Boot Land are not included within the current scope and are unlikely to be directly impacted by the Project. Specific management measures for these habitats will be included within a separate CFFMP for the Rail Link.



MPE Stage 1 CFFMP



Figure 3-2 Fauna Habitat and Threatened Fauna Species Locations
## Moorebank Intermodal Precinct

# 3.5 Threatened Species

The amended Biodiversity Assessment Report prepared by Arcadis (2017) identified the below threatened species within the Project study area as outlined in the Environmental Impact Statement Figure 14-1: Ecological Study Area listed under the NSW *Threatened Species Act 1995* (TSC Act), two of which are also listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act):

- East Coast Freetail Bat (Mormopterus norfolkensis), TSC Listed: Vulnerable;
- Southern Myotis (Myotis macropus), TSC Listed: Vulnerable;
- Eastern Bentwing-bat (Miniopterus schreibersii oceanensis) TSC Listed: Vulnerable;
- Grey-headed Flying Fox (Pteropus poliocephalus), TSC Listed: Vulnerable, EPBC Listed: Vulnerable;
- Nodding Geebung (Persoonia nutans), TSC Listed: Endangered, EPBC Listed: Endangered; and
- *Small-flower Grevillea (Grevillea parviflora subsp. parviflora)*, TSC Listed: Vulnerable, EPBC Listed: Vulnerable
- Hibbertia puberula subsp. puberula (endangered, TSC Act)
- Hibbertia fumana (critically endangered TSC act).

Of these, Eastern Bentwing-bat, Grey-headed Flying Fox, and Nodding Geebung were recorded close to the Project site (refer to Figure 3-2 and

Figure 3-3, Table 9 and Table 11 FF7.1 and FF7.2).

The area of impact is restricted to the Project site as depicted in Figure 1-1 i.e. the MPE Stage 1, Package 2 site. No clearing outside this area will be undertaken, and as such, no flora or fauna outside of this area will be impacted upon. It is noted that the Project site has been previously cleared and it is unlikely that any endangered flora species will be encountered. Pre-clearing surveys undertaken prior to clearing will include the identification of threatened species; where threatened species are identified the Unexpected Threatened Species Procedure will be enacted as outlined in Table 11 FF7.3.

Further surveys undertaken by Arcadis in October and November 2016 within the Boot Land south of the Project site identified three additional threatened plant species. These identified species were:

- Bynoe's Wattle (Acacia bynoeana), TSC Act listed: Endangered, EPBC Act listed: Vulnerable;
- Downy Wattle (Acacia pubescens), TSC listed: vulnerable, EPBC listed: Vulnerable;
- Hibbertia puberula subsp. puberula, TSC Listed: Endangered;
- Hibbertia fumana, TSC Listed: Critically endangered

Additional targeted flora surveys for the MPE Stage 1: Package 1, undertaken by Cumberland Ecology in summer 2017, identified 184 *Hibbertia fumana* and 186 *Hibbertia puberula* subsp. *puberula* within the construction boundary for that package. Neither of these species have been recorded within the Package 2 construction boundary.

Hibbertia sp. Bankstown (syn. Hibbertia puberula subsp. glabrescens) is currently known to occur in only one population at Bankstown Airport. The airport site is very heavily modified from the natural state, lacks canopy species and is currently a low grass/shrub association with many pasture grasses and other introduced herbaceous weeds. Soil at the site is a sandy (Tertiary) alluvium with a high silt content. Based on the presence of potentially similar habitat surveys for the species were undertaken to support the MPE Stage 1 Biodiversity Assessment Report (updated by Arcadis 2017). The species was not detected and was considered unlikely to occur within the Project Site.

No threatened species have been identified within the Project site to date. The nearest threatened species are located north of Anzac Creek within the Boot Land over 100m to the south of the Project, with the exception of one strand of *persoonia nutans* which was identified in the EIS to be within 50m of the southern boundary of the Project (



Figure 3-3a and b,

Construction Flora and Fauna Plan January 2025

# MPE Stage 1 CFFMP Flora Species Acacia pubescens Grevillea parvifiora subsp. Ö parviflora Hibbertia puberula subsp. puberula Persoonia nutans Plant Community Type Broad-leaved Ironbark - Grey Box - Metaleuca decora grassy open forest on clay/gravel soits of the Cumberland Plain, Sydney Basin Bioregion Hard-leaved Scribbly Gum Parramatta Red Gum heathy woodland of the Cumberland Plain, Sydney Basin Bioregion Parramatta Red Gum woodland on moist alluvium of the 100 Cumberland Plain, Sydney Basin Bioregion

Figure 3-4a: Threatened Flora Species and Plant Community Types - Permanent Infrastructure

Figure 3-4a and b. Table 9 outlines the likelihood of encountering threatened species. The flora species identified have been assessed as being **unlikely** to occur within the project boundary. Despite this, a precautionary approach has been adopted for clearing; pre-clearing surveys will be undertaken by an ecologist prior to any clearing on site, (Table 11) and staff will be educated in the identification of threatened species.

Should any unexpected threatened species be identified within the Project site, the Unexpected Threatened Species procedure will be implemented (Table 11 FF7.3) however no threatened species have been recorded within the Project site. If identified, translocation of threatened species will be undertaken.

CoC C22 also requires that a 'Threatened Dragonfly Species Survey Plan' is undertaken to determine the presence or absence of threatened dragonfly species listed under the Fisheries Management Act 1994. As outlined in Table *5*, a habitat assessment was undertaken by Arcadis (2016). No habitats for either *Archaeophya adamsi* or *Austrocordulia leonardi* were detected in the survey area (Georges River between the crossings of Cambridge Avenue and the M5 Southwestern Motorway at Moorebank) and it was concluded highly unlikely that the threatened dragonflies occur in the survey area.



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Figure 3-3a: Threatened Flora Species and Plant Community Types - Temporary Works

Figure 3-3 Threatened Flora Species and Plant Community Types – Temporary Works





Figure 3-3b: Threatened Flora Species and Plant Community Types - Temporary Works

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Figure 3-4a: Threatened Flora Species and Plant Community Types - Permanent Infrastructure

Figure 3-4 Threatened Flora Species and Plant Community Types – Permanent Infrastructure

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Figure 3-4b: Threatened Flora Species and Plant Community Types - Permanent Infrastructure



Table 5 Threatened Species, Likelihood of Occurrence within the Project

	Threatened Species	Habitat Requirements*	Likelihood of Occurrence	Mitigation Measures
East Coast Freetail Bat ( <i>Mormopterus</i> <i>norfolkensis</i> ) TSC Listed: Vulnerable EPBC Listed: Not Listed		This species occurs in dry sclerophyll forest, woodland, swamp forests and mangrove forests east of the Great Dividing Range. It roosts mainly in tree hollows but will also roost under bark or in man-made structures. Usually solitary but also recorded roosting communally, probably insectivorous.	<u>Unlikely.</u> This species was recorded in the riparian vegetation of the western bank of the Georges River. As described by Hyder (2015), the species may roost in tree hollows occurring on the western bank of the Georges River, or under exfoliating bark of rough-barked eucalypts in riparian habitats.	Preclearance surveys. Environmental awareness to be included in site inductions and toolbox talks.
Southern Myotis ( <i>Myotis</i> <i>macropus</i> ) TSC Listed: Vulnerable EPBC Listed: Not Listed		The Southern Myotis is found in the coastal band from the north-west of Australia, across the top- end and south to western Victoria. It is rarely found more than 100 km inland, except along major rivers. It generally roosts in groups of 10 - 15 close to water in caves, mine shafts, hollow- bearing trees, storm water channels, buildings, under bridges and in dense foliage. Forage over streams and pools catching insects and small fish by raking their feet across the water surface.	<u>Unlikely.</u> The species is typically found in association with riparian vegetation and may forage along Georges River and Anzac Creek for fish and invertebrates.	Preclearance surveys. Environmental awareness to be included in site inductions and toolbox talks.



