

North East Business Park

Land Based Environmental Management Plan for Matters of National Environmental Significance

7903-59

Prepared for
North East Business Park Pty Ltd

31 January 2014



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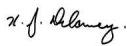
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Terminology

The term **EPBC Act** refers to the *Environment Protection and Biodiversity Conservation Act 1999*.

The term **NEBP** refers to North East Business Park.

The term **Developer** refers to the specific entity authorised under sections 130(1) and 133 of the EPBC Act to undertake the NEBP development in accordance with terms and conditions of the EPBC Act Approval granted to North East Business Park Pty Ltd on 18 December 2012. Authority to undertake the NEBP development cannot be transferred to a different entity without the consent of the Commonwealth Minister for the Environment.

The **Developer** is to ensure that the terms of engagement of any **Principal**, **Superintendent** and **Contractor** are consistent with the requirements of this LBEMP.

The term **MBRC** refers to the Moreton Bay Regional Council.

The term **CDotE** refers to the Commonwealth Department of the Environment.

The term **LBEMP** or **overarching LBEMP** refers to the North East Business Park Land Based Environmental Management Plan for Matters of National Environmental Significance V2 (Cardno 2014).

The term **DEHP** refers to the Queensland Department of Environment and Heritage Protection.

The term **MNES** refers to Matters of National Environmental Significance as defined by the EPBC Act.

1 Introduction

The Northeast Business Park (NEBP) is a multi-use business park that will integrate industry, commercial, marine development, residential, heritage and recreational greenspace precincts.

The NEBP encompasses an area of approximately 769ha within the Moreton Bay Regional Council (MBRC) administrative boundary. The NEBP will progress as a staged development with the development of specific precincts driven by location, industry demand and the finalisation of all approvals. The major precinct areas of the NEBP development include:

- > Mixed Industry and Business Area (MIBA);
- > Residential West Area (RWA);
- > Residential East Area (REA);
- > Marina (M) – comprising of a Marina, Hotel, Residential and Commercial spaces (plus associated dredging works within the Caboolture River); and
- > Open Space (OS) – comprising Community and Heritage spaces.

The approved NEBP site is currently comprised of a total of eight individual parcels of land¹ which will hereafter be referred to as ‘the site’. The individual land parcels, and the defined precinct area(s) within which they are located, are:

- > Lot 11 on SP130251 – MIBA Precinct;
- > Lot 2 on SP169551 – MIBA Precinct;
- > Lot 17 on RP902072 – MIBA Precinct;
- > Lot 15 on RP902073 – MIBA Precinct;
- > Lot 10 on SP130251 – MIBA, RWA and OS Precincts;
- > Lot 24 on SP158298 – RWA, REA, M and OS Precincts;
- > Lot 7 on RP845326 – RWA, REA and OS Precincts; and
- > Lot 12 on SP248894 – OS Precinct.

Both the NEBP site and associated precinct areas are illustrated on Figure 1. The relationship between the NEBP precinct areas and the individual land parcels that comprise the NEBP site is illustrated in Figure 2. A current aerial photograph of the NEBP site, with an overlay of the NEBP precinct area boundaries is presented in Figure 3.

The NEBP project was declared to be a “significant project” under Section 26 of the Queensland *State Development and Public Works Organisation Act 1971* by the Coordinator General on 21 June 2006 and as such was required to prepare an EIS for the project.

Following assessment of the EIS and Supplementary EIS, the NEBP development was approved with conditions by the Commonwealth’s Department of the Environment (DotE) under the provisions of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) on 18 December 2012.

This Land Based Environmental Management Plan for Matters of National Environmental Significance (LBEMP for MNES) has been prepared by Cardno in satisfaction of Condition 9 which requires the development of a LBEMP that must, at a minimum, address:

¹ It is noted that the number and real property descriptions of individual land parcels that form part of the approved NEBP site have changed in the time period since the project was approved by the Minister for the Environment on 18 December 2012 and will continue to change as various stages of the NEBP are developed and associated land sub-divisions occur.

- a. measures to minimise impacts on EPBC Act listed threatened species, including measures to care for injured fauna and a vegetation clearing strategy;
- b. measures to limit the spread of pests and invasive species;
- c. sediment and erosion controls; and
- d. measures to implement, monitoring, or improve the LBEMP.

The Conditions of Approval require that the LBEMP be approved by the Commonwealth Minister for the Environment prior to the clearance of native vegetation associated with the development of the NEBP.

It is noted that the Queensland development and assessment process (the Integrated Development Assessment Scheme or IDAS) for the NEBP is ongoing and to date only two precincts have been approved. The approved development precincts are the:

- > MIBA Precinct (refer MCU-2002-1079); and
- > Residential West Area Precinct (refer MCU-2004-1420).

In most instances, further IDAS permits and approvals are required before physical development of the above, and any other, precincts can commence.

This LBEMP reflects the staged nature of the NEBP development by:

- > providing an overarching framework and specifications for the management of MNES during the staged development of the NEBP; and
- > requiring the preparation of detailed LBEMPs that apply to specific works programs that are undertaken as part of the NEBP development.

This LBEMP framework recognises that the NEBP development is subject to the Queensland IDAS process, with associated permits and approvals requiring the development and implementation of various plans that are designed to manage potential environmental impacts associated with the NEBP development. In doing so the LBEMP is structured so as to avoid unnecessary duplication of environmental management requirements and documentation associated with the Local, State and Commonwealth government approvals.

It is noted that this LBEMP is primarily concerned with the management of potential impacts upon terrestrial MNES. Condition 13 of the Commonwealth approval (Ref: EPBC 2006/2912) requires the preparation of a Caboolture River Environmental Management Plan (CREMP) which is required to address the management of potential impacts upon other MNES such as the Caboolture River estuary, which forms part of the Ramsar listed wetlands of Moreton Bay, migratory marine and shorebirds, marine turtles and dugongs.

2 Objectives and Structure

This LBEMP is comprised of an overarching document and a series of Sub-Plans that provide specific measures to be taken in respect of a particular work program that has been approved by Local and/or State government agencies. Each LBEMP Sub-Plan will need to be approved by the CDotE prior to the commencement of any development works that are the subject of the Sub-plan.

The objectives of this LBEMP are to ensure that:

- > appropriate consideration of the potential for development to impact on MNES is given prior to the commencement of development activities in any part of the NEBP site;
- > in instances where there is a potential for adverse impacts to MNES to occur, appropriate impact avoidance and mitigations measures are incorporated into the design of the works program; and
- > the effectiveness of the measures taken as part of this LBEMP are monitored and where necessary altered, amended or supplemented to ensure that adverse impacts on MNES are (in order of preference) avoided, mitigated or offset whilst allowing for the orderly development of the NEBP.

To satisfy the above objectives, this LBEMP provides the following.

- > In Section 3, an overview of:
 - the existing environment of the NEBP site;
 - the likely staging of the NEBP development and the types of activities that will be involved that have a potential to impact on MNES; and
 - the MNES that are known, or considered likely, to occur within specific NEBP Precincts.
- > In Section 4, a Risk Assessment framework and analysis that considers the potential risk that different development activities pose to MNES that are known, or considered likely, to occur within the NEBP Precincts.
- > In Section 5, a process for the implementation of LBEMP Sub-Plans that is to be implemented throughout the staged NEBP development.
- > In Section 6, a number of Environmental Management Elements that are to be incorporated into each of the LBEMP Sub-Plans.
- > In Section 7, an outline of the steps to be taken in the event of non-compliance with the specifications of the LBEMP including the initiation of corrective actions.
- > In Section 8, an outline of the record keeping and review procedures that are to be implemented to ensure that the NEBP development occurs in a manner that is consistent with the objectives of this LBEMP.

3 NEBP Development

3.1 Existing Environment

The NEBP site is 769 hectares in extent, is situated approximately 4km to the south-east of Caboolture town centre and approximately 40km north of the Brisbane Central Business District. The NEBP site is bound:

- > to the north by the Caboolture River, with land on the northern side of the river being used primarily for agricultural pursuits;
- > to the west by the Bruce Highway, with land on the opposite side of Bruce Highway developed with residential and open space areas; and
- > to the south and east by privately owned rural residential, cleared grasslands and fragmented bushland.

The NEBP site is relatively flat, ranging in elevation from less than 3m Australian Height Datum (AHD) along the site's Caboolture River frontage and drainage lines to 16.5m AHD in the south and west of the site. The site is traversed by Raff Creek, a tributary of the Caboolture River, and a number of constructed drainage channels and minor drainage lines. Raff Creek extends from the south-east corner of the site, where it is a freshwater system, to the centre of the site where it becomes subject to tidal influences. An unnamed and predominantly freshwater tributary of Raff Creek enters the site from the south-east. Tidal levels of the Caboolture River, adjacent to the site are approximately 1.34m AHD for Highest Astronomical Tide (HAT) and 0.81m AHD for Mean High Water Springs (MHWS).

The majority of the site is highly disturbed and has been the subject of previous land clearing, livestock grazing and plantation forestry activities. The site is characterised by large expanses of disturbed grassland, some scattered trees, paperbark (*Melaleuca quinquenervia*) communities, Eucalypt open forest and areas of marine vegetation which fringe the Caboolture River and associated waterways.

The northern sectors of the NEBP site:

- > adjoin the Deception Bay Declared Fish Habitat area, which extends along the entire length of the northern boundary, within the bounds of the Caboolture River;
- > are adjacent to the Moreton Bay Marine Park Habitat Zone which ends at the north-eastern boundary of the site; and
- > adjoin the Moreton Bay Ramsar Wetlands, which encompass the same reaches of the Caboolture River as the Moreton Bay Marine Park.

3.2 Development Staging and Activities

The establishment of the NEBP development will occur in stages over a period of between 15-20 years, however the timing and precise details of each stage will be dictated largely by market demand and the requirement to secure further State and Local Government approvals. The major precincts of the NEBP development are:

- > Mixed Industry Business Area (MIBA);
- > Residential West;
- > Residential East;
- > Marina (including dredging operations within the Caboolture River); and
- > Open Space.

Based on the data presented in Table 3 of the NEBP EIS Terrestrial Ecological Assessment Report (Cardno, 2007), which is reproduced below, the majority of the 442 ha disturbance footprint is comprised of Disturbed Grassland (89.3%), Cultivated Vegetation (0.5%) and a mixture of disturbed/regenerating grassland/woodland communities (4.9%). The balance of the disturbance footprint supports relatively intact native vegetation communities (i.e. Mixed Marine Vegetation, Paperbark Open Forest, Cypress Pine

Woodland, Swamp Oak Woodland, Swampy Heathland, Riparian Vegetation and Scribbly Gum Shrubby Open Forest) that cover an area of approximately 25 ha.

