

Moorebank Precinct East - Concept Plan Modification 2

(MP10_0193_MOD2)

Biodiversity Memorandum



SIMTA

SYDNEY INTERMODAL TERMINAL ALLIANCE

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Date 23/11/2016
To Westley Owers (Arcadis)
From Jane Rodd (Arcadis)
Copy to Nathan Cairney (Tactical Group), Stuart Hill (Arcadis)
Subject Moorebank Precinct East Intermodal Facility – Concept Plan Approval Modification (10_0193_MOD2) – Review of Biodiversity Impacts

Report Purpose

This report has been prepared to address the potential biodiversity impacts associated with Modification Proposal changes to the Concept Plan Approval (MP 10_0193) for an intermodal terminal (IMT) facility, warehousing and freight village at Moorebank, NSW (the Moorebank Precinct East Project (MPE Project) (formerly the SIMTA Project)). This report supports an application to modify the MPE Concept Plan Approval under section 75W (now repealed) of the *Environmental Planning and Assessment Act 1979* (EP&A Act), which continues to apply pursuant to transitional provisions.

Proposal Modification

Since the Concept Plan Approval, a number of design refinements have been made to address matters which were not contemplated at the time of the Concept Plan Approval.

The following changes to the MPE Project are now proposed (Modification Proposal):

- Extend the land to which the MPE Concept Plan Approval applies to recognise works on Moorebank Avenue and drainage works to the south and east of the MPE site
- Moorebank Avenue upgrade from the northern to the southern extent of the MPE site including alterations to the existing lane configuration, raising of the vertical alignment, some widening and ancillary services and infrastructure such as stormwater drainage on the western side of Moorebank Avenue
- Provision of an interim MPE site access to warehousing
- Reconfiguration of the internal road network within the MPE Stage 2 site and use of all internal roads by both light and heavy vehicles, rather than light vehicles only for internal road No.2
- Importation of clean general fill (approximately 600,000m³) material for bulk earthworks to adjust the building formation to support the functionality of the site stormwater and drainage system
- Change to the location of, and land uses within the freight village and provision of warehousing along the Moorebank Avenue frontage (previously identified as IMT)
- Changes to the staging of development including construction of all warehouses as part of the MPE Stage 2 Proposal
- Subdivision of the MPE site.

Biodiversity Assessment

Methodology

This assessment is based on desktop research and detailed field surveys, undertaken between 2011 and 2016. Field assessment of the biodiversity values of the MPE site has been conducted on a number of occasions between May 2011 and October 2016. Supplementary field investigations to quantify any changes in site conditions, account for additional impact areas and assess vegetation in accordance with the NSW Framework for Biodiversity Assessment (FBA) were undertaken in June and October 2016. The biodiversity impacts and offset requirements for the MPE Project were calculated using the FBA Credit Calculator in accordance with the FBA guidelines.

The Moorebank Avenue Upgrade overlaps the Moorebank Precinct West site (MPW site), and includes areas of native vegetation within the MPW Site. Subject to project approval, these areas will be cleared as part of the MPW Project, and biodiversity impacts have been assessed in the ecological assessment prepared for the MPW Concept Plan EIS (Parsons Brinckerhoff 2014) and the Biodiversity Assessment Report (BAR) prepared for the MPW Stage 2 EIS (Arcadis 2016). This assessment assumes that all areas within the MPW Site are cleared of native vegetation.

Existing Environment

Landscape value

The landscape value was assessed in accordance with the methodology in Appendix 4 of the FBA (OEH 2014). Two assessment circles were mapped to enable assessment of landscape values: an inner circle of 100 ha and an outer circle of 1000 ha. Both circles were centred on the MPE Site.

Landscape feature	Modification Proposal site
IBRA (Interim Biogeographic Regionalisation for Australia) bioregions and subregions	The Modification Proposal site is located within the Sydney Basin Bioregion and the Cumberland Subregion classified under IBRA.
Major Catchment Area	The Modification Proposal site is located within the Sydney Metropolitan CMA and the Cumberland CMA subregion.
Mitchell landscapes	The Modification Proposal site is located within the Georges River Alluvial Plain Mitchell landscape. This Mitchell Landscape is not currently listed in the credit calculator, so the Cumberland Plain Mitchell Landscape was used following advice from OEH (pers. comm. Biobanking Team, OEH, 25 August 2015).
Rivers, streams and estuaries	The Modification Proposal site is located within the Georges River catchment. The Georges River is located between 600 metres to one kilometre west of the Modification Proposal site, where it flows to the north then meanders south-east from Chipping Norton before draining into Botany Bay.