	Threatened Species	Habitat Requirements*	Likelihood of Occurrence	Mitigation Measures
Eastern Bentwing-bat ( <i>Miniopterus</i> <i>schreibersii</i> <i>oceanensis</i> ) TSC Listed: Vulnerable EPBC Listed: Not Listed		Eastern Bentwing-bats occur along the east and north-west coasts of Australia. The hunt in forested areas, catching moths and other flying insects above the tree tops. Caves are the primary roosting habitat, but also use derelict mines, storm-water tunnels, buildings and other man-made structures. The species form discrete populations centred on a maternity cave that is used annually in spring and summer for the birth and rearing of young. Maternity caves have very specific temperature and humidity regimes. At other times of the year, populations disperse within about 300 km range of maternity caves.	Possible foraging/hunting and roosting habitat. This species was recorded by Hyder (2015) in remnant woodland and forest, and cleared and disturbed areas, suggesting that the Project site may provide some foraging opportunities. The buildings currently on the Project site may support potential roosting habitat for this species.	Preclearance surveys, including echolocation call recording and dawn/dusk surveys to confirm any roost sites. If confirmed within the construction site, demolition of the buildings may be restricted to winter, outside of the critical breeding season.
Grey-headed Flying Fox ( <i>Pteropus</i> <i>poliocephalus</i> ) TSC Listed: Vulnerable EPBC Listed: Vulnerable		The Grey-headed Flying-fox requires foraging resources and roosting sites. It is a canopy- feeding frugivore and nectarivore, which utilises vegetation communities including rainforests, open forests, closed and open woodlands, Melaleuca swamps and Banksia woodlands. It also feeds on commercial fruit crops and on introduced tree species in urban areas. The primary food source is blossom from Eucalyptus and related genera but in some areas it also utilises a wide range of rainforest fruits. The Grey- headed Flying-fox roosts in aggregations of various sizes on exposed branches. Roost sites are typically located near water, such as lakes,	Possible foraging habitat only. The Grey-Headed Flying fox was observed foraging amongst eucalypts in the site and flying over remnant woodland further to the south. Flowering exotic and native trees, predominantly eucalypts located within the Project site provides a seasonal foraging resource only. No suitable roosting sites have been reported to occur.	Preclearance surveys. Environmental awareness to be included in site inductions and toolbox talks.

rivers or the coast.



	Threatened Species	Habitat Requirements*	Likelihood of Occurrence	Mitigation Measures
Bynoe's Wattle ( <i>Acacia</i> <i>bynoeana</i> ) TSC Listed: Endangered EPBC Listed: Vulnerable		Occurs in heath or dry sclerophyll forest on sandy soils. Seems to prefer open, sometimes slightly disturbed sites such as trail margins, edges of roadside spoil mounds and in recently burnt patches. Associated overstorey species include Red Bloodwood, Scribbly Gum, Parramatta Red Gum, Saw Banksia and Narrow-leaved Apple.	Unlikely. This species was recorded in native vegetation within the conservation area, to the south- east of the site and south of Anzac Creek. The Project site is already cleared of native vegetation and the maintained understorey (mown) is not preferred by this species.	Preclearance surveys. Environmental awareness to be included in site inductions and toolbox talks.
Downy Wattle ( <i>Acacia</i> <i>pubescens</i> ) TSC listed: Vulnerable EPBC listed: Vulnerable		Occurs on alluviums, shales and at the intergrade between shales and sandstones. in open woodland and forest. Found in a variety of plant communities, including Cooks River/Castlereagh Ironbark Forest, Shale/Gravel Transition Forest and Cumberland Plain Woodland.	<u>Unlikely.</u> This species was recorded in native vegetation within the conservation area, to the south- east and east of the site. The Project site is already cleared of native vegetation and the maintained understorey (mown) is not preferred by this species.	Preclearance surveys. Environmental awareness to be included in site inductions and toolbox talks.



	Threatened Species	Habitat Requirements*	Likelihood of Occurrence	Mitigation Measures
Nodding Geebung ( <i>Persoonia nutans</i> ) TSC Listed: Endangered EPBC Listed: Endangered		Restricted to the Cumberland Plain in western Sydney, between Richmond in the north and Macquarie Fields in the south. Northern populations are confined to aeolian and alluvial sediments and occur in a range of sclerophyll forest and woodland vegetation communities, with the majority of individuals occurring within Agnes Banks Woodland or Castlereagh Scribbly Gum Woodland and some in Cooks River / Castlereagh Ironbark Forests.Peak flowering is from November to March with sporadic flowering all year round.	Unlikely. A population of this species was previously identified in native vegetation north of Anzac Creek and to the east of the MPE site. One individual was recorded on the MPE site, in the fragmented woodland adjoining the southern edge of the project site The Project site is already cleared of native vegetation and the maintained understorey (mown) is not preferred by this species. Individuals found in the south of the MPE site were growing in fragmented native vegetation.	Preclearance surveys. Environmental awareness to be included in site inductions and toolbox talks.
		Sporadically distributed throughout the Sydney Basin and in the Hunter at in the Cessnock -		

Small-flower Grevillea (Grevillea parviflora subsp. parviflora)

TSC Listed: Vulnerable

EPBC Listed: Vulnerable



Sporadically distributed throughout the Sydney Basin and in the Hunter at in the Cessnock -Kurri Kurri area (particularly Werakata NP). Sydney region occurrences are usually on Tertiary sands and alluvium, and soils derived from the Mittagong Formation. Soil landscapes include Lucas Heights or Berkshire Park.

Flowering has been recorded between July to December as well as April-May. Flowers are insect-pollinated and seed dispersal is limited. Seedling recruitment after fire is uncommon, and most recovery after disturbance appears to be resprouting from rhizomes.

#### Unlikely.

This species was recorded in native vegetation to the southeast of the site and south of Anzac Creek. The Project site is already cleared of native vegetation and the maintained understorey (mown) is not preferred by this species. Preclearance surveys.

Environmental awareness to be included in site inductions and toolbox talks.



	Threatened Species	Habitat Requirements*	Likelihood of Occurrence	Mitigation Measures
Hibbertia fumana TSC Listed: Critically Endangered Not listed under the EPBC Act		This recently rediscovered species was previously known only from historical herbarium records and presumed to be extinct. The species has been recorded in a transitional zone between Castlereagh Ironbark Forest and Castlereagh Scribbly Gum Woodland, with an open understorey and this habitat is not present within the Project site.	Unlikely This species was recorded in the MPE Stage 1: Package 2 construction boundary and the native vegetation within the conservation area, to the south- east of the site and south of Anzac Creek. The Project site is already cleared of native vegetation and the maintained understorey (mown) is considered unlikely to support this species.	Preclearance surveys including targeted surveys for threatened flora. Environmental awareness to be included in site inductions and toolbox talks.
Hibbertia puberula subsp. puberula		Occurs on sandy soil often associated with sandstone, or on clay. Habitats are typically dry	<u>Unlikely</u> This species was recorded in the MPE Stage 1: Package 2 construction boundary and the native vegetation within the	Preclearance surveys. Environmental

TSC Listed: Endangered

Not listed under the EPBC Act



sclerophyll woodland communities, although heaths are also occupied. This habitat is not present within the Project site.

conservation area, to the southeast of the site and south of Anzac Creek.

The Project site is already cleared of native vegetation and the maintained understorey (mown) is not preferred by this species.

awareness to be included in site inductions and toolbox talks.