Table 3 Extent of vegetation community removal/modification and retention

Vegetation Community	Current Extent (Ha)	Extent to be Removed/Modified	% to be Retained
Mixed Marine Vegetation	38.7	2.9	92.5
Paperbark Open Forest	19.9	2.7	86.6
Disturbed Grassland	598.5	394.6	34.1
Cypress Pine Woodland	1.8	1.8	0.00
Disturbed Saltwater Couch Grassland	7.7	2.0	74.0
Swamp Oak Woodland	5.0	5.0	100
Disturbed Mixed Species Woodland	7.1	6.0	15.0
Swampy Heathland	1.5	1.5	0.00
Riparian Vegetation	34.5	0.2	99.3
Cultivated Vegetation	12.9	2.0	84.5
Scribbly Gum Shrubby Open Forest	15.5	12.2	21.3
Regenerating Paperbark Forest	12.6	12.6	0.00
Regenerating <i>Acacia</i> dominated woodland	13.4	0.6	95.0
TOTAL	769	442	42.5

Within each of the development precincts a range of broadly defined development activities will occur, including:

- > vegetation clearing and grubbing, in those parts where remnant or regrowth native forest is present;
- > bulk earthworks associated with the re-profiling of existing ground surface levels to create the platforms required for buildings and roads; and
- > grading, infrastructure, building and landscaping works.

Due to the large scale of the NEBP development, it will be undertaken on a staged basis over a 15-20 year period, in accordance with relevant approvals and commercial requirements. The greater part of the major civil construction works are expected to be completed within 15 years.

An indicative schedule for the staging of the NEBP development is provided in Table 3-1.

Table 3-1 Indicative staging schedule for the NEBP

Precinct	Construction Year														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
MIBA															
Residential West															
Residential East															
Marina															
Open Space															

An indicative staging plan (Drawing Ref: 7903-59-002-111) for the NEBP MIBA and RWA Precincts is provided in Appendix A.

3.3 Matters of National Environmental Significance

The NEBP EPBC Act CoA contains a list threatened species that are to be considered by the LBEMP. These species are considered to have a moderate to high likelihood of occurring within or adjacent to the site, based on the assessments made in Terrestrial Ecology Assessment Report (Cardno 2007a) within the EIS.

The MNES to be considered by this LBEMP as well as the specific impacts that may occur as a result of the proposed NEBP and the precincts within which these impacts may occur have been provided in Table 3-2 below.

Table 3-2 Assessment of Likelihood of Occurrence of MNES in, or adjacent to, the Approved Works Site

MNES		Habitat Requirements	Likelihood of Occurrence (from MNES Report)	Applicable Precinct/s where MNES is likely to occur (refer Figure 2)
Common Name	Scientific Name			
	<i>Acacia attenuata</i>	Low lying, high rainfall heathland or open eucalypt forest within coastal regions.	Moderate	MIBA Marina Residential East Residential West
Hairy Joint Grass	<i>Arthraxon hispidus</i>	Dependence on persistent and reliable groundwater	Moderate	Marine MIBA Residential East Residential West
Leafless Tongue Orchid	<i>Cryptostylis hunteriana</i>	Moist sandy soil or clay loam within dense heath or sedgeland occurring below 1000m altitude.	Moderate	Marina
Lesser Swamp Orchid	<i>Phaius australis</i>	Swamps and low lying depressions within forests requires full shade, often associated with <i>Melaleuca quinquenervia</i> wetlands.	Moderate	MIBA Open Space
Grey-headed Flying Fox	<i>Pteropus poliocephalus</i>	Tropical and temperate wet and dry sclerophyll forest and mangroves. Roosts in trees beside water, feeds on flowering trees.	High	MIBA Marina
Water Mouse [#]	<i>Xeromys myoides</i>	Foraging and nesting habitat restricted to Mangrove and saltmarsh communities	Moderate	Marina Open Space
Koala [#]	<i>Phascolarctos cinereus</i>	Open Eucalypt forest and woodland at lower altitude in undulating country on relatively deep and usually high nutrient soil.	Known	MIBA
Red Goshawk	<i>Erythrolitrichis radiatus</i>	Various habitat types including coastal & sub-coastal tall open forest, tropical savannah adjacent to wooded or forested rivers, and rainforest edges are utilized with a preference for a mosaic of vegetation types near to a permanent watercourse.	Moderate	MIBA

MNES		Habitat Requirements	Likelihood of Occurrence (from MNES Report)	Applicable Precinct/s where MNES is likely to occur (refer Figure 2)
Common Name	Scientific Name			
Australian Painted Snipe	<i>Rostratula australis</i>	Shallow and vegetated wetland areas are considered important habitat types for this species.	Moderate	Marina Open Space
Swift Parrot	<i>Lathamus discolor</i>	Preferences of habitat for the swift parrot, in Queensland, include eucalypts such as narrow leaved ironbark, yellow box forests and forest red gum. Larger trees are believed to be preferred by the species.	Moderate	MIBA
Regent Honey-eater	<i>Xanthomyza Phrygia</i>	Eucalypt forest and woodland are considered critical habitat for this species.	Moderate	MIBA Open Space
Coxen's Fig-Parrot	<i>Cyclopsitta diophthalma coxeni</i>	The presence of fruiting trees, particularly fig trees, seems to be of importance in habitat preference of the Coxen's Fig-Parrot. No single habitat type has been identified as critical.	Moderate	MIBA
Wallum Sedge Frog #	<i>Litoria olongburensis</i>	Low pH, wallum habitats which support emergent vegetation including sedges, grasses and reeds.	Moderate	MIBA Open Space Residential West Residential East
Honey Blue-eye	<i>Pseudomugil mellis</i>	This species is typically found in the coastal lowland "wallum" ecosystem.	Moderate	MIBA Open Space
Loggerhead Turtle	<i>Caretta caretta</i>	Marine species known to inhabit but not nest within Moreton Bay	Known from Moreton Bay	-
Green Turtle	<i>Chelonia mydas</i>	Marine species known to inhabit but not nest within Moreton Bay	Known from Moreton Bay	-
Pacific Ridley Turtle	<i>Lepidochelys olivacea</i>	Marine species known to inhabit but not nest within Moreton Bay	Known from Moreton Bay	-
Hawksbill Turtle	<i>Eretmochelys imbricate</i>	Marine species known to inhabit but not nest within Moreton Bay	Known from Moreton Bay	-
Australian Fritillary *	<i>Argyreus hyberbius inconstans</i>	The larval food plant, Native Violet (<i>Viola betonicifolia</i>), is vital for the breeding efforts of the butterfly. Therefore, Ling-leaved Matrush and Blady grass are also important habitat resources.	Moderate	MIBA

#: MNES species not listed in EPBC Approval but known or considered likely to occur in or adjacent to the NEBP site and therefore considered in this LBEMP. *: Species listed in the EPBC Approval but not currently listed as an MNES pursuant to the EPBC Act and therefore not subject to further consideration in this LBEMP.

Brief profiles of the land based MNES listed in Table 3-2 are provided in Appendix B. Each profile provides information concerning:

- > the general ecology of the species including consideration of its critical habitat requirements, feeding and breeding behaviours;
- > the distribution and abundance of the species; and
- > recognised threats to the viability of populations of the species.

4 MNES Risk Assessment

In order to manage environmental risk, minimise impacts to potentially present MNES and comply with the duty of care as defined by the EP Act, it is important to identify the potential environmental hazards associated with a project, assess the environmental risks involved, and develop controls to eliminate, or minimise, residual environmental risk. In accordance with *AS/NZS ISO 31000:2009 Risk management – Principles and Guidelines*, a project hazard identification and risk assessment process has been undertaken in order to assess and adequately manage the risks posed to the natural and social environment by the various construction activities associated with the project.

In undertaking this risk assessment, in which unmitigated project specific environmental hazards were assessed, likelihood levels, consequence levels and risk criteria based on the requirements of *AS/NZS ISO 31000:2009* (as shown in Tables 4-1 to 4-3) were used to assess the environmental risk rating for each identified hazard (as shown in Table 4-4). Note that in cases where the likelihood and consequence of risks relating to one hazard varied, the most conservative figure was used. The Risk ratings presented in Table 4-3 are to be interpreted as follows:

- > **Low:** Risk can be adequately managed by routine procedures and work practices;
- > **Medium:** Management actions other than administrative controls are needed;
- > **High:** Significant risk control measures need to be implemented before works commence; and
- > **Extreme:** Operations are not to be undertaken without (1) extensive risk control and mitigation measures being in place prior to the commencement of works, and (2) ongoing monitoring and review of the effectiveness of the risk control measures for the duration of the works.

For each of the hazards that are associated with a Medium to Extreme level of risk to one or more MNES, relevant environmental management measures are specified in Table 4-4 the detailed specifications for which are provided in Section 6 of this LBEMP.

Table 4-1 Likelihood Levels

Level	Descriptor	Qualitative Description
A	Almost certain	The event is expected to occur; event will occur on an annual (or more frequent) basis.
B	Likely	Probable that it will occur; event has occurred several times before at similar developments.
C	Possible	May or may not occur; event may occur once during the development.
D	Unlikely	The event may occur at some time but is unlikely; heard of happening from time to time at similar developments.
E	Rare	The event may occur in exceptional circumstances; not heard of at similar developments.

Table 4-2 Consequence Levels

Level	Descriptor	Qualitative Description
1	Insignificant	Environment: No damaged detected. People: Event does not result in injury (i.e. no medical treatment required). Property: No damage to property. Amenity: No detectable impact on amenity.
2	Minor	Environment: Minor impact of short duration or short term damage. People: Reversible injury or illness. Property: Minor damage to property (<\$5,000 to repair). Amenity: Minor, localised and short term amenity impacts, no complaints.
3	Moderate	Environment: Short term damage, localised impact. People: Irreversible disability or impairment (30%) to one or more persons. Property: Moderate damage to property (<\$50,000 to repair). Amenity: One or two complaints, impacts extending to several properties and/or lasting for several days.
4	Major	Environment: Significant impact locally and potential for offsite impacts. People: Severe injuries or impairment (60%) to one or more persons, single fatality. Property: Major damage to property (<\$500,000 to repair). Amenity: Many complaints, impacts extensive and/or lasting for many days, up to 5 properties rendered uninhabitable for more than one day.
5	Catastrophic	Environment: Significant impacts to regional ecosystems and threatened species, potential for widespread off site impacts. People: Multiple fatalities, or irreversible injuries/impairment (>60%). Property: Significant loss to property (>\$1,000,000 to repair). Amenity: Multiple dwellings rendered uninhabitable for >1 day.