Landscape feature	Modification Proposal site
	<p>Anzac Creek originates from the MPW site west of Moorebank Avenue and extends to the north-east, to the south of the Modification Proposal site. The section of Anzac Creek to the south of the Modification Proposal site is considered to be a 3rd order stream.</p> <p>In addition to these named watercourses, there is a network of formalised drainage channels located in the south of the Modification Proposal site. These channels drain into the native vegetation to the east of the Modification Proposal site.</p>
Wetlands	No local or important wetlands occur in the outer assessment circle.
Native vegetation cover in landscape	<p>The native vegetation cover in the landscape was determined with reference to the regional vegetation mapping by OEH (2013). All native vegetation types mapped by OEH (2013) within the inner and outer assessment circles were considered to represent the current native vegetation cover. Native vegetation cover percentages were calculated as a proportion of all land within each assessment circle that contains mapped native vegetation.</p> <p>The current percent native vegetation cover in both the inner and outer assessment circles is 25-30%; the respective scores for native vegetation cover are 4.5 for the inner circle and 7.5 for the outer circle. The Proposal would result in a negligible reduction in the percent native vegetation cover in both the inner and outer assessment circles, and the future percent native vegetation cover in both circles remains at 25-30%. As the scores would remain unchanged, the value for native vegetation in the landscape is 0.</p>
Connectivity value	The small area of native vegetation within the Modification Proposal site has no connectivity with adjacent areas of native vegetation in the Boot land, and would not alter the existing connectivity values, sever native vegetation or form a hard barrier within the connecting link. As the Modification Proposal would not decrease the corridor width or the overstorey and understorey benchmark values, the score for connectivity value is 0.
Patch size	The size of the largest patch of native vegetation occurring within the majority of the Modification Proposal site is 0.1 hectares. In accordance with the criteria in Table 15 of Appendix 4 of the FBA, the patch size class is considered to be <i>small</i> with a corresponding patch size score of 1.
Landscape value score	<p>The landscape value score for the Proposal is 1. This score comprises:</p> <ul style="list-style-type: none"> ▪ Native vegetation cover – 0 (based on the deduction of the future percent native vegetation cover scores from the current percent native vegetation cover scores) ▪ Connectivity value – 0 ▪ Patch size - 1.

Native vegetation

The vegetation within the MPE site consists predominantly of planted and disturbed vegetation. Native vegetation within the MPE site consists of small, fragmented patches of vegetation and the disturbed edges of larger patches.

One native Plant Community Type (PCT) was identified within the MPE site, following review of existing information and structural and floristic attributes recorded during site assessments. The 0.1 hectare of Hard-leaved Scribbly Gum – Parramatta Red Gum heathy woodland of the Cumberland Plain, Sydney Basin identified in the MPE Site was not mapped in the Concept Plan Assessment, although this area was discussed in vegetation descriptions.

Two additional PCTs were identified within areas of proposed drainage works to the south and east of the MPE site. The three PCTs fall within the definition of threatened ecological communities listed under the TSC Act and/or the EPBC Act, based on analysis of existing vegetation maps and ground truthing (Figure 1).

Plant Community Type	Equivalent TEC	TSC Act Status	EPBC Act Status	Area within MPE site
Hard-leaved Scribbly Gum – Parramatta Red Gum heathy woodland of the Cumberland Plain, Sydney Basin (ME003)	Castlereagh Scribbly Gum Woodland in the Sydney Basin bioregion	Vulnerable	Endangered	0.1 ha
Broad-leaved Ironbark - Melaleuca decora shrubby open forest on clay soils of the Cumberland Plain, Sydney Basin Bioregion (ME002)	Cooks River – Castlereagh Ironbark Forest in the Sydney Basin Bioregion	Endangered	Critically Endangered	0.05 ha
Coastal freshwater lagoons of the Sydney Basin and South-east Corner (ME007)	Freshwater Wetlands on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions	Endangered	Not listed	0.01 ha

Given that the PCTs Broad-leaved Ironbark - Melaleuca decora shrubby open forest on clay soils of the Cumberland Plain, Sydney Basin Bioregion and Coastal freshwater lagoons of the Sydney Basin and South-east Corner would not be subject to specific impacts from the Modification Proposal, they are not considered further in this assessment. Should these minor areas be impacted under subsequent development applications, they would be assessed in further detail.

The site value score for the 0.1 hectare of Hard-leaved Scribbly Gum – Parramatta Red Gum heathy woodland of the Cumberland Plain, Sydney Basin identified in the Modification Proposal site was determined through assessment of site attribute data collected from one vegetation plot (QA). The site data is listed below; the resultant site value score is 68.23.