	Threatened Species	Habitat Requirements*	Likelihood of Occurrence	Mitigation Measures
Adam's Emerald Dragonfly - Archaeophya adamsi FM Act Listed: Endangered		Adam's Emerald Dragonfly is one of Australia's rarest dragonflies. Larvae have been found in narrow, shaded riffle zones with moss and abundant riparian vegetation (often closed canopy) in small to moderate sized creeks with gravel or sandy bottoms (DPI Fisheries 2013). Adults can be found on rocks or in litter among the stream margins or in riffle situations. The majority of sightings for this species have occurred in undisturbed, well-vegetated habitats which are mostly located in national parks or reserves (Theischinger et al., 2011, cited in Arcadis 2016).	<u>Unlikely</u> A habitat assessment along a 3.7 kilometre reach of the Georges River between the crossings of Cambridge Avenue and the M5 Southwestern Motorway at Moorebank was undertaken by Arcadis in 2016 (Arcadis 2016).	
Sydney Hawk Dragonfly <i>Austrocordulia leonardi</i> FM Act Listed: Endangered		Until recently the known distribution of Sydney Hawk Dragonfly has been extremely limited, being found in only three locations in a small area south of Sydney, from Audley to Picton including the Hawkesbury-Nepean, Georges River and Port Hacking drainages. This species has specific habitat requirements, including deep pools in permanently flowing rocky rivers with steep sides that provide shady resting areas. All specimens collected came from deep riverine pools with cooler water (along the Woronora River, Kangaroo Creek and Nepean River)(Arcadis 2016).	No habitats for either Archaeophya adamsi or Austrocordulia leonardi were detected in the survey area. Arcadis concluded that it was highly unlikely that the threatened dragonflies occur in the survey area and no further investigation or targeted surveys are required.	N/A

Department of the Environment (2016). Species Profile and Threats Database. Available from: http://www.environment.gov.au/sprat

NSW Office of Environment and Heritage (2016) Threatened Species Profiles. Available from: http://www.environment.nsw.gov.au/threatenedSpeciesApp/

\*Photos sourced from Australian Museum (http://australianmuseum.net.au/) and OEH Threatened Species Profiles (http://www.environment.nsw.gov.au/threatenedSpeciesApp/)



# **4 ASPECTS, IMPACTS & RISKS**

# 4.1 EIS Identified Impacts

The MPE Stage 1: Environmental Impact Statement identified the following Biodiversity risk related to the current Project site:

- Environmental impacts resulting from the inadvertent removal and/or modification of areas containing populations, endangered ecological communities and/or habitat for threatened species.
- Environmental impacts resulting from the collective loss of vegetation and fauna habitat across the landscape, as a result of removal and/or modification of native vegetation and fauna habitat.
- Vegetation clearing (including riparian areas) and loss and fragmentation of foraging, nesting and roosting areas.
- Environmental impacts resulting from the loss of hollow bearing trees and fauna habitat.
- Environmental impacts resulting from the permanent loss of biodiversity due to changes in hydrological function of the Project site and lowering of water quality, including potential impacts to groundwater dependent ecosystems.
- Environmental impacts resulting from the loss of biodiversity due to weed infestation.

# **4.2 Construction Impacts**

Further to Section 4.1, construction impacts directly related to the Project are described in Table 6 and the aspects and impacts register in the CEMP. Management measures to address these identified risks are included in Sections 5 and 6.

Table 6 Potential construction impacts to flora and fauna

Construction Activity	Description of Potential Impact	Management/Mitigation Measures Required		
Clearing and grubbing of vegetation within work site.	The Project site consists almost entirely of planted trees with a mown or managed understorey, and does not meet the criteria for any threatened ecological communities. One small area (0.1 ha) of native vegetation (as defined within this plan) adjoins the disused rail line bordering the south- eastern boundary of the Project site (Figure 3-1). Potential impact relates to inadvertent removal of native vegetation.	Exclusion fencing to delineate site construction boundary and any areas of Native Vegetation within close proximity to construction works. Awareness of exclusion areas to be communicated within site induction		
	Non-native vegetation clearing for the Project would include the removal of mature, planted eucalypts (such as Tallowwood, Sydney Blue Gum, Spotted Gum and Lemon-scented Gum), as well as mown or understory plants throughout the site. The clearing boundary is defined as the limits of construction (i.e. the Project Construction footprint in Figure 1-1).	<ol> <li>Pre-clearing survey to be undertaken by ecologist to determine habitat value of vegetation.</li> <li>If no habitat significance identified, then removal as per Section 5.1 of this document to be undertaken.</li> <li>If habitat significance is identified, ecologist to determine whether habitat is occupied, and to safely remove fauna (if possible and licenced to do so). No eggs/chicks are to be removed.</li> <li>Once clear of fauna, vegetation may be cleared.</li> </ol>		
	Fauna mortality Fauna injury or mortality is most likely to occur during vegetation clearing activities, but also may result from collisions with construction vehicles or	Pre-clearing surveys Fauna Handling Procedures		



Construction Activity	Description of Potential Impact	Management/Mitigation Measures Required
	plant, or accidental entrapment in plant, trenches or other earthworks.	
	Removal of dead wood and dead trees. Vegetation clearing may result in the removal of dead timber containing arboreal and ground hollows. Initial surveys have not identified the presence of any hollows and the EIS states that habitat features such as ground timber and hollow logs are absent from cleared and disturbed areas.	Pre-clearing surveys will identify these features if present, prior to removal, and assess whether they can be salvaged and relocated
	Unauthorised works	Unlikely to occur. Additional
	Removal of vegetation outside defined work area, possibility of removing threatened species, fines incurred.	ecological survey would be required
	Disturbance of soils Erosion of soils, uncontrolled runoff, sediment deposited into surrounding vegetated areas and water courses.	Erosion and sediment control measures
	Increased movement of people, vehicles, machinery, vegetation waste and soil may also facilitate the introduction or spread of weeds.	
Site	Impacts to roost sites in buildings	Preclearance surveys, including
establishment	The buildings currently on the Project site offer limited habitat features to native fauna, although they may support potential roosting habitat for microchiropteran bats. Given that inspection of these buildings was not possible during site surveys, it is assumed that some of the buildings offer potential fauna habitat and will be impacted during site establishment and demolition.	echolocation call recording and dawn/dusk surveys to confirm any roost sites
Demolition	Noise and Lighting impacts	Directional lighting will be used where
and construction activities	Indirect impacts on biodiversity could potentially be caused by noise during demolition and site establishment activities. These activities could alter behaviour on sensitive species such as nocturnal birds, nocturnal mammals, Microchiropteran bats, and small diurnal birds. Artificial lighting has potential to further disorientate species.	lighting is required in construction areas
Demolition	Use of chemicals / fuels (potential for spills)	Refer to CEMP
and construction activities	Any fuel or chemical spills associated with construction have the potential to impact habitats, particularly downstream aquatic habitats via stormwater systems or waterways.	
	This will be managed on site through the use of spill kits, appropriate storage and in accordance with emergency response protocols contained in the CEMP.	
Removal of	Impacts to threatened flora species, threatened EEC	An exclusion zone will be placed
spur	Pre-clearance surveys undertaken in February 2019 indicated that no threatened flora species or hollow- bearing trees are located within, and 20m either side, the construction area.	minimise potential impact on surrounding vegetation



## 4.2.1 Timing of Vegetation Clearance Works

Vegetation clearance is scheduled to occur and be completed within the first six months of construction with an expected commencement date of late June to early July 2017. The start date is subject to receiving all project approvals.

### 4.2.2 Proposed Infrastructure

All existing vegetation and infrastructure within the Project site boundary will be cleared / demolished (refer to Figure 1-1 MPE Site boundary highlighted yellow). Existing vegetation and infrastructure outside the site Project boundary will be retained and protected. The proposed IMEX infrastructure is illustrated in .