Table 4-3 Risk Matrix Criteria

		Consequence				
		1 (Insignificant)	2 (Minor)	3 (Moderate)	4 (Major)	5 (Catastrophic)
Likelihood	A (Almost certain)	Medium	High	High	Extreme	Extreme
	B (Likely)	Medium	Medium	High	High	Extreme
	C (Possible)	Low	Medium	High	High	High
	D (Unlikely)	Low	Low	Medium	Medium	High
	E (Rare)	Low	Low	Medium	Medium	High

Table 4-4 Environmental Risk Assessment Register

Hazard	Risk	MNES Possibly Impacted	Likelihood	Consequence	Environmental Risk Rating	Applicable Management Elements from Section 6 *
Vegetation clearing/grubbing	Damage to flora intended for retention	All flora MNES	C	3	High	1, 3
	Potential injury, death or displacement of fauna	All terrestrial fauna MNES	C	3	High	1, 2
	Removal of soil – loss of seed bank/tubers	<i>Acacia attenuata</i> Leafless Tongue Orchid Lesser Swamp Orchid	C	3	High	1, 3
	Introduction and/or spread of exotic species	All flora MNES Water Mouse Wallum Sedge Frog	C	3	High	1, 4
	Soil instability and erosion	Wallum Sedge Frog Honey Blue Eye	C	4	High	1, 5
Construction personnel bringing dogs onto the site	Injury and harassment of native fauna if dogs are not appropriately supervised or restrained	All terrestrial fauna MNES	B	2	Medium	1, 2
Bulk earthworks above 5m AHD	Soil instability and erosion	Wallum Sedge Frog Honey Blue Eye	C	4	High	1, 5
	Increased sediment flows into Raff Creek, Caboolture River and Moreton Bay	Marine Turtles # Honey Blue-eye	C	4	High	1, 5 and CREMP
	Downstream sedimentation and loss or reduction of seagrass and other benthic feeding grounds	Marine Turtles # Honey Blue-eye	C	4	High	1, 5 and CREMP

Hazard	Risk	MNES Possibly Impacted	Likelihood	Consequence	Environmental Risk Rating	Applicable Management Elements from Section 6 *
	Introduction and/or spread of exotic species	All flora MNES Water Mouse Wallum Sedge Frog	C	3	High	1, 4
Bulk earthworks below 5m AHD	Exposure of Acid Sulfate Soils (ASS)	Honey Blue-eye	C	4	High	1, 6 and CREMP
	Increased sediment flows into Raff Creek, Caboolture River and Moreton Bay	Marine Turtles # Honey Blue-eye	C	4	High	1, 5 and CREMP
	Downstream sedimentation and loss or reduction of seagrass and other benthic feeding grounds	Marine Turtles # Honey Blue-eye	C	4	High	1, 5, 6 and CREMP
Grading, infrastructure, building and landscaping works	Negative impacts to receiving environment (water quality/aquatic biota) due to sediment runoff	Marine Turtles # Wallum Sedge Frog Honey Blue Eye	C	4	High	1, 5
	Introduction and/or spread of exotic species	All flora MNES	C	3	High	1, 4
	Soil instability and erosion	Wallum Sedge Frog Honey Blue Eye	C	4	High	1, 5
	Increased sediment flows into Raff Creek, Caboolture River and Moreton Bay	Marine Turtles # Honey Blue-eye	C	4	High	1, 5 and CREMP
River Dredging	The management of impacts upon MNES associated with increased boating traffic within Caboolture River are to be dealt with within a Caboolture River Estuary Environmental Management Plan (CREMP) prepared in accordance with Condition 13 of EPBC Approval Ref: EPBC 2006/2912.					
Fire	Uncontrolled fire resulting in damage to retained vegetation	All terrestrial flora and fauna MNES	D	2	Low	-

Hazard	Risk	MNES Possibly Impacted	Likelihood	Consequence	Environmental Risk Rating	Applicable Management Elements from Section 6 *
Increased Road Traffic	Injury to native fauna resulting from interactions with development related vehicular traffic	All terrestrial fauna MNES	B	3	High	1, 2
Increased River Traffic	The management of impacts upon MNES associated with increased boating traffic within Caboolture River are to be dealt with within a Caboolture River Estuary Environmental Management Plan prepared in accordance with Condition 13 of EPBC Approval Ref: EPBC 2006/2912.					

#: Marine Turtles include: Loggerhead Turtle, Green Turtle, Pacific Ridley and Hawksbill Turtle.

*: CREMP indicates that this issues will be addressed in the Caboolture River Estuary Management Plan that is required to be prepared in satisfaction of Condition 13 of the Commonwealth Approval (Ref: EPBC 2006/2912).

5 LBEMP Sub-Plan Specifications

To satisfy NEBP's obligations to minimise impacts to MNES to the greatest extent practicable whilst undertaking the orderly development of the NEBP estate, it will be necessary to complete a LBEMP Sub-Plan for each program of development works for which all necessary State and/or Local government approvals have been obtained (i.e. an approved works program). Each LBEMP Sub-Plan will sit below this overarching LBEMP and will draw upon the broad guidance provided within this document.

The emphasis of each LBEMP Sub-Plan is on the management of activities assessed as having an environmental risk rating of 'Extreme', 'High' or 'Medium' for MNES that are known or considered likely to occur in, or adjacent to, an area that is the subject of an approved works program.

Based on consideration of the environmental risk rating analysis presented in Table 4-4, each LBEMP Sub-Plan would be comprised of a number of the following environment management elements:

- > Element 1: LBEMP Sub-Plan Risk Assessment (Mandatory Element);
- > Element 2: Fauna;
- > Element 3: Flora;
- > Element 4: Weeds and Pests;
- > Element 5: Soil Erosion, Sediment Loss and Water Quality; and
- > Element 6: Acid Sulfate Soils.

Each of these Environmental Management Elements consists of the following key components.

- > **Rationale:** the reason(s) why this management element is, or is not, relevant to this particular phase of the NEBP development.
- > **Objectives:** the objectives and targets to be achieved by implementing this element.
- > **Performance Indicators:** measurable indicators and standards set to assess the efficacy of management measures taken.
- > **Tasks:** specific management and monitoring tasks that need to be taken, including;
 - Actions: details of the actions, including monitoring, to be undertaken; and
 - Timing: details concerning the timeframe for undertaking specific actions.

The **Developer** is to be the entity that assumes **responsibility** ensuring that all of the tasks that are specified within this LBEMP and any LBEMP Sub-Plan are implemented in the time frames specified. The Developer is to ensure that all employees and contractor involved in the NEBP development works are aware of, and contractually required to comply with, the requirements of this LBEMP and any LBEMP Sub-Plan.

The trigger for the preparation and implementation of each LBEMP Sub-Plan will be the issue of relevant State and local government approvals for a particular program of Operational Works.

In the preparation of each LBEMP Sub-Plan, the services of an appropriately qualified and experienced ecologist are to be engaged for the purposes of determining:

- > whether the approved package of works are likely to have an adverse impact on a MNES; and
- > the nature of management measures that need to be incorporated in the LBEMP Sub-Plan.

If it is determined, via completion of Element 1, that an approved works program does not pose a Medium to Extreme risk to any MNES then no other elements need to be completed for that specific LBEMP Sub-Plan. However the LBEMP Sub-Plan still needs to be registered and made available for review in accordance with the requirements of Section 8 of this LBEMP.

6 Environmental Management Elements

6.1 Element 1: LBEMP Sub-Plan MNES Risk Assessment

Rationale

As each program of approved works will have specific potential impacts upon areas that may vary in terms of their MNES values, it is necessary to complete a MNES Risk Assessment for each approved works program. This Risk Assessment will help to identify which, if any, MNES may be potentially affected by the works program and the nature of management measures that need to be implemented.

Objective/Target

Complete a MNES Risk Assessment for each new program of works once required State and/or Local government approvals have been gained and prior to the commencement of any vegetation clearance or bulk earthworks.

Identify relevant environmental management measures that need to be implemented.

Performance Indicators

Completion of a MNES Risk Assessment and preparation of a LBEMP Sub-Plan for each program of approved works.

An appropriate qualified and experienced ecologist is to be consulted in the preparation of the LBEMP Sub-Plan MNES Risk Assessment.

The names and qualifications of the ecologist consulted in the preparation of the LBEMP Sub-Plan MNES Risk Assessment are to be recorded in the NEBP LBEMP Register.

Management Measures

Tasks	Actions	Timing
Review the location and extent of the approved works program and construction methods	Conduct a review of the approved proposed construction methods and footprint to ensure the information within this overarching LBEMP remains applicable to any alterations in design or construction techniques.	Prior to the commencement of any vegetation clearance or earthworks or building works.
MNES Review	<p>Determine which MNES are known or likely to occur within, or adjacent to, the approved works site. This assessment is to be made by an appropriately qualified and experienced ecologist with reference to:</p> <ul style="list-style-type: none"> > the current listing of MNES available from http://www.environment.gov.au/topics/about-us/legislation/environment-protection-and-biodiversity-conservation-act-1999 > Table 3-2 in Section 3.3 of this LBEMP; > current aerial photography of the site locality; > any available flora and fauna surveys and assessments (e.g. preclearance surveys undertaken in accordance with this LBEMP); and > relevant site inspections and/or surveys. 	
Identify potential MNES impact pathways	Identify activities that will occur as part of the approved works program that have the potential to impact on MNES that are known or considered likely to occur within, or adjacent to, the works site.	
MNES Risk Assessment	<p>Complete a Risk Assessment following the procedure set-out in Section 4 of the LBEMP to identify which:</p> <ul style="list-style-type: none"> > approved development activities are likely to pose a Medium to Extreme Risk of harm to one or more MNES; and 	

Tasks	Actions	Timing
	> the specific environmental management element(s) that needs to be incorporated into the LBEMP Sub-Plan.	
Develop LBEMP Sub-Plan for each specific works program	Prepare the required LBEMP Sub-Plan based on the outcomes of the MNES Risk Assessment.	

6.2 Element 2: Fauna

Rationale

The development of the NEBP will involve vegetation clearance, earthworks and construction activities. These activities, particularly the removal of vegetation has the potential to disturb fauna species both within the areas of disturbance and adjacent areas where native fauna habitat has been identified for retention. While existing vegetation within the development areas will only be removed where necessary for the proposed works, management measures are required to ensure that retained vegetation, and occupying fauna, within and adjacent to the work site is protected at all times.

Objective/Target

To ensure:

- > the development of the NEBP is conducted in a manner that minimises impacts to fauna listed as MNES;
- > areas of fauna habitat that are to be retained are appropriately protected during the construction phase;
- > authorised fauna habitat disturbance is carried out in accordance with best practice environmental management measures, as well as the terms and conditions of relevant permits authorising such disturbance; and
- > existing infestations of pest fauna species are controlled and no new pest species are introduced to or spread within the site.

Performance Indicators

Disturbance activities do not result in the avoidable harm to any fauna listed as MNES.

Compliance with the project-specific conditions of approval relating to vegetation clearing and/or disturbance to native fauna.

Vegetation adjacent to the approved disturbance areas is retained and protected at all times during clearing and ongoing works.