Plot Name	Site attributes									
	NPS	NO S	NMS	NGCG	NGCS	NGCO	EPC	NTH	OR	FL
ME003 Hard-leaved Scribbly Gum - Parramatta Red Gum heathy woodland of the Cumberland Plain, Sydney Basin Bioregion: Moderate/Good										
Bench mark	40	10-20	23-33	12-24	0-10	12-24	-	1	1	30
QA	29	32.5	13	24	20	18	46	1	0	38

Flora species

Twelve threatened flora species were identified in the FBA credit calculator as predicted flora species credit species. None of the predicted threatened flora species credit species were recorded on the MPE site during targeted surveys.



LEGEND

Plant Community Types (PB 2015/Arcadis 2015)

- Hard-leaved Scribbly Gum – Parramatta Red Gum heathy woodland of the Cumberland Plain, Sydney Basin (ME003)
- Parramatta Red Gum Woodland on moist alluvium of the Cumberland Plain, Sydney Basin (ME005)
- Broad-leaved Ironbark - Melaleuca decora shrubby open forest on clay soils of the Cumberland Plain, Sydney Basin Bioregion (ME002)
- Coastal freshwater lagoons of the Sydney Basin Bioregion and South East Corner Bioregion (ME007)
- Broad-leaved Ironbark – Grey Box – Melaleuca decora grassy open forest on clay/gravel soils of the Cumberland Plain, Sydney Basin (ME004)

Vegetation mapped within MPW site - not assessed

OEH (2013) vegetation mapping - western edge of Boot land

- Castlereagh Shale-Gravel Transition Forest
- Castlereagh Scribbly Gum Woodland
- MPE site
- External stormwater infrastructure
- Moorebank Avenue upgrades



Scale: 1:10,000 @ A4

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Figure 1 Plant Community Types (PCTs) identified in the Modification Proposal Site

The MPE site represents low quality habitat for threatened flora species, and targeted searches did not identify any threatened flora species within the MPE site. There are populations of several threatened flora species in the Boot land to the south and east of the MPE site. The closest records to the Modification Proposal site are of the endangered species *Persoonia nutans*, which occurs in the native vegetation adjoining the southern extent of the MPE site.

Fauna species

Fauna habitat in the MPE site is fragmented but contains specific fauna habitat components, including live trees, tree hollows, foraging resources, and groundlayer habitats such as ground timber and minor leaf litter. These resources offer sheltering, foraging, nesting and roosting habitat to a variety of fauna, including threatened fauna, occurring within the locality. Seven trees were identified as containing small hollows or fissures, all of which are located in the Moorebank Avenue road reserve.

A total of 25 threatened fauna species were derived from the PCTs identified on the Modification Proposal Site as predicted ecosystem credit species. Assessment of the potential presence of each species in the MPE site found that two species have a high likelihood of occurrence and 11 have a moderate likelihood of occurrence.

Six threatened fauna species were identified in the credit calculator as predicted fauna species credit species. None of the predicted threatened fauna species credit species were recorded or are considered likely to occur on the Modification Proposal Site (inclusive of the Modification Proposal).

Credit values

The credit value requirement for the PCT identified on the Modification Proposal site and its associated ecosystem species, as determined using the credit calculator, is presented below.

PCT	Associated EECs and/or Threatened Species	Loss in landscape value	Loss in site value score	Ecosystems credits required
Hard-leaved Scribbly Gum - Parramatta Red Gum heathy woodland of the Cumberland Plain, Sydney Basin (ME003)	Castlereagh Scribbly Gum Woodland of the Sydney Basin bioregion (VEC)	1	68.23	4

Biodiversity Impacts

The elements of the Modification Proposal, and their potential impacts on biodiversity, are considered in the table below.

Element	Biodiversity impacts
<p>Extend the land to which the MPE Concept Plan Approval applies to recognise upgrade works on Moorebank Avenue and drainage works to the south of the MPE site</p>	<p>Refer below.</p>
<p>Moorebank Avenue upgrade from the northern to the southern extent of the MPE site including modifications to the existing lane configuration, some widening and the provision of ancillary services and infrastructure such as stormwater drainage</p>	<p>Roadworks on Moorebank Avenue would result in removal of scattered planted trees over mown exotic grass verges in the road reserve. These trees include seven trees identified as containing small hollows or fissures, all of which are located in the Moorebank Avenue road reserve.</p> <p>As noted above, the Moorebank Avenue Upgrade site also extends into areas of EEC within the MPW Project, however the assessment of these impacts has been undertaken in the MPW Project, and therefore no further assessment is required for the Modification Proposal.</p> <p>The additional drainage works to the south and east of the MPE site may result in minor impacts to the edges of larger patches of PCTs. Should these areas be impacted under subsequent development applications, they would be assessed in further detail.</p>
<p>Provision of an interim site access to the warehousing from Moorebank Avenue</p>	<p>The vegetation in this area is planted and disturbed, and minimal biodiversity impacts are anticipated.</p> <p>This element would not result in any additional biodiversity impacts to those considered in the Concept Plan Assessment, therefore no further assessment is required for the Modification Proposal.</p>
<p>Reconfiguration of the internal road network within the MPE site and use of all internal roads by both light and heavy vehicles, rather than light vehicles only for internal road No.2</p>	<p>The vegetation in this area is planted and disturbed, and minimal biodiversity impacts are anticipated.,</p> <p>This element would not result in any additional biodiversity impacts to those considered in the Concept Plan Assessment, therefore no further assessment is required for the Modification Proposal.</p>