STAGE

MOOREBANK AVENUE



Figure 4-1 Proposed IMEX Terminal Layout (subject to change) - Extract from EIS (Hyder, 2015)



# **5 MANAGEMENT MEASURES**

This Section describes the overall approach and principles associated with managing and mitigating Biodiversity risks during the Project Construction. The management measures in Table 11 are based on the mitigation measures compiled from the EIS, Submissions Report (Final Compilation of Mitigation Measures) and the Minister's Conditions of Consent (CoC), EPBC Act approval, as well as the requirements and standards of LOGOS and the contractor.

A Vegetation Clearance Protocol is outlined in Section 5.1.



#### Table 11 Stage 1 Construction, Management Action and Responsibilities

ltem	Action	Trigger/Timing	Responsibility	Requirement
Induction				
FF1.1	All site personnel shall undergo site specific induction training, which will include environmental awareness and Flora and Fauna management training. Toolbox meetings will also be undertaken as and when required and may be triggered by the detection of a threatened species or noxious weed (for example); covering specific environmental issues and Flora and Fauna control measures and identified threatened species as identified in this CFFMP. All staff shall be notified in the induction that clearing is limited to the construction footprint, and that clearing in Commonwealth Land is prohibited.	Ongoing	Construction Manager All site personnel	FCMM 8A
FF1.2	<ul> <li>Induction training must also include bushfire hazards and risks. The bushfire threat during Stage 1 construction is considered to be low. However, there is a risk of ignition of adjoining bush to the south of the Project. Grassfires tend to be less intense than a forest fire however they can still generate enormous amounts of radiant heat and it is important that:</li> <li>all site offices would be accessible via all-weather access roads suitable for firefighting vehicles;</li> </ul>	Ongoing	Construction Manager All site personnel	Commonwealth Approval – 5h)
	<ul> <li>water supply must be readily identifiable and appropriate signage must be provided; and</li> <li>application of restrictions during days of elevated fire danger including all activities likely to cause sparks or fire.</li> <li>On days declared 'Total Fire Ban', no hot works to be undertaken and there is to be no high-risk activities or plant and equipment to be used for:</li> <li>Grass or vegetation reduction works (including mowing/slashing);</li> <li>Arborist works (chainsaw);</li> <li>Vehicle operations in long grass;</li> <li>Other than – (Emergency works).</li> </ul>			
Pre-clearin	ng			
FF2.1	No-go areas are identified as any area outside of the Project construction footprint. To minimise the extent of native vegetation clearing upon Commonwealth Land and the potential clearing of Nodding Geebung and Small-flower Grevillea, these no-go areas will be clearly identified on construction plans and include the southern and eastern boundaries of the site. The project boundaries will be physically	Prior to vegetation clearing activities	Construction Manager Environment Manager Site Supervisor	CoC E34 d) ii) f) Commonwealth Approval - 5c, 5d, 5h



ltem	Action	Trigger/Timing	Responsibility	Requirement
	demarcated on site with exclusion zone signage, as well as on construction plans to minimise the potential for staff and workers clearing outside the project boundaries. Existing chain link fencing on project boundaries will be inspected and fixed where necessary prior to clearing activities commencing.			
	The extent of vegetation clearing is restricted to the MPE Stage 1, Package 2 construction boundary and is to be clearly identified on pre-clearing surveys and construction plans. Clearly identifying sensitive areas ('no-go areas') which cannot be impacted by construction and managing clearing such that clearing activities are constrained to these approved areas only. The boundary between the area to be cleared and adjoining vegetation will be clearly marked with high visibility fencing. This will also act to exclude fauna from entering the construction areas and reduce potential for direct fauna mortality.			
FF2.2	Trees will be removed for the construction of a permanent access point to the terminal site. Retained trees include:	Details of tree protection must be	Construction Manager	CoC E34 d) ii)
	1. The existing mature trees located on the eastern side of Moorebank Avenue shown on Drawing LA01 (Landscape Masterplan) (dated 30.3.2015)	provided to the Certifying Authority prior to the commencement of	LINIOIIIIent Managei	
	2. Trees adjacent to the southern boundary of the site (as shown in Figure 3-2).			
	3. Habitat trees marked on Figure 3-2 are to be retained	construction.		
	Trees to be retained shall be protected and maintained during preconstruction and construction activities in accordance with AS4970-2009 Protection of trees on development sites. This requires the establishment of Tree Protection Zone (TPZ), so that the trees remain viable.			
	The radius of the TPZ is calculated for each tree by multiplying its DBH x 12. Fencing of the TPZ should be erected before any machinery or materials are brought onto the site and before the commencement of works including demolition.			
	AS4687 specifies applicable fencing requirements. Shade cloth or similar should be attached to reduce the transport of dust, other particulate matter and liquids into the protected area. Fence posts and supports should have a diameter greater than 20 mm and be located clear of roots.			
	Signs identifying the TPZ should be placed around the edge of the TPZ and be visible from within the development site.			
FF2.3	The project Ecologist to undertake a pre-clearing survey at least two weeks prior to vegetation clearing to identify any potential threatened species, endangered	Prior to site disturbance	Construction Manager	CoC E34 d) ii)



Item	Action	Trigger/Timing	Responsibility	Requirement
	<ul> <li>vegetation, weed infestation and habitat trees. The project Ecologist will identify at a minimum:</li> <li>The species, relative density and location of any weeds;</li> <li>Locations of threatened flora and fauna species and habitat or hollow bearing trees;</li> <li>Echolocation call recording and dawn/dusk surveys to confirm if the buildings are being used as roosting sites for any microchiropteran bats;</li> <li>Trees which require limbs to be removed;</li> <li>Native wildlife (e.g. reptiles, frogs) that can be captured and relocated; and</li> <li>Identification of pest fauna species.</li> </ul> Should any threatened species be identified within the area to be cleared, the Environment Manager will notify the Project Manager immediately. See also FF7.3. Should any hollow bearing trees be identified within the area to be cleared, the NBMS will be implemented prior to clearing (Appendix D).		Environment Manager Ecologist	
FF2.4	<ul> <li>Ecologist to provide report with plans marking which trees can be removed. Based on the results of these preclearance surveys, mark up trees as follows (with spray paint on their trunks in a visible location):</li> <li>'H' = Habitat Tree. If hollow-bearing or habitat trees are identified as requiring removal the two-staged clearing process outlined in FF3.2 and Section 5.1 is to be implemented and the clearing supervised by an ecologist;</li> </ul>	Prior to site disturbance	Construction Manager Environment Manager Ecologist	CoC E34 d) ii)
	<ul> <li>Ecologist has assessed the tree and it is ready for removal;</li> </ul>			
	Ecologist has assessed the tree and it requires pre-inspection immediately prior to, and during removal. Two-staged clearing process outlined in in FF3.2 and Section 5.1 is to be implemented and the clearing supervised by an ecologist.			
FF2.5	If fauna microhabitat (such as hollow logs) are identified, these will be removed from areas to be cleared and relocated outside of any exclusion fencing to suitable nearby bushland areas in the presence of an ecologist, as described in the Vegetation Clearance Protocol.	Ongoing	Construction Manager Environment Manager Ecologist	CoC E34 d) ii) Best Practice Commonwealth Mitigation Measure
FF2.6	The following alternative vegetation removal strategy is to be applied for the removal of up to 15 Tallowwood trees associated with IMEX RfMA 003 <i>Proposed for Main</i>	During vegetation clearance	Construction Manager	IMEX RfMA and Accordance



ltem	Action	Trigger/Timing	Responsibility	Requirement
	<i>IMT Construction Haul Road</i> , whose root structure has been impacted and are at risk of falling:	associated with IMEX RfMA and	Ecologist Construction supervisors	Assessment 003
	1. Ecologist to undertake pre-clearing survey and determine whether there is habitat	AA 003.		
	2. If no habitat is present, remove trees as per CFFMP			
	3. If habitat is present, ecologist to determine whether the habitat is occupied and remove fauna if possible if licenced to do so. No eggs/chicks are to be removed.			
	4. Once clear of fauna, the tree can be removed.			
Clearing				
FF3.0	To ensure that no more than 17 individual Nodding Geebungs and no more than 634 Small-flow Grevillea are cleared, the following will be undertaken:	Ongoing	Environment Manager	Commonwealth Condition No.
	<ul> <li>Recording of individuals cleared of each species cumulatively</li> <li>Reconciling of totals of individuals of each species cleared against MPES1 and MPES2 cumulatively.</li> </ul>			5d
FF3.1	Clearing of vegetation will be timed to avoid periods when rain is forecast in accordance with Chapter 4.4.2 of 'the Blue Book' and will not be undertaken during overland flow events.	Ongoing	Construction Manager Construction supervisors	CoC E34 d) ii) Best Practice
FF3.2	<ul> <li>No clearing of any vegetation outside of the project footprint is permitted and clearing of native vegetation will be minimised where possible. Additional project approvals will be required.</li> <li>Clearing of vegetation outside of the defined clearing permit boundary is not permitted. Ecologist to be present on site during the clearing process for red flagged trees ('H' and ). The two stage clearing process is outlined below and in Section 5.1.</li> <li>Stage 1:</li> <li>Non-habitat vegetation removal must be undertaken a minimum of 48 hours prior to habitat tree removal. Habitat trees are to remain standing for 48 hours before clearing to allow fauna to vacate the habitat on their own accord.</li> <li>Stage 2:</li> <li>Immediately prior to felling, the habitat tree is to be knocked with an excavator bucket (or other machinery) to encourage fauna to evacuate the tree under the</li> </ul>	During vegetation clearance	Construction Manager Construction supervisors Ecologist	CoC E34 d) ii) FCMM 8A



habitat.

ltem	Action	Trigger/Timing	Responsibility	Requirement
	<ul> <li>Felled trees must be left on the ground for a short period to allow any trapped fauna the opportunity to escape.</li> <li>Felled hollow-bearing trees must be inspected by an ecologist immediately to check for injured or immature fauna.</li> <li>Animals found prior to or during clearing activities will be released outside of any exclusion fencing to surrounding suitable habitat.</li> <li>If any animal is injured, contact the relevant local wildlife rescue agency (e.g. WIRES) and/or veterinary surgery as soon as practical. Until the animal can be cared for by a suitably qualified animal handler, if possible minimise stress to the animal and reduce the risk of further injury by:</li> </ul>			
	<ul> <li>Handling fauna with care and as little as possible.</li> </ul>			
	<ul> <li>Covering larger animals with a towel or blanket and placing in a large cardboard box.</li> </ul>			
	<ul> <li>Placing small animals in a cotton bag, tied at the top. Keeping the animal in a quiet, warm, ventilated and dark location.</li> </ul>			
	<ul> <li>In the case of arboreal or flying mammals attempts will be made to relocate the den or roost. After capture, the animal(s) will be held by a trained wildlife carer for a period of no longer than two weeks until the roost or den can be relocated, either as an entire tree or part thereof.</li> <li>Work may recommence once the animal(s) have been captured and removed from the area.</li> <li>Felled trees will be placed between cleared and remnant bushland where possible to provide runways of ground cover for dispersal of animals.</li> <li>Excess material may be mulched and used on site.</li> <li>Remove unused mulch to designated stockpile locations and do not use mulch within 50m of waterways or drainage lines.</li> </ul>			
FF3.3	Fauna Handling	During vegetation	Construction Manager	CoC E34 d) ii)
	Only the ecologist or fauna handler to touch or move fauna.	clearing	Environment Manager	FCMM 8A
	If fauna is present, allow to move through worksite. If fauna does not relocate, or is injured (see also FF8.1), contact the ecologist, fauna handler, WIRES or local veterinary surgery as soon as practical to assist in relocation to adjacent retained		Ecologist	Commonwealth Approval – 5 f)



ltem	Action	Trigger/Timing	Responsibility	Requirement
	Where handling of frogs is necessary, the risk of Chytrid pathogen transfer will be minimised and will follow the OEH Hygiene Protocol for the Control of Disease in Frogs (DECCW 2008a) as follows:			
	<ul> <li>Hands to be cleaned / disinfected between each frog or a new pair of disposable gloves used for each sample.</li> <li>A 'one bag – one frog / tadpole' approach to handling will be used where capture and relocation is necessary. Bags are not to be reused.</li> </ul>			
Weed and	Pathogen Management			
FF3.4	<ul> <li>Management of noxious weeds is to be undertaken in accordance with the Noxious Weeds Act 1993 and include details relating to the monitoring, management and where necessary eradication of weeds, disposal of green waste, and vehicle/plant weed wash down protocols including:</li> <li>Weed areas to be flagged;</li> <li>Weeds to be sprayed two weeks prior to clearing or stripped and disposed of offsite at a licenced waste facility. Weedy material must not be mulched or retained on site;</li> <li>Equipment used for treating weed infestation(s) will be cleaned prior to moving to a new area within the Proposal site to minimise the likelihood of transferring any plant material and soil;</li> <li>Soil stripped and stockpiled from areas containing known weed infestations are to be stored on cleared land at least 40 m from native vegetation. Stockpiles to be bunded and covered to minimise potential of seed washing away;</li> <li>Weed contaminated spoil to be removed to licenced landfill and</li> <li>Plant and equipment brought on to site must be cleaned and free of deleterious material, mud and other material that may harbour weed seeds</li> <li>Weekly inspections will also be undertaken. The identification of weeds will be included as part of this inspection.</li> </ul>	It is noted that no noxious weeds are described as occurring within the Project site, however the presence/absence of noxious weeds is to be confirmed by an ecologist prior to clearing and bulk earthworks commencing.	Construction Manager Environment Manager	CoC E34 d) iv) FCMM 8A
FF3.5	All vehicles and other equipment to be used on site will be checked upon arrival to site to ensure it is free from excessive soil and vegetative matter to minimise the likelihood of introducing weeds and plant pathogens.	Ongoing	Construction Manager Environment Manager	Commonwealth Approval – 5h)
	Where necessary vehicles will be cleaned.			
Monitoring				



ltem	Action	Trigger/Timing	Responsibility	Requirement
FF4.1	The Environment Manager will undertake weekly inspections and monitoring of construction activities to ensure compliance and conformance with the requirements of the CoC and this plan. Monitoring will include inspections on the integrity of flora/fauna exclusion zones and the identification of potential noxious weeds and endangered species.	Weekly	Construction Manager Environment Manager	CEMP CoC E34 d) vii)
FF4.2	Daily inspections of controls will be made by Supervisors and maintenance will be recorded in site diaries during active site works.	Daily	Construction supervisors	CEMP CoC E34 d) vii)
FF4.3	Annual monitoring and maintenance of nest boxes in Spring	Annually	Contractors Ecologist	NBMS
Revegetat	tion			
FF5.1	<ul> <li>The immediate intent of rehabilitation actions throughout the Project site is to re- establish site surfaces as soon as possible after disturbance to assist with erosion mitigation, and prevent the establishment of weed species. Actions will include:</li> <li>Rehabilitation to commence as soon as practical after use of disturbed area has ceased.</li> <li>Where soil has been compacted, ripping may be required prior to re-spread of topsoil.</li> <li>Seed with native species to stabilise disturbed areas.</li> <li>Where rainfall is not sufficient, watering will be required.</li> <li>Where required, install temporary fencing until stabilisation is achieved.</li> <li>Ongoing treatment of weed infestations is required throughout construction.</li> </ul>	Ongoing	Construction Manager Environment Manager	CoC E34 d) iii)
General N	Management			
FF6.1	Construction plant, equipment and materials are not to be stored within the dripline of any trees or vegetation to be retained or block access to any fire trails	Ongoing	Construction Manager Environment Manager Construction supervisors	Best Practice
FF6.2	A site speed limit of 20km/h will be adhered to by all personnel to minimise the potential for fauna to be struck by a vehicle within the construction areas. All vehicles and plant in operation during construction are to adhere to site rules relating to speed limits.	Ongoing	All site personnel	Best Practice FCMM 8A
FF6.3	Haul roads and access tracks will be directed clear of the tree drip line.	Ongoing	All site personnel	Best Practice



ltem	Action	Trigger/Timing	Responsibility	Requirement
FF6.4	Undertake a pre-start-up check for sheltering native fauna of all infrastructure, plant and equipment and/or during relocation of stored construction materials	During Construction	All site personnel	FCMM 8A
FF6.5	Directional lighting will be used where lighting is required in construction areas to minimises disruption to fauna foraging, nesting or roosting behaviours	During Construction	Construction supervisors	FCMM 8A
FF6.6	Personnel are not permitted to hunt, fish, feed, capture, extract, or otherwise disturb aquatic, animal, or vegetative species except in accordance with this CFFMP.	Ongoing	All site personnel	Best Practice
FF6.7	If any pits/trenches are to remain open overnight, they are to be securely covered, where reasonable and feasible. Alternatively, fauna ramps (logs or wooden planks) are to be installed to provide an escape for trapped fauna.	During Construction	Construction Manager Environment Manager Ecologist	FCMM 8A
FF6.8	Unauthorised access to site during construction will be managed in accordance with the approved Construction Traffic and Access Management Plan. Where required, additional traffic control and warning signs would be installed during vegetation clearing activities.	During Construction	Construction Manager Environment Manager Ecologist	Commonwealth Approval – 5h)
FF6.9	Any additional construction areas, such as site offices, construction stockpile locations and machinery/equipment laydown areas will be located in previously cleared areas where possible.	During Construction	Construction Manager Environment Manager	EPBC Flora and Fauna Mitigation Measure
FF6.10	Dust suppression activities to be undertaken where appropriate.	During Construction	Construction Manager Construction supervisors Environment Manager	EPBC Flora and Fauna Mitigation Measure
FF6.11	Frequent maintenance of construction machinery and plant will be undertaken to minimise unnecessary noise.	During Construction	Construction Manager Construction supervisors	EPBC Flora and Fauna Mitigation Measure
FF6.12	Locate soil or mulch stockpiles away from watercourses and key stormwater flow paths to limit potential transport of these substances into the watercourses via runoff	During Construction	Construction Manager Construction supervisors	EPBC Flora and Fauna Mitigation Measure
FF6.13	Spill kits will be appropriately located to allow for timely response to uncontained spills.	During Construction	Construction supervisors	EPBC Flora and Fauna Mitigation Measure



ltem	Action	Trigger/Timing	Responsibility	Requirement
Threatene	d Species			
FF7.1	Management of Eastern Bentwing-Bat The project Ecologist is to undertake a pre-clearing survey of the buildings to be removed from within the Project site. This survey must include a combination of echolocation call recording and dawn/dusk surveys to confirm if the buildings are currently being utilised for roosting. If confirmed, demolition of the buildings may be restricted to winter, outside of the critical breeding season.	Pre-Clearance	Construction Manager Environment Manager Ecologist	FCMM 8A
FF7.2	<b>Management of Grey-headed Flying Fox</b> The project Ecologist is to undertake a pre-clearing survey to detect the presence of any threatened species, including the Grey-headed Flying Fox.	Pre-Clearance	Construction Manager Environment Manager Ecologist	FCMM 8A
FF7.3	<ul> <li>Unexpected Finds Procedure</li> <li>Preclearance surveys will be used to identify the presence of any previously unrecorded threatened flora and/or fauna species within the Project site. Examples of such threated flora species include Hibbertia sp. Bankstown and Bynoe's Wattle. Upon detection of a threatened species:</li> <li>Stop works;</li> <li>Notify supervisor/environment team/principal;</li> <li>Environment advisor to contact ecologist to attend site;</li> <li>Ecologist to confirm presence of threatened species;</li> <li>Environment advisor to notify OEH and DPI Fisheries if it is a threatened species;</li> <li>An assessment will be undertaken regarding whether the species is a critical stage of its life cycle;</li> <li>Determine mitigation measures in consultation with OEH and DPI Fisheries (including relocation);</li> <li>Update relevant environmental management plans, procedures, monitoring requirements, induction, toolbox talks, environmental control maps and biodiversity offset requirements where necessary;</li> <li>Brief all staff on updated mitigation measures; and</li> <li>Works will not recommence until the species has vacated the habitat or can be relocated. No fauna will be relocated without the consent of the OEH and DPI Fisheries.</li> <li>If threatened flora species are identified, translocation will be considered.</li> </ul>	Upon detection of a threatened species.	Construction Manager Environment Manager Ecologist	CoC E34 d) vi) CoC E31A FCMM 8A



ltem	Action	Trigger/Timing	Responsibility	Requirement
Incident F	Response			
FF8.1	<ul> <li>If any animal is injured, contact the relevant local wildlife rescue agency (e.g. WIRES) and/or veterinary surgery as soon as practical. Until the animal can be cared for by a suitably qualified animal handler, if possible minimise stress to the animal and reduce the risk of further injury by:</li> <li>Handling fauna with care and as little as possible.</li> <li>Covering larger animals with a towel or blanket and placing in a large cardboard box.</li> <li>Placing small animals in a cotton bag, tied at the top.</li> <li>Keeping the animal in a quiet, warm, ventilated and dark location.</li> </ul>	If injured terrestrial animals are found prior to or during clearing activities.	Construction Manager Environment Manager Ecologist All site personnel	FCMM 8A Best Practice
FF8.2	<ul> <li>Where perceptible impacts to terrestrial habitats are noted (not included within the project approval), the following procedure will be followed and reported:</li> <li>Undertake additional investigation to ascertain the actual cause (project related or other);</li> <li>Assess the impact against the performance measures and indicators;</li> <li>If project related, consult relevant government agencies;</li> <li>Develop and implement a specific response plan to prevent further impacts; and</li> <li>Undertake remediation as required.</li> </ul>	If perceptible impacts noted during monitoring activities	Construction Manager Environment Manager Ecologist	Best Practice



## **5.1 Vegetation Clearance Protocol**

#### Preclearance inspections

The project Ecologist is to undertake a pre-clearing survey within two weeks of vegetation clearing to identify any potential threatened species, endangered vegetation, weed infestation and habitat trees. The ecologist will identify at a minimum:

- The species, relative density and location of any weeds;
- Locations of threatened flora and fauna species and habitat or hollow bearing trees;
- Echolocation call recording and dawn/dusk surveys to confirm if the buildings are being used as roosting sites for any microchiropteran bats;
- Trees which require limbs to be removed;
- Native wildlife (e.g. reptiles, frogs) that can be captured and relocated; and
- Identification of pest fauna species.

Should any threatened species be identified within the area to be cleared, refer to the Unexpected Finds Protocol in Table 11 (FF7.3).

Prior to the commencement of clearing, to ensure that no more than 17 individual Nodding Geebungs and no more than 634 Small-flower Grevillea are cleared, the following will be undertaken:

- Confirm the individuals cleared of each species to date
- Confirm the total individuals of each species cleared against MPES1 and MPES2 cumulatively to date.

Based on the results of these preclearance surveys, mark up trees as follows (with spray paint on their trunks in a visible location):

- (H' = Habitat Tree. If hollow-bearing or habitat trees are identified as requiring removal the two-staged clearing process outlined below is to be implemented and the clearing supervised by an ecologist;
- Ecologist has assessed the tree and it is ready for removal;
- • = Ecologist has assessed the tree and it requires pre-inspection immediately prior to, and during removal. Two-

#### Stage 1:

• Non-habitat vegetation removal must be undertaken a minimum of 48 hours prior to habitat tree removal. Habitat trees are to remain standing for 48 hours before clearing to allow fauna to vacate the habitat on their own accord.

#### Stage 2:

- Immediately prior to felling, the habitat tree is to be knocked with an excavator bucket (or other machinery) to encourage fauna to evacuate the tree under the supervision of an ecologist. The tree may then be felled.
- Felled trees must be left on the ground for a short period to allow any trapped fauna the opportunity to escape.
- Felled hollow-bearing trees must be inspected by an ecologist immediately to check for injured or immature fauna.
- Animals found prior to or during clearing activities will be released outside of any exclusion fencing to surrounding suitable habitat.
- If any animal is injured, contact the relevant local wildlife rescue agency (e.g. WIRES) and/or veterinary surgery as soon as practical. Until the animal can be cared for by a suitably qualified animal handler, if possible minimise stress to the animal and reduce the risk of further injury by:
  - Handling fauna with care and as little as possible.
  - Covering larger animals with a towel or blanket and placing in a large cardboard box.
  - Placing small animals in a cotton bag, tied at the top. Keeping the animal in a quiet, warm, ventilated and dark location.
- In the case of arboreal or flying mammals, attempts will be made to relocate the den or roost. After capture, the animal(s) will be held by a trained wildlife carer for a period of no longer than two weeks until the roost or den can be relocated, either as an entire tree or part thereof.
- Work may recommence once the animal(s) have been captured and removed from the area.
- Felled trees will be placed between cleared and remnant bushland where possible to provide runways of ground cover for dispersal of animals.
- Excess material may be mulched and used on site. Remove unused mulch to designated stockpile locations and do
  not use mulch within 50m of waterways or drainage lines.



# 5.2 Rehabilitation

The immediate intent of rehabilitation throughout the Project is to re-establish site surfaces as soon as possible after disturbance to assist with erosion and sediment control and prevent the establishment of weed species.

The following measures will be undertaken as appropriate:

- Disturbed areas to be stabilised as soon as possible after ground disturbing activities have ceased. This will include one or more of the following measures:
  - Preparing compacted ground (scarification) and covering with topsoil
  - Hydroseeding with cover crop and/or native seed mix as appropriate
  - Spraying of polymer to stabilise exposed soil
  - Placement of geofabric to cover exposed areas
  - Spreading of mulch
  - Implementation of progressive landscaping
- Removal and/or treatment of noxious weeds
- Watering seeded areas until established
- Ensuring erosion and sediment controls are in place until stabilisation is achieved
- Obtaining cover crop and/or native seed mix from a reputable source

A landscape plan has been developed and nominates flora species to be utilised across the project and any relevant standards in terms of seed procurement in line with the approval documents and best practice. The early implementation of landscape plantings will be investigated in order to provide visual screening along Moorebank Avenue during construction.

# 5.3 Nest Box Management

At the time of the original approval of the CFFMP, a NBMS was not required to be developed as the RtS had not identified any hollow bearing trees. However, during pre-clearing surveys undertaken by Biosis, 25 hollows were identified in 13 hollow bearing trees across the MPE Stage 1, Package 2 site. Annexure B of the NBMS (see Appendix D) details the hollows identified in the MPE Stage 1, Package 2, Package 2 site and specific measures to be implemented relating to Package 2.

In accordance with this plan and advice received by DP&E during approval of this document, the NBMS approved by DP&E for MPE Stage 1 Package 1 has been adapted for use for Package 2 and is included as Appendix D. The amendments to the NBMS are consolidated within Annexure B of the NBMS and detailed below. Annexure B relates specifically to requirements for MPE stage 1, Package 2 and must be read in conjunction with the NBMS main document. Any measures outlined in other sections of the NBMS will be adhered to. Package 2 specific requirements of the NBMS are as follows:

- Section 4.1 Given the larger number of tree hollows to be removed for Stage 1, Package 2 (i.e. 33 hollows), the minimum offset ratio of 1:1 of nest boxes per hollow removed will be applied. The higher offset ratio of 2:1 as detailed within the NBMS is only recommended where very few hollows are to be removed.
- Section 4.3.1 Nest boxes for Stage 1, Package 2 are to be installed within land on the eastern bank of Georges River, as illustrated in Figure 4 of the NBMS. Where additional land is required to avoid over-crowding, nest boxes will be installed along the eastern bank of the Georges River immediately to the north of the area illustrated in Figure 4. The Southern Boot Land is not currently available for installation of nest boxes for Stage 1, Package 2.
- Section 4.3.2 and Section 4.3.3 Nest boxes will be installed and recorded by Waratah in accordance with the methodology provided in the NBMS. Data recorded (including GPS coordinates of individual nest box locations) will be appended to the NBMS.



 Section 5.1 and Section 5.2 – Monitoring and maintenance is required annually in spring for the duration of construction.

To satisfy nest box monitoring required in accordance with the NBMS, nest box monitoring was undertaken across both MPE and MPW in November 2018 by Arcadis Ecologists in order to assess the condition and number of nest boxes across these sites.

Based on these investigations, a memorandum (<u>Moorebank Precinct – Nest Box Advice, dated</u> <u>08 February 2019</u>) was developed on 8 February 2019 to consider the requirement to install additional nest boxes at the Moorebank Logistics Park (MLP). The memorandum provided a review of nest boxes installed to date and assessed the values and risks associated with the installation of additional nest boxes at MLP. This advice recommended that no additional nest boxes be installed for the following reasons:

- The total number of nest boxes installed within the Georges River Corridor exceeds the recommended densities (i.e. is oversaturated), favouring over-abundant, adaptable and/or aggressive species which outcompete less tolerant native species
- Availability of tree hollows and installation of nest boxes within the Bootland currently meet benchmark conditions so that additional supplementary nest boxes are not required
- In addition to the above, there is no suitable woodland present in the rail corridor and the southern Bootland has recently been burned; presenting installation risks, as well as risks to the highly sensitive land
- No threatened hollow-dependent fauna was recorded and therefore no habitat for these species will be removed. All hollows are in landscape planted trees in highly disturbed cleared or developed lands which do not provide habitat for threatened fauna
- Installation of nest boxes is likely to benefit over-abundant highly adaptable species to the detriment of other fauna, as observed during monitoring in November 2018.
- Based on this advice, no further nest boxes will be installed for the MPE Stage 1 site.



# **6 COMPLIANCE MANAGEMENT**

# 6.1 Roles and Responsibilities

Relevant roles and responsibilities associated with this CFFMP are presented in Table 8. It is important to note that all personnel are responsible for ensuring that the clearing limits are addressed and native flora and fauna species are protected.

Table 8 Roles and Responsibilities

Roles	Responsibilities
Construction Manager	<ul> <li>Oversee the overall implementation of this CFFMP</li> <li>Ensure that sufficient resources are allocated for the implementation of this CFFMP</li> <li>Ensure that the CEMP covers the management and mitigation measures presented in this CFFMP</li> <li>Ensure that the outcomes of the visual checks/ compliance and conformance construction monitoring/ incident reporting are systematically evaluated as part of ongoing management of construction activities</li> <li>Ensure audits of construction site records/ monitoring records/ incident reports are undertaken on a monthly basis; findings are shared with relevant site personnel and corrective actions are implemented</li> <li>Ensure that any required actions arising from the preclearance surveys, detection of a threatened species or if clearing is required outside of the approved Project development footprint are reported to the relevant personnel for further action and ensure that the actions are effectively implemented</li> <li>Ensure that qualified personnel conduct the preclearance surveys and any animal handling procedures</li> <li>Ensure all monitoring reporting requirements are met and maintained on site</li> <li>Authorise all monitoring reports and any revisions to this CFFMP</li> </ul>
Environment Manager Construction supervisors, contractors and subcontractors	<ul> <li>Understand and implement mitigation protocols as required in the CFFMP and any other required measures during construction</li> <li>Undertake relevant training to implement the requirements of this CFFMP</li> <li>All personnel are responsible for ensuring that the clearing limits are addressed and native flora and fauna species are protected.</li> <li>All site personnel to undertake toolbox talks in relation to the reporting process for injury/ death to fauna or clearing of flora occurring beyond the required limits for construction.</li> <li>Supervisors will be responsible for implementing environmental controls as outlined by the Environmental Manager.</li> </ul>
Ecologist	<ul> <li>Preclearance surveys must be undertaken by a suitably qualified and experience ecologist.</li> <li>The ecologist may also be responsible for providing advice to minimise potential impacts to any threatened and/or protected fauna species that may be recorded during the preclearance surveys or as incidental observations during the construction activities.</li> </ul>



## 6.2 Training

All site personnel shall undergo site specific induction training, which will include environmental awareness and flora and fauna management training. Through the environmental induction construction staff will be made aware of:

- The significance of the remnant vegetation and methods to avoid or minimise impacts
- The location of potential and actual habitat areas
- Locations of endangered ecological communities and all occurring or potentially occurring threatened species locations
- Vegetation clearing protocol and no-go zones including Commonwealth Land
- Weed management practices
- Fauna handling and rescue processes
- Penalties associated with environmental breach
- Emergency and incident response
- Spill management procedures including the management of chemical and fuel spills and fire.

Toolbox meetings will also be undertaken as and when required and may be triggered by the detection of a threatened species or noxious weed (for example).

Personnel directly involved in implementing flora and fauna control measures will be given specific training in the various measures to be implemented.

Records of all training are to be filed in accordance with the project filing system.

# 6.3 Monitoring, Auditing and Reporting

Auditing and reporting will be undertaken in accordance with the CEMP.

Monitoring under this plan will be undertaken by the Environment Manager during weekly inspections of construction activities to ensure compliance and conformance with the requirements of the CoC and this plan. In particular, weekly inspections will focus on the following biodiversity issues:

- Inspections of exclusion fencing
- Observations of fauna on site
- Inspections of clearing activities
- Identification of weeds and/or threatened species.

An Environmental Inspection Checklist will be used to maintain compliance, conformance and effectiveness of controls. Items that require action will be managed in accordance with the CEMP section 9.2.1, such as its documentation during environmental inspection. The site supervisor will be responsible for providing appropriate resources in terms of labour, plant and equipment to enable the items to be rectified in the nominated timeframes.

Daily inspections and maintenance of controls will be made by the Site Supervisors and maintenance will be recorded in site diaries during active site works.

Annual monitoring and maintenance of nest boxes will be undertaken in spring for the duration of construction.

# 6.4 Enquiries, Complaints and Incident Management

Enquiries, complaints and incident management will be undertaken as per the CEMP section 9.2.1, including those related to Flora and Fauna impacts.

## 6.5 Non-compliances, Non-conformances and Actions

It is the responsibility of all site personnel to report non-compliances and non-conformances to the Site Supervisor and/or the Contractor's EM.





Non-compliances, non-conformances and corrective and preventative actions will be managed in accordance with Section 9.2.1 of the CEMP.

## 6.6 Review and Management

Continuous improvement of this plan will be achieved by the ongoing evaluation of environmental management performance against regulatory environmental policies, legislative requirements, LOGOS's Environmental Policy, Project objectives and targets for the purpose of identifying opportunities for improvement.

The continuous improvement process is designed to:

- Identify areas of opportunity for improvement of environmental management and performance.
- Determine the cause or causes of non-conformances and deficiencies.
- Develop and implement a plan of corrective and preventative action to address any nonconformances and deficiencies.
- Verify the effectiveness of the corrective and preventative actions.
- Document any changes in procedures resulting from process improvement.
- Make comparisons with objectives and targets.

A copy of the updated plan and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure.

This plan will be reviewed annually as a minimum but may be updated more regularly depending on process changes and refinements or where there is identification of hollow bearing trees, unexpected threatened species, or as a result of an environmental incident.



# APPENDIX A OFFICE OF ENVIRONMENT AND HERITAGE CONSULTATION COMMENTS



Consultation comments were received by the OEH, Richard Bonner on Thursday, 16 February 2017 3:29pm. The comments and responses are outlined in the below table. The response was submitted to OEH on 17/2/17.

Comment Page number, section	Comments	Response
p.vi, table 1, CoC E34; p.42, table 11	The reference to FF 4 in table 11 does not exist.	How the effectiveness of the management measures outlined in table 11 would be monitored is outlined in Table 11 FF 4.1 and 4.2. This typo has been updated.
p.ix, table 2, FCMM 8A; p.42, table 11	It is not clear where the 'biodiversity study area' is and under what circumstances clearing of native vegetation of mature trees would be necessary.	The biodiversity study area is identified in the Environmental Impact Statement Figure 14-1: Ecological study area. The area for the purposes of this project is the extent of the MPE site shown in Figure 1-1 of this plan. The only time where vegetation would be required to be cleared outside of this area is if there were an expansion of the project footprint. If this were the case, then the appropriate approvals would be sought in order to undertake this work, prior to any work, including clearing of vegetation being undertaken outside of the project boundary.
	table 11 does not exist.	The following text has been included for clarity in Table 11 FF3.2: "No clearing of any vegetation outside of the project footprint is permitted. Additional project approvals will be required."
		Reference amended to FF3.2.
p.x, table 2, FCMM 8A; p.42, table 11	The reference to FF 3 in table 11 does not exist.	Reference amended to FF3.2.
p.18, figure1; p.27, figure 2; p.30 figure 3	Figure 1-1 shows an area covered by the management plan (the yellow hatched area) which does not align with the 'Stage 1 Site (Extent of Clearing)' area shown in figures 2 and 3. Is this because some of the yellow hatched area in Figure 1-1 will not be cleared at any stage? If not, amendments to some (or all) of these figures is required.	Figures 2 and 3 have been updated to show the extent of the Project
p.30, figure 3; p.33, table 9	Figure 3 does not show the locations of Nodding Geebung (Persoonia nutans) mentioned on page 33 (identified in areas north of Anzac Creek by Hyder Consulting).	This has been updated in line with the Environmental Impact Statement.



Comment Page number, section	Comments	Response
p.39, table 10	The location of the 1.25 ha of native vegetation and threatened fauna habitat to be cleared is not shown on figures 2 or 3.	Reference to the 1.25 ha of native vegetation clearing is incorrect and is related entirely with the rail link. This text has been deleted.
p.44, table 11, item FF2.3	The following amendments in shown in red to the 1 <sup>st</sup> sentence are recommended: The project Ecologist to undertake a pre-clearing survey within at least two weeks of prior to vegetation clearing to identify any potential threatened species, endangered vegetation, weed infestation and habitat trees.	Amended
p.55, s.6.2	It is recommended the induction program for construction staff also include emergency and incident response/spill management procedures (e.g. fire and chemical/fuel spills).	<ul> <li>Section 6.2 text amended to:</li> <li>"Through the environmental induction construction staff will be made aware of:</li> <li>The significance of the remnant vegetation and methods to avoid or minimise impacts</li> <li>The location of potential and actual habitat areas</li> <li>Locations of endangered ecological communities and all occurring or potentially occurring threatened species locations</li> <li>Vegetation clearing protocol</li> <li>Weed management practices</li> <li>Fauna handling and rescue processes</li> <li>Penalties associated with environmental breach</li> <li>Emergency and incident response</li> <li>Spill management procedures including the management of chemical and fuel spills and fire."</li> </ul>


## APPENDIX B THREATENED DRAGONFLY SPECIES SURVEY PLAN AND DPI FISHERIES CONSULTATION



## **APPENDIX C STAKEHOLDER CONSULTATION RESPONSE**



## APPENDIX D NEST BOX MANAGEMENT STRATEGY



## **APPENDIX E NEST BOX ADVICE**