The clearance of native vegetation within approved disturbance areas is undertaken in accordance with the terms and conditions of relevant permits.

Management Measures

Tasks	Actions	Timing
Identify and protect all vegetation and fauna habitats adjacent to the approved disturbance areas	Clearly define the limits of the approved development areas on all construction plans. Physically demarcate areas of vegetation and fauna habitat to be retained using high visibility temporary or permanent fencing prior to the commencement of development activities.	Prior to the commencement of any vegetation clearance
Conduct pre-clearance surveys of approved disturbance areas	Survey the defined approved disturbance area for the presence, or likely presence, of fauna listed as MNES. Mark with GPS and flagging tape the location of any fauna MNES that were observed during the surveys.	Prior to the commencement of any vegetation clearance
Appointment of an appropriately licenced Fauna Spotter Catcher	An appropriately licenced fauna spotter-catcher is to be appointed to supervise and direct vegetation clearance works. The appointed fauna spotter catcher is to inspect the approved disturbance area and the findings of the pre-clearance survey.	Prior to the commencement of any vegetation clearance Prior to the commencement of any vegetation clearance
Establish fauna exclusion/guide fencing (if required)	Determine whether it is appropriate to establish fauna exclusion fencing of a particular type to minimise harm to MNES fauna associated with:	Prior to the commencement of any vegetation

Tasks	Actions	Timing
	<ul style="list-style-type: none"> > movement of fauna from the site onto adjacent roadways during, or as a result of, the conduct of vegetation clearance works; and/or > movement of fauna into the development site from adjacent bushland reserves. 	clearance
	Establish and maintain required fauna exclusion/guide fencing	Prior to the commencement of any vegetation clearance
Conduct clearance of vegetation in a manner which ensures that any native fauna living near or within or adjacent to the vegetation to be removed have time to move out of the areas of disturbance without human intervention.	<p>The appointed fauna spotter catcher is to be authorised to issue relevant instructions to the vegetation clearance contractor to ensure:</p> <ul style="list-style-type: none"> > vegetation clearance works comply with the procedures of <i>Policy 6: Vegetation Clearing Practices of the Nature Conservation (Koala) Conservation Plan 2006</i>; > any vegetation occupied by native fauna is not cleared until the fauna moves out of the vegetation, or (with the exception of Koala) is relocated to a secure area of similar habitat by a qualified fauna spotter-catcher; and > ensure vegetation clearance is conducted in a sequential manner in order to direct native fauna away from threatening processes or hostile environments (e.g. roads, cleared land) and towards any retained vegetation or habitat links. 	During all site clearance works
Domestic pets are excluded from the site during vegetation clearance works.	<p>No domestic pets are to be brought into the site by contractors employed to undertake vegetation clearance works.</p> <p>Any contractors who ignore this management specification may, at the discretion of the proponent or its authorised representatives, be banned from the site.</p>	Throughout vegetation clearance works.
A Post Clearance Fauna Management Report is to be completed.	<p>At the completion of vegetation clearance works, a brief post works Fauna Management Report is to be completed and is to contain:</p> <ul style="list-style-type: none"> > details on any incidents that occurred during the clearing; > details on any translocated fauna, such as species, location relocated; > provide an evaluation of the fauna management techniques; > provide any appropriate future management measures; and > the name, licence reference number and contact details of the appointed fauna spotter-catcher. 	At the completion of vegetation clearance
Trenches and excavations.	<p>All open trenches and excavations are to be managed to minimise the potential for entrapment of native fauna by:</p> <ul style="list-style-type: none"> > minimising as far as possible the period of time when trenches/excavations with steep sides (i.e. all slopes greater than 1V:1H) are open and accessible to native fauna; > inspection of open trenches/excavation each morning to identify the presence of any fauna that have become trapped; > provision of assistance to entrapped native fauna, including engagement of the services of a fauna spotter catcher if required; and > establishment of exclusion fencing around any steep sided trenches or excavations (i.e. all slopes greater than 1V:1H) that are to remain open for extended periods of time (i.e. > 48 hours). 	For duration of development works.
Traffic management.	Development design and construction is to make appropriate provision for the safe movement of native fauna, including the MNES	Prior to the commencement of

Tasks	Actions	Timing
	<p>listed Koala, through the NEBP site as is required by:</p> <ul style="list-style-type: none"> > State Referral Agency Condition 9 of MCU-2002-1079; and > State Referral Agency Condition 7 of MCU-2004-1420. 	construction activities
	Vehicles attending the approved works site are to be operated in a manner that minimises the potential for harm to native fauna.	Ongoing
Care of injured fauna	<p>Any fauna recovered during vegetation clearance works will, immediately upon capture by the fauna spotter catcher, be inspected for any signs of physical injury. If the fauna appear to be injured, they will be immediately transported to a suitably qualified veterinary surgeon for appropriate treatment. Uninjured fauna will be relocated to suitable, habitat in the surrounding area as described above.</p> <p>The details for nearby, suitable wildlife care facilities are:</p> <ul style="list-style-type: none"> > RSPCA – Ph: 1300 264 625 > DEHP – Ph: 1300 130 372. 	During all site clearance works
Record keeping.	<p>The following records and reports are to be retained and made available to relevant administering authorities upon request:</p> <ul style="list-style-type: none"> > the dates and locations of habitat clearance works are to be maintained; > the name, licence reference number and contact details of the fauna spotter-catcher that supervised the vegetation clearance works each day; > details concerning any native vertebrate fauna that were injured during the conduct of the approved works program and the actions taken in respect thereof; and > post clearance Fauna Management Report. 	Ongoing
Corrective actions.	<p>Should there be non-compliance with the stated performance indicators the following corrective actions are to be implemented:</p> <ul style="list-style-type: none"> > identification of the cause of the non-compliance; > implementation of appropriate corrective measures as determined by the Developer in consultation relevant experts (where required); and > relevant validation monitoring to confirm that the nominated corrective actions have been effective. <p>The Developer shall implement the corrective action(s) as required within the agreed timeframe noted on the CAR.</p> <p>Corrective actions may include:</p> <ul style="list-style-type: none"> > cessation of vegetation clearance activities; > restoration of fauna habitats subject to unauthorised disturbance; > establishment of fauna exclusion fencing around the work site; > reductions in vehicular speed limits within the works site; or > environmental awareness training of personnel. 	Ongoing

6.3 Element 3: Flora

Rationale

An approved package of works within the NEBP may involve the clearance of native vegetation to facilitate earthworks and construction activities. The removal of native vegetation has the potential to disturb fauna species and adjacent native flora that has been identified for retention. While existing vegetation within the development areas will only be removed where necessary for the proposed works, management measures are required to ensure that retained vegetation within and adjacent to the site is protected at all times, as well as any fauna present.

Objective/Target

To ensure:

- > areas of native vegetation located outside of the approved disturbance area are to be retained and appropriately protected;
- > authorised vegetation disturbance is carried out in accordance with best practice environmental management measures, as well as the terms and conditions of relevant permits authorising such disturbance; and
- > existing infestations of pest flora species are controlled and no new pest species are introduced to, or spread within, the site.

Performance Indicators

Compliance with the project-specific conditions of approval relating to vegetation clearing.

Native vegetation adjacent to the approved development areas is retained and protected at all times during clearing of the site and ongoing works.

The clearance of native vegetation within approved disturbance areas is undertaken in accordance with the terms and conditions of those relevant permits.

No invasion/dispersal of weeds or other exotic species.

Management Measures

Tasks	Actions	Timing
Identify and delineate areas of vegetation clearance and retention.	Clearly define the limits of the approved development areas on all construction plans. Physically define areas of native vegetation to be retained, within or adjacent to the approved works site, using high visibility temporary or permanent fencing prior to the commencement of development activities.	Prior to the commencement of any vegetation clearance
Protection of vegetation to be retained within approved works site.	Install and maintain tree protection fencing (TPF) around any native vegetation located within the approved works site that has been identified for retention. The TPF is to be generally compliant with Australian Standard AS4970-2009 Protection of Trees on a Development Site. The TPF which protects the exclusion area is to be of standard AS4970-2009.	Prior to the commencement of development works. Maintain for the duration of development works.
Conduct pre-clearance surveys of all vegetation to be removed.	Survey the defined vegetation clearance area for the presence of any flora listed as MNES using appropriate survey techniques. Clearly demarcate in the field and record the location with GPS any flora MNES observed during the surveys.	Prior to the commencement of any vegetation clearance
Implement appropriate mitigation strategy for any MNES listed flora identified in the pre-	Determine whether it is possible to retain and sustain the ecological functionality of the identified MNES flora insitu, taking into account the nature of the development. (note: the retention of small numbers of plants in an ecologically isolated patch of land surrounded by	Prior to the commencement of any vegetation

Tasks	Actions	Timing
clearance surveys.	<p>urban/industrial development is unlikely to maintain ecological functionality).</p> <p>If it is possible to achieve the above, incorporate the identified MNES flora into a vegetation protection zone and manage accordingly.</p> <p>For MNES flora that are able to be successfully translocated, obtain a Clearing (protected Plant) Permit under the Nature Conservation Act from the Qld DEHP.</p> <p>MNES flora with the potential to occur in the NEBP that are able to be translocated include:</p> <ul style="list-style-type: none"> > <i>Arthraxon hispidus</i> Hairy Joint Grass > <i>Cryptostylis hunteriana</i> Leafless Tongue Orchid > <i>Phaius australis</i> Lesser Swamp Orchid > <i>Acacia attenuata</i> <p>Undertake MNES listed flora translocation works in accordance with the terms and condition of a Clearing (protected Plant) Permit under the Nature Conservation Act from the Qld DEHP.</p>	clearance
Conduct clearance of vegetation in a manner which minimises the potential for harm to native fauna.	Implement an appropriate program of controls based on Element 2 – Fauna of this LBEMP.	During all site clearance works
Monitor the condition of retained and transplanted vegetation.	<p>Visually monitor the condition of retained/transplanted vegetation on a weekly basis for signs of stress or damage throughout the construction period.</p> <p>Undertake issue specific corrective actions in respect of any observed damage/stress to retained/transplanted vegetation.</p>	Throughout construction period
	Monitor all MNES flora translocation works in accordance with the terms of the required Clearing (Protected Plant) Permit issued by the Qld DEHP.	As specified in the Permit
Appropriate management, reuse and disposal of cleared vegetation.	<p>Locate any temporary stockpiles of cleared vegetation on-site in a manner that assists with the management of erosion and sediment loss processes (refer LBEMP Element 5).</p> <p>Manage cleared non-native vegetation in accordance with LBEMP Element 4.</p> <p>Reuse or dispose of cleared vegetation in accordance with Local government requirements.</p>	Ongoing
Protected MNES listed flora during ecological restoration works.	<p>Undertake restoration site preparation and revegetation in a manner which avoids removal or damage to MNES listed flora species. Where ecological restoration works are to be undertaken in areas supporting MNES listed flora:</p> <ul style="list-style-type: none"> > mark all MNES listed flora in the restoration area with flagging tape or conspicuous marker stakes; > carefully undertake weed management, soil preparation, and planting works so as to avoid physical or chemical disturbance MNES listed flora; and > monitor and record the responses of MNES listed flora to the ecological restoration works. 	Ongoing
Record keeping.	Ensure all records and reports are made available to relevant administering authorities upon request.	Ongoing
Corrective actions.	<p>Should there be non-compliance with the stated performance indicators the following corrective actions are to be implemented:</p> <ul style="list-style-type: none"> > identification of the cause of the non-compliance; > implementation of appropriate mitigation measures as determined 	Ongoing

Tasks	Actions	Timing
	<p>by the Developer in consultation with relevant experts (where required); and</p> <p>> relevant validation monitoring to confirm that the nominated corrective actions have been effective.</p> <p>The Developer shall implement the corrective action(s) as required within the agreed timeframe noted on the CAR.</p>	

6.4 Element 4: Weeds and Pests

Rationale

Activities occurring as part of the NEBP development including, vegetation clearance, earthwork, landscaping and building activities have the potential to introduce and/or further disperse pest species both within the development footprint and to the surrounding environment.

Surveys of the site undertaken for the NEBP EIS (refer Cardno 2008) recorded the presence of a number of Class 2 and Class 3 pest plant species pursuant to the *Land Protection (Pest and Stock Route Management) Act 2002* (LP Act), as listed below.

Common Name	Scientific Name	Location of Infestations	LP Act Designation
Groundsel Bush	<i>Baccharis halimifolia</i>	Scattered across site	Class 2
Prickly Pear	<i>Opuntia sp.</i>	Disturbed cleared areas and Cypress Pine woodland	Class 2
Water Hyacinth	<i>Eichhornia crassipes</i>	Paperbark Forest (south-eastern portion)	Class 2
Mother of Millions	<i>Bryophyllum sp</i>	Scattered across site	Class 2
Salvinia	<i>Salvinia molesta</i>	Constructed waterbody near the homestead	Class 2
Camphor Laurel	<i>Cinnamomum camphora</i>	Cultivated areas and northern riparian areas	Class 3
Lantana	<i>Lantana camara</i>	Scattered across site	Class 3
Asparagus Fern	<i>Asparagus africanus</i>	Scattered across site	Class 3
Chinese Elm	<i>Celtis sinensis</i>	Disturbed riparian area	Class 3
Broad-leaved Pepper Tree	<i>Schinus terebinthifolius</i>	Scattered across site and in Disturbed riparian area	Class 3

Objective/Target

To ensure:

- > existing infestations of pest flora or fauna species are controlled;
- > no new pest species are introduced to or spread within the site; and
- > pest flora and fauna species are not dispersed from the site to the surrounding environment.

Performance Indicators

No invasion/dispersal of weeds or other exotic species.

Weeds are treated in accordance with industry best practise and any relevant legislative regulations

Management Measures

Tasks	Actions	Timing
Identify specific areas of weed and pest infestation	Prior to commencing development works (i.e. vegetation clearing or excavation) conduct survey of development footprint to determine and map the presence and location of weed and pest infestations.	Prior to the commencement of vegetation clearance and earthworks
Treat identified weed infestations within designated vegetation retention areas .	In areas where existing native vegetation and fauna habitat are to be retained and/or restored, treat existing weed infestations in accordance with: > Department of Agriculture, Forestry and Fisheries	Ongoing

Tasks	Actions	Timing
	<p>requirements and industry best practise as detailed in http://www.daff.qld.gov.au/plants/weeds-pest-animals-ants</p> <ul style="list-style-type: none"> > LBEMP Element 2; and > LBEMP Element 3. 	
Manage weed infestations within designated vegetation clearance areas .	<p>In areas where vegetation clearance and earthworks are to occur:</p> <ul style="list-style-type: none"> > clear and stockpile weed infested areas separately from weed free areas; and > dispose of, rather than reuse, weed infested material in accordance with local government requirements. 	Ongoing
Minimise the introduction and dispersal of weeds and other exotic species.	<p>Ensure that all equipment (e.g. machinery, vehicles and clothing) used in weed-infested areas are cleaned of weed proagules before moving into weed-free areas of the site.</p> <p>Ensure that all mulch and fill material imported to the site is certified as being weed free.</p>	Ongoing
Corrective actions.	<p>Should there be non-compliance with the stated performance indicators the following corrective actions are to be implemented:</p> <ul style="list-style-type: none"> > identification of the cause of the non-compliance; > implementation of appropriate mitigation measures as determined by the Developer in consultation with relevant experts (where required); and > relevant validation monitoring to confirm that the nominated corrective actions have been effective. <p>The Developer shall implement the corrective action(s) as required within the agreed timeframe noted on the CAR.</p>	Ongoing

6.5 Element 5: Water Quality (Sediment and Erosion)

Rationale

The NEBP has the potential to impact on the qualities of downstream waterways and wetlands during both the construction and operational phases of the development.

Appropriate management practices must be employed in order to avoid significant adverse changes to the qualities of receiving waters (i.e. Raff Creek, Caboolture River and Moreton Bay) and impacts to MNES associated with those waters.

Objective/Target

To minimise changes to the qualities of receiving waters attributable to the NEBP development.

Performance Indicators

Compliance with the requirements of relevant local and state government approvals that require the preparation and implementation of Water Quality Management Plans including, but not necessarily limited to, the following:

- > MIBA Precinct (refer MCU-2002-1079); and
- > Residential West Precinct (refer MCU-2004-1420).

More specifically compliance with:

- > Moreton Bay Regional Council Condition 19(a) of MCU-2002-1079 and Condition 18(a) of MCU-2004-1420, which have the effect of requiring that a Stormwater Quality Management Plan (SQMP) Master Plan be prepared and submitted for approval *"prior to a Reconfiguring a Lot application being lodged for Stage 1"*.
- > Moreton Bay Regional Council Condition 19(b) of MCU-2002-1079 and Condition 18(b) of MCU-2004-1420, which have the effect of requiring that the developer submit and obtain approval for "Site Based Stormwater Management Plans (SBSMP)" with each Reconfiguring a Lot or Material Change of Use development application (other than where there is no land disturbing development).
- > State Referral Agency Condition 4 of MCU-2002-1079 and Condition 3 of MCU-2004-1420, which both require that *"prior to an application being lodged for Reconfiguring a Lot for Stage 1, submit to the Department of Environment and Heritage Protection for review a Water Quality Monitoring Plan."*
- > State Referral Agency Condition 12 of MCU-2002-1079 and Condition 9 of MCU-2004-1420, which both require that *"Prior to an application being lodged for a development permit for operational works within the project site, submit to DEHP for review a Construction Environment Management Plan. The plan must be based on the preliminary Construction Environment Management Plan (provided as Appendix X2 of the EIS)... Specific requirements must include:*
 - a) *Bulk earthworks and associated sediment control measures designed and staged to minimise the area of soil disturbance and minimise the release of sediment to surface waters generally in accordance with DEHP's guideline for 'Best practice urban stormwater management: erosion and sediment control';*
 - b) *....(etc)"*

This Element of the LBEMP **does not** address the requirements for any dredging or riverbank stabilisation of the Caboolture River which would be the subject of the CREMP required by Condition 13 of the Commonwealth approval (Ref: EPBC 2006/2912).

Management Measures

Tasks	Actions	Timing
Appropriately manage development activities to maintain acceptable water quality levels within receiving waterways and wetlands	Obtain approval for a SQMP Master Plan in accordance with relevant development approval conditions.	Prior to a Reconfiguring a Lot application being lodged for Stage 1
	Obtain approval for a SBSMP in accordance with relevant development approval conditions.	Concurrent with each Reconfiguring a Lot or Material Change of Use development application (other than where there is no land disturbing development).
	Obtain approval for a Water Quality Monitoring Plan (WQMP) in accordance with relevant development approval conditions.	Prior to an application being lodged for Reconfiguring a Lot for Stage 1
	Obtain approval for a Construction Environmental Management Plan (CEMP) in accordance with relevant development approval conditions.	Prior to an application being lodged for a development permit for operational works within the project site
	Implement and maintain approved SQMP Master Plan, SBSMP, WQMP and CEMP	Ongoing
Record keeping.	<p>Maintain records in accordance with each approved:</p> <ul style="list-style-type: none"> > SQMP Master Plan; > SBSMP; > WQMP; and > CEMP. <p>Ensure all records and reports are made available to relevant administering authorities upon request.</p>	Ongoing
Corrective actions.	<p>Should there be non-compliance with the stated performance indicators the following corrective actions are to be implemented:</p> <ul style="list-style-type: none"> > identification of the cause of the non-compliance; > implementation of appropriate mitigation measures as determined by the Developer in consultation with relevant experts or regulators (where required); and > relevant validation monitoring to confirm that the nominated corrective actions have been effective. <p>The Developer shall implement the corrective action(s) as required within the agreed timeframe noted on the CAR.</p>	Ongoing

6.6 Element 6: Acid Sulfate Soils

Rationale

Parts of the NEBP development will involve disturbance of actual and potential acid sulfate soils (ASS) located within the lower-lying sectors of the site. Appropriate soil management practices must be employed in order to avoid detrimental impacts to land and water within and adjacent to the site associated with disturbance to ASS.

A geotechnical investigation may be required to confirm the extent and level of acid sulfate soils present within an approved works site.

Objective/Target

To minimise and if possible, avoid the exposure of ASS, and prevent acid leachate from leaving the site and potentially impacting on adjacent waters.

Performance Indicators

Compliance with the requirements of relevant local and state government approvals that deal with the management of Acid Sulfate Soils including, but not necessarily limited to, the following:

- > MIBA Precinct (refer MCU-2002-1079); and
- > Residential West Precinct (refer MCU-2004-1420).

More specifically:

- > Moreton Bay Regional Council Condition 13 of MCU-2002-1079 and Condition 12 of MCU-2004-1420, which have the effect of requiring that all potential acid sulphate soil disturbance is carried out in a manner that complies with the Acid Sulfate Soils Code of the Moreton Bay Regional (Caboolture Shire) Plan; and
- > State Referral Agency Condition 10 of MCU-2002-1079 and Condition 8 of MCU-2004-1420, which both require that:
 - a) Prior to an application being lodged for a development permit for operational works involving disturbance of potential and actual acid sulphate soils, submit to the Coordinator General for approval subject to technical advice from DEHP, a site-specific Acid Sulfate Soil Management Plan. Additional ASS investigations and management plan preparation must be conducted in accordance with:
 - State Planning Policy (SPP) 2/02 Guideline: Acid Sulfate Soils (Queensland Government, 2002)
 - The SPP 2/02 Guideline: Acid Sulfate Soils and with reference to the Guidelines for Sampling and Analysis of Lowland Acid Sulfate Soils in Queensland (Ahern CR et al., 1998)
 - Queensland Acid Sulfate Soil Technical Manual: Soil Management Guidelines (Dear et al., 2002)
 - b) The proponent must conduct all works to ensure that no environmental harm as defined under the Environment Protection Act 1994 is caused.

Management Measures

Tasks	Actions	Timing
Appropriately manage development activities involving disturbance to acid sulphate soils.	Develop an Acid Sulphate Soils Management Plan in accordance with relevant State and local government conditions of approval, prior to the commencement of any development activities involving disturbance to ASS.	Prior to commencement of any activities involving disturbance to ASS.

Tasks	Actions	Timing
	Implement the approved Acid Sulphate Soils Management Plan.	Ongoing
Record keeping.	Maintain records in accordance with the approved <i>Acid Sulfate Soils Management Plan</i> . Ensure all records and reports are made available to relevant administering authorities upon request.	Ongoing
Corrective actions.	Should there be non-compliance with the stated performance indicators the following corrective actions are to be implemented: <ul style="list-style-type: none"> > identification of the cause of the non-compliance; > implementation of appropriate mitigation measures as determined by the Developer in consultation with relevant experts (where required); and > relevant validation monitoring to confirm that the nominated corrective actions have been effective. The Developer shall implement the corrective action(s) as required within the agreed timeframe noted on the CAR.	Ongoing

7 Non-compliance and Corrective Action Requirements

The **Developer** is to be the entity that assumes **responsibility** ensuring that all of the tasks that are specified within this LBEMP and any LBEMP Sub-Plan are implemented in the time frames specified. The Developer is to ensure that all employees and contractor involved in the NEBP development works are aware of, and contractually required to comply with, the requirements of this LBEMP and any LBEMP Sub-Plan.

Where the Developer becomes aware of a site or operational condition that does not comply with stated performance indicators of this LBEMP, there is a requirement for a corrective action.

A Corrective Action Request (CAR) form shall be completed and authorised where appropriate in general compliance with the example CAR form provided in Appendix B of this LBEMP or similar.

The Developer shall also maintain a register of CARs, which shall demonstrate that appropriate actions have been completed within a suitable timeframe.

Any CAR registered in accordance with this LBEMP shall be provided to any Local, State or Commonwealth Government Department, any statutory authority or other person, consensually or as lawfully required.

The Developer is to implement an Environmental Incident and Response procedure including an Environmental Incident Report form. The procedure shall clearly define response and notification requirements including all relevant details of those to be contacted in the event of an environmental incident or emergency.

The Environmental Incident Report form shall include the details of the incident, and as a minimum include:

- > date of incident;
- > details of the persons who detected or notified the incident (internal and external);
- > nature of the incident; and
- > details of the corrective actions undertaken.

The Developer shall notify the Commonwealth Department of the Environment of any recorded environmental incidents involving MNES as soon as practicably possible.

8 Record Keeping and Review Procedures

This LBEMP is a living document. As such, to ensure the management of MNES during the staged establishment of the NEBP development is continually improved, it will be necessary to implement the following record keeping and review procedures.

1. Retain appropriate records concerning the preparation and implementation of LBEMP Sub-Plans, including:
 - a register of all LBEMPs, including all Sub-Plans, along with hard copies of each LBEMP; and
 - all records that are required by each Element of an implemented LBEMP Sub-Plan, including copies of all issue specific management plans that each LBEMP Sub-Plan draws from.
2. Review this LBEMP:
 - as part of the preparation of each LBEMP Sub-Plan;
 - following significant environmental incidents involving a MNES;
 - at the completion of any environmental audit carried out by the CDoTE; and
 - in the instance where the objectives of any element of this LBEMP are not being met.

If any substantive amendments to this LBEMP are required, then approval from the CDoTE shall be obtained.

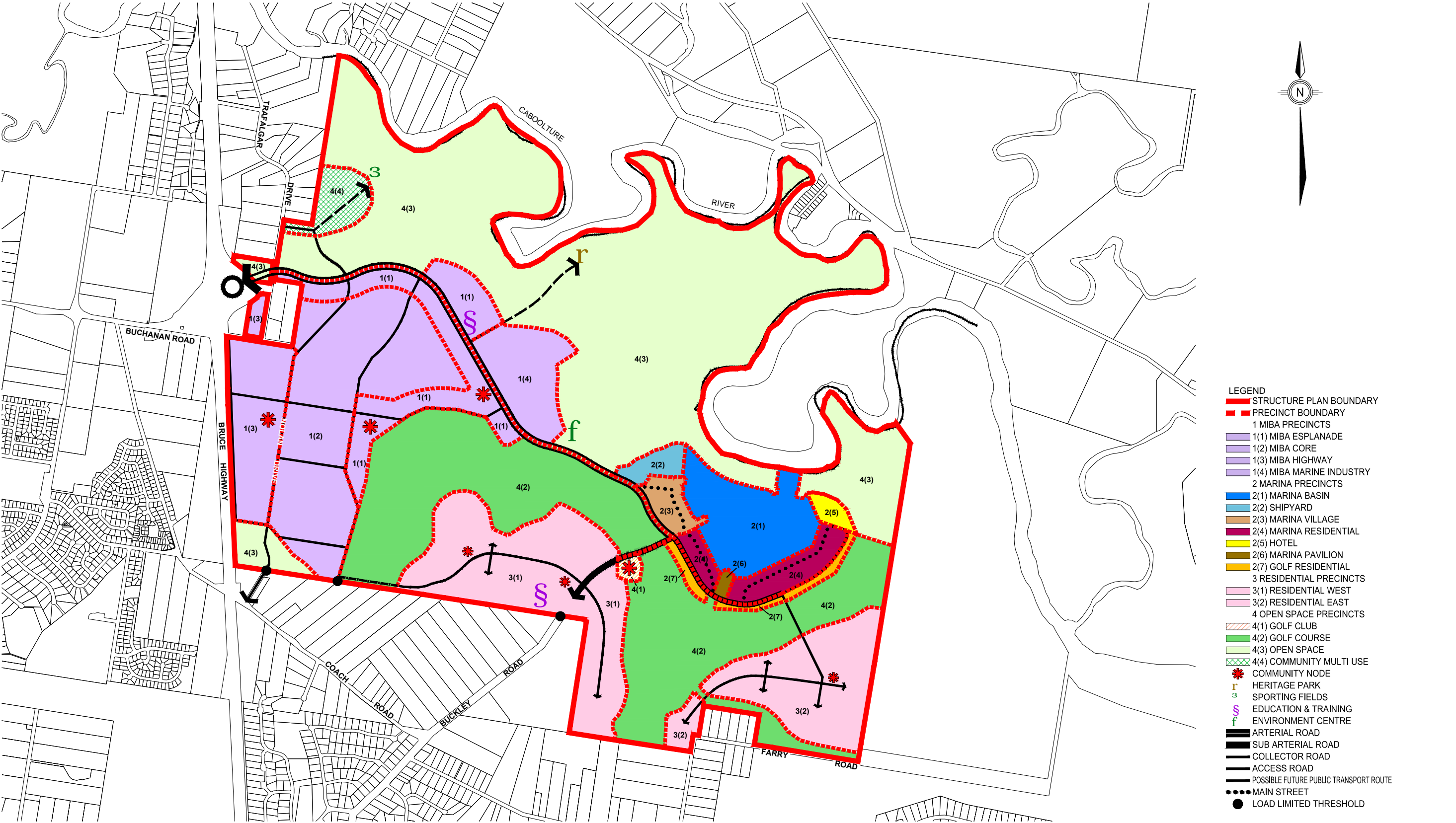
North East Business Park

FIGURES

Figure 1 NEBP Development Footprint
and Precincts Boundaries

Figure 2 NEBP Precincts and Real
Property Descriptions

Figure 3 NEBP Precincts and Aerial
Photography Overlay



Plan sourced from PMM Brisbane Pty Ltd, Dwg name 20430STRUCTURE,
Plan Ref 20430-10G, 13 November 2007.

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Rev: Orig. Date: 11/12/2013

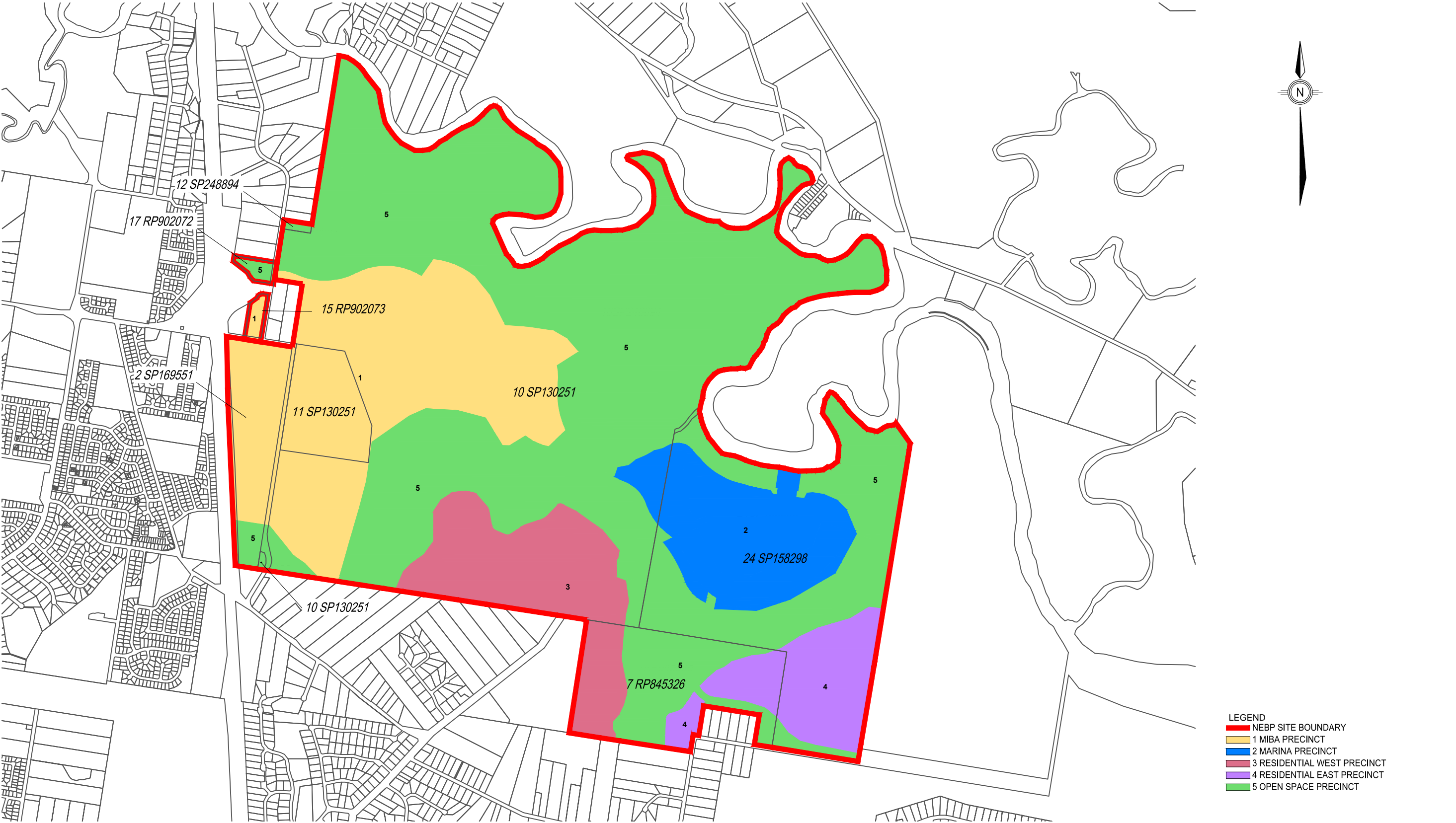
Northeast Business Park Pty Ltd

CAD FILE: L:\7903-59 Northeast Business Park\Acad\Figure 1 - NEBP Development footprint and precincts.dwg
XREF's: 20430Structure

NEBP DEVELOPMENT FOOTPRINT AND PRECINCTS

Project No.: 7903/59

PRINT DATE: 12 November, 2013 - 2:13pm



Plan sourced from PMM Brisbane Pty Ltd, Dwg name 20430STRUCTURE,
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Rev: 0 | Drawn: M.H | Checked: J.D | Date: 30/01/2012

Northeast Business Park Pty Ltd
CAD FILE: I:\7903-59 Northeast Business Park\Acad\Figure 2 - NEBP Precinct and Real Property Descriptions_v2.dwg
XREF's: DCDB_updated 2013; DCDB_updated 2013 lot and plan

Project No.: 7903/59

PRINT DATE: 31 January, 2014 - 12:01pm

Scale 1:20,000 (A3)
FIGURE 2
NEBP PRECINCTS AND REAL PROPERTY DESCRIPTIONS



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Plan Ref 20430-10G, 13 November 2007.

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Rev: 0 | Drawn: M.H | Checked: J.D | Date: 30/01/2012

Northeast Business Park Pty Ltd
CAD FILE: I:\7903-59 Northeast Business Park\Acad\Figure 3 - NEBP Precinct and Aerial Photography Overlay_v2.dwg
XREF's: DCDB_updated 2013

Project No.: 7903/59

PRINT DATE: 31 January, 2014 - 12:23pm

NEBP PRECINCT BOUNDARIES AND AERIAL PHOTOGRAPHY OVERLAY

FIGURE 3

North East Business Park

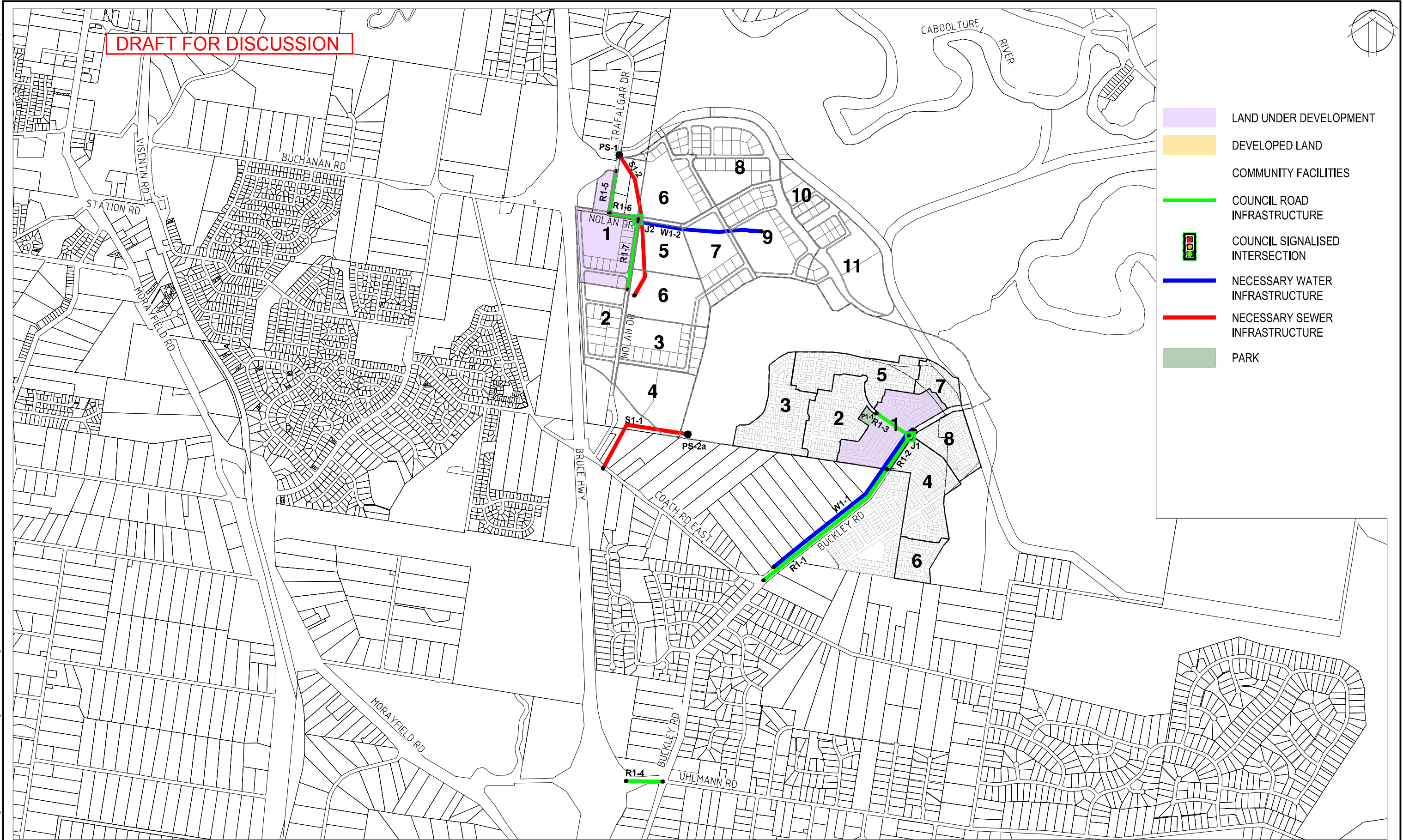
APPENDIX

A

INDICATIVE STAGING PLAN (DRAWING
REF: 7903-59-002-111)

DATE PLOTTED: 5 December 2013 8:34 AM BY: STEVEN HANCOCK (BRISBANE)

XREF's: X-BNE-LOGO; X-GRP-A1-SHT; X-Caboolture_mga94; X-7903-59-002-LOT-LAYOUT; X-NEBP_MIBA_Large_Lot_Layout
CAD FILE: L:\7903-59 Northeast Business Park\002\Design and Documentation\Acad\Drawings\7903-59-002-100.dwg



						Verified			
						Date			
						Approved			
						Date			
1	29/11/2013	WATER AND SEWER INFRASTRUCTURE ADDED				S.H	E.C	E.C	
Rev.	Date	Description				Des.	Verif.	Appd.	RPEQ No.

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Drawn S.H.	Date 12/11/2013	Client NORTH EAST BUSINESS PARK PTY LTD			
Checked E.C.	Date	NORTH EAST BUSINESS PARK MIBA AND RWA			
Designed	Date	NECESSARY DEVELOPMENT INFRASTRUCTURE			
		STAGE 1			
		Status DRAFT NOT TO BE USED FOR CONSTRUCTION PURPOSES			
		Datum A.H.D.	Grid	Scale	Size
		Drawing Number 7903-59-002-101		Revision 1	

North East Business Park

APPENDIX

B

NEBP LAND BASED MNES PROFILES

Appendix B: Land Based MNES Profiles

Species Name	Common Name	EPBCA Status	Species Profile	Critical Habitat Resources	Additional Information
<i>Acacia attenuata</i>		V	HABIT: This slender shrub grows to a height of 3-4 m and tends not to occur further than 40 km inland from the coast. The species is restricted to heath ecotones or layered eucalypt open-forest and woodland. <i>Acacia attenuata</i> has been recorded growing in shrublands with <i>Leptospermum whitei</i> and <i>Baekea frutescens</i> , in wallum with <i>Banksia aemula</i> and <i>Eucalyptus robusta</i> , in woodlands with <i>Corymbia trachyphloia</i> , <i>E. umbra</i> and <i>Banksia oblongifolia</i> , and in open forests of <i>E. umbra</i> , <i>E. racemosa</i> and <i>Melaluca quinquenervia</i> . It prefers areas with high rainfall and can survive seasonal waterlogging in sandy soils. It usually occurs in areas less than 1m AHD. Potential habitat Regional Ecosystems include: RE12.3.5 and RE12.5.3. THREATS: Urbanisation and habitat clearance constitute the greatest threat to this species.	Low lying, high rainfall heathland or open eucalypt forest within coastal regions.	http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=10690
<i>Arthraxon hispidus</i>	Hairy Joint Grass	V	HABIT: Hairy joint grass is a slender, creeping grass with branching, erect to semi-erect purplish stems that form roots at the node. Leaf-blades are ovate to ovate-lanceolate, 2 – 6 cm long, broad at the base and tapering abruptly to a short point with long white hairs fringing the margins. Hairy joint grass is typically described as moisture and shade-loving grass often associated with the edges of rainforest, wet sclerophyll forest, creeks and swamps. Potential habitat Regional Ecosystems include: RE12.3.5. THREATS: Major threats to this species include: <ul style="list-style-type: none"> • clearing of habitat for agriculture and development; • inappropriate fire regimes; • over-grazing by domestic stock and slashing or mowing of habitat; and • competition from introduced grasses such as <i>Paspalum</i> and <i>Kikuyu</i>. 	There is growing evidence from the north-coast of New South Wales, that the persistence and survival of Hairy Joint Grass is driven more by a dependence on groundwater.	http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=9338 http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10066
<i>Cryptostylis hunteriana</i>	Leafless Tongue Orchid	V	HABIT: This leafless orchid has stems 50-450 mm tall with 1 to 10 flowers. The flowers are 20-30 x 6-8 mm. It occurs from Rainbow Beach to Tin Can Bay and inland to Gibraltar Range. It is a highly localised species occurring singly or in colonies in moist sandy soil in sparse to dense heath and sedgeland. They can also occur in coastal forest in moist to dry clay loam. This species has not been observed above 1000m AHD. Potential habitat Regional Ecosystems include: RE12.3.5 and RE12.5.3. THREAT: As this species typically occurs in coastal areas, a major threat to its survival is increasing development pressures on coastal areas. While the site supports some habitat (i.e. swampy heath) that may provide suitable habitat for <i>Cryptostylis hunteriana</i> , it is unlikely that this species occurs within the site owing to: <ul style="list-style-type: none"> • an extensive history of disturbance associated with various altered land uses that have occurred across the site; • heavy infestations of weed species within the swampy heathland; and • trampling and grazing by livestock. 	Moist sandy soil or clay loam within dense heath or sedgeland occurring below 1000m altitude.	http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=9338

Appendix B: Land Based MNES Profiles

Species Name	Common Name	EPBCA Status	Species Profile	Critical Habitat Resources	Additional Information
<i>Phaius australis</i>	Lesser Swamp orchid	E	<p>HABIT: This orchid occurs along the coastlines of Queensland and New South Wales at altitudes up to 1100 m. It can grow to be 2 m tall and have up to 16 flowers. Flowers are usually a deep brownish red. It is most common in swamps and islands in the Moreton District. It grows in swamps and low lying depressions within forests of the coastal lowlands. It requires full shade and is often found in association with <i>Melaleuca quinquenervia</i> wetlands. Potential habitat Regional Ecosystems include: RE12.3.5.</p> <p>THREATS: The major threats to this species include:</p> <ul style="list-style-type: none"> • clearing and fragmentation of habitat; • drainage of swamps or pollution from nutrient run-off; • frequent fire; • grazing and trampling by domestic livestock and feral pigs; and • weed invasion. 	Swamps and low lying depressions within forests requires full shade, often associated with <i>Melaleuca quinquenervia</i> wetlands.	http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=5872
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	V	<p>HABIT: The Grey-headed Flying-fox occurs in a coastal belt from Rockhampton to Melbourne and occasionally individuals are found in Bass Strait. It feeds on a wide variety of flowering and fruiting plants, including rainforest trees, eucalypts, tea-trees and banksias. Groups of this species form camps in gullies, typically not far from water and usually in vegetation with a dense canopy. Potential habitat Regional Ecosystems include: RE12.3.5 and RE12.5.3. THREATS: Major threats to this species include:</p> <ul style="list-style-type: none"> • habitat loss; • conflict between residents and any large camps of flying fox that may occur within the immediate region; • interference from lighting and noise associated with the development on populations in the region; and • increased risk of vehicle strike. 	Tropical and temperate wet and dry sclerophyll forest and mangroves. Roosts in trees beside water, feeds on flowering trees.	http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=186
<i>Phascolarctos cinereus</i>	Koala	V	<p>HABIT: The koala <i>Phascolarctos cinereus</i>, Family Phascolarctidae, is a tree-dwelling, medium-sized marsupial with a stocky body, large rounded ears, sharp claws and variable but predominantly grey-coloured fur. It is one of Australia's most distinctive and iconic wildlife species. The Koala's range stretches from the temperate south of the country to the tropical north. Koalas habitat consists of open eucalypt forest and woodland at lower altitude in undulating country on relatively deep and usually high nutrient soil. Primary food species include <i>Eucalyptus</i>, <i>Corymbia</i>, <i>Lophostemon</i>, <i>Angophora</i> and <i>Melaleuca</i> species. The species does not use nests or dens and is considered nomadic within a home range which is usually approximately 100ha in size. Potential habitat Regional Ecosystems include: RE12.3.5 and RE12.5.3. THREATS: Vegetation clearing and habitat fragmentation is the primary threat to this species, with vehicle strike, attacks from domestic dogs and increases in disease have also contributed heavily to population decline.</p>	Open Eucalypt forest and woodland at lower altitude in undulating country on relatively deep and usually high nutrient soil. Primary food species include <i>Eucalyptus</i> , <i>Corymbia</i> , <i>Lophostemon</i> , <i>Angophora</i> and <i>Melaleuca</i> species.	http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=85104

Appendix B: Land Based MNES Profiles

Species Name	Common Name	EPBCA Status	Species Profile	Critical Habitat Resources	Additional Information
<i>Xeromys myoides</i>	Water mouse	V	HABIT: <i>Xeromys myoides</i> , the water mouse or false water-rat, is a small native rodent recorded from coastal saltmarsh including samphire shrublands, saline reed-beds and saline grasslands, mangroves and coastal freshwater wetlands. The water mouse has small eyes and small, rounded ears. The dorsal coat is slate-grey and the belly is white. It has a maximum head and body length of 126 mm and maximum weight 64 g. The water mouse is a specialised mammal and is distinguished from other species that may be encountered in similar habitat because of its overall size and appearance. The water mouse has been recorded in coastal saltmarsh, mangrove and adjacent freshwater wetland habitats in the Northern Territory, Queensland and New Guinea. In Queensland, the species is known from the Proserpine area south to near the Queensland/ New South Wales border. The water mouse is probably entirely nocturnal, sheltering during the day and between tidal cycles in constructed nesting mounds and natural or artificial hollows. The species feeds on a variety of molluscs, crustaceans and polyclads located within the tidal areas of mangrove communities. Potential habitat Regional Ecosystems include: RE12.1.1, RE12.1.2 and RE12.1.3. THREATS: The most important issues for the water mouse are the loss, degradation and fragmentation of inter-tidal and fringing freshwater wetland communities utilised by the species. Predation pressures from feral and domestic dogs, foxes and feral and domestic cats, particularly those located close to urban environments.	Coastal wetland complexes containing a mixture of mangrove and fringing saltmarsh, saline reed-beds, saline grasslands and freshwater wetland habitats.	http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=66
<i>Erythrorhynchus radiatus</i>	Red Goshawk	V	HABIT: Species has a distribution that encompasses coastal and sub-coastal areas from the Kimberley region of Western Australia to northern New South Wales. Throughout its range it is most frequently observed in tropical to warm temperate forests and woodlands in close proximity to watercourses and wetlands where it feeds primarily on other bird species. It is a sparsely distributed and rarely encountered species and as a consequence little is known of its biology or reasons for its apparent rarity. Potential habitat Regional Ecosystems include: RE12.1.1, RE12.1.3, RE12.3.5 and RE12.5.3. THREATS: Habitat clearing for development. Anthropological disturbance to nesting sites.	Various habitat types including coastal & sub-coastal tall open forest, tropical savannah adjacent to wooded or forested rivers, and rainforest edges are utilized with a preference for a mosaic of vegetation types near to a permanent watercourse.	http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=942

Appendix B: Land Based MNES Profiles

Species Name	Common Name	EPBCA Status	Species Profile	Critical Habitat Resources	Additional Information
<i>Rostratula australis</i>	Australian Painted Snipe	V	HABIT: The Australian Painted Snipe is small freshwater wader, with a long bill that droops slightly at the tip. The female has a chestnut-black hood with a bold white eye-patch and a cream stripe along the middle of the crown. The back and wings are patterned bronzy-greenish-grey with a few cream streaks and the underparts are white. The male is slightly smaller and has greyer, less contrasting patterns, but also has large cream spots on the wings. In the past, the population of Painted Snipe in Australia has been treated as a separate race (<i>australis</i>) of a more widespread species (often called the Greater Painted Snipe <i>Rostratula benghalensis</i>). The Australian Painted Snipe is restricted to Australia. Most records are from the south east, particularly the Murray Darling Basin, with scattered records across northern Australia and historical records from around the Perth region in Western Australia. Throughout its range the species prefers fringes of swamps, dams and nearby marshy areas where there is a cover of grasses, lignum, low scrub or open timber. Within its habitat it forages nocturnally on mud-flats and in shallow water, feeding on worms, molluscs, insects and some plant-matter. The Australian Painted Snipe nests on the ground amongst tall vegetation, such as grasses, tussocks or reeds. The nest consists of a scrape in the ground, lined with grasses and leaves. Breeding is often in response to local conditions; generally occurs from September to December. Incubation and care of young is all undertaken by the male only. Potential habitat Regional Ecosystems include: RE12.1.2, RE12.3.5 and cleared wetlands. THREATS: Loss and degradation of wetland habitat. Grazing and associated trampling of wetland vegetation by livestock. Changes to fire regimes. The replacement of endemic wetland vegetation by invasive, noxious weeds could render habitats less suitable or unsuitable for the snipe. Predation by introduced terrestrial predators such as the European Red Fox (<i>Vulpes vulpes</i>) or feral cat (<i>Felis catus</i>).	Coastal and inland swamps, dams and nearby marshy areas where there is a cover of grasses, lignum, low scrub or open timber.	http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=77037
<i>Lathamus discolor</i>	Swift Parrot	E	HABIT: This species breeds exclusively in Tasmania, coinciding its breeding season with the flowering of the Tasmanian blue gum. Migration to the mainland of Australia occurs in autumn where the species forages on lerps and nectar in box ironbark forests and eucalypt woodlands in Victoria, New South Wales and occasionally in the Australian Capital Territory and south east Queensland. Potential habitat Regional Ecosystems include: RE12.3.3 and RE12.5.3. THREATS: Habitat loss. Anthropological interference to nesting areas. Increase activity of domestic pets.	Preferences of habitat for the swift parrot, in Queensland, include eucalypts such as narrow leaved ironbark, yellow box forests and forest red gum. Larger trees are believed to be preferred by the species.	http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=744
<i>Xanthomyza phrygia</i>	Regent Honeyeater	E & M	HABIT: This species range has dramatically decreased over the last thirty years from south-east Queensland to north-eastern Victoria. It inhabits woodland areas with dense canopies and a large number of large trees. The habitats occupied by this species are generally found on the inland slopes of forests in south-east Queensland. Noisy, aggressive and conspicuous, it forages mainly in flowers and foliage in the upper canopy, feeding on nectar, fruits and insects. Breeding occurs from August to January. Potential habitat Regional Ecosystems include: RE12.5.3 THREATS: Habitat loss. Anthropological interference to nesting areas. Increase activity of domestic pets.	Eucalypt forest and woodland are considered critical habitat for this species	http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=82338

Appendix B: Land Based MNES Profiles

Species Name	Common Name	EPBCA Status	Species Profile	Critical Habitat Resources	Additional Information
<i>Cyclopsitta diophthalma coxeni</i>	Coxen's Fig-Parrot	CE & M	HABIT: This species is distributed across south-east Queensland and northern New South Wales. Habitat preference is general, having been sighted in both upland and lowland areas of riparian corridors in woodland, subtropical rainforest and littoral forest. Habitats where fig trees are present are thought to be favoured. Breeding sites are also variable, with nests reported within, and on ecotones of, subtropical rainforest, dry rainforest and sclerophyll forests. Potential habitat Regional Ecosystems include: RE12.3.5 and partially cleared riparian zones. THREATS: Habitat loss from vegetation clearing. Anthropological disturbance to breeding areas. Loss of