Element	Biodiversity impacts
<p>Importation of clean general fill material (of approximately 600,000m³) for bulk earthworks</p>	<p>The Modification Proposal would require clearing of only a very small, isolated and fragmented area of native vegetation, comprising 0.1 hectares of Hard-leaved Scribbly Gum – Parramatta Red Gum heathy woodland of the Cumberland Plain, Sydney Basin. All other areas to be impacted are planted and disturbed vegetation.</p> <p>The clearing of the entire MPE site was assessed in the Concept Plan Assessment; the loss of 0.1 hectare of Hard-leaved Scribbly Gum – Parramatta Red Gum heathy woodland of the Cumberland Plain, Sydney Basin was not previously assessed, as this area was not mapped. The impacts and offset requirements for this PCT have been calculated in accordance with the FBA.</p>
<p>Change to the location of and land uses within the freight village, and provision of warehousing along the Moorebank Avenue northern frontage</p>	<p>The vegetation in the new location for the freight village is planted and disturbed, and minimal biodiversity impacts are anticipated.</p> <p>This element would not result in any additional biodiversity impacts to those considered in the Concept Plan Assessment, therefore no further assessment is required for the Modification Proposal.</p>
<p>Changes to the staging of development including construction of all warehouses as part of Stage 2</p>	<p>Changes to staging would not result in any biodiversity impacts, therefore no further assessment is required for the Modification Proposal.</p>
<p>Subdivision of the MPE site</p>	<p>Subdivision would not result in any biodiversity impacts, therefore no further assessment is required for the Modification Proposal.</p>

Review of Concept Plan Approval

The MPE Concept Plan Conditions of Approval and Statement of Commitments that are applicable to biodiversity, and which would apply to the Modification Proposal, are listed in the table below.

Reference	Condition of Approval / Statement of Commitment	Timing
Schedule 3, Part 2.1 of approval instrument	<p>Biodiversity</p> <p>Any future Development Application shall include a Flora and Fauna assessment. The assessment shall:</p> <ol style="list-style-type: none"> a) assess impacts on the biodiversity values of the site and adjoining areas, including Endangered Ecological Communities and threatened flora and fauna species and their habitat, impacts on wildlife and habitat corridors, riparian land, and habitat fragmentation and details of mitigation measures, having regard to the range of fauna species and opportunities for connectivity (terrestrial, arboreal and aquatic) across the rail link between the site and the EHPL; b) include a Vegetation Management Plan that has been prepared in consultation with the NSW Office of Water; c) document how impacts to the <i>Persoonia nutans</i> and the <i>Grevillea parviflora</i> subsp. <i>parviflora</i> flora species have been minimised through the detailed design process; d) include the details of available offset measures to compensate the biodiversity impacts of the proposal where offset measures are proposed to address residual impacts, in particular the following should be considered: <ol style="list-style-type: none"> i. As stipulated in principle 2 of 'NSW offset principles for major projects (state significant development and infrastructure)', for terrestrial biodiversity, established assessment tools, such as the BioBanking Assessment Methodology (BBAM), are considered best practice; ii. the Biodiversity Offset Strategy will be undertaken in accordance with the 'NSW offset principles for major projects (state significant development and state significant infrastructure)'; and iii. Offsets shall be identified, and demonstrate that they can be secured. 	All conditions are to be addressed in future development applications.
SoC (biodiversity)	<p><u>Off-Set Impacts</u></p> <p>The Proponent will update the Preliminary Biodiversity Offset Strategy (Hyder Consulting 2013) in accordance with the NSW offset principles for major projects (state significant development and state significant infrastructure) and continue to consult with the Department of the Environment (DOTE) through the project approval processes.</p> <p>The offset package will be secured before any clearing of endangered ecological communities or threatened species is carried out.</p>	Address within 12 months of the approval of the planning application for the first stage of works (including the rail link) and secure offsets prior to vegetation clearing

Mitigation Measures

Biodiversity issues associated with the MPE Project would be managed in accordance with the Concept Plan Approval and associated SoCs tabled above. These are considered adequate to address the potential impacts of the Modification Proposal.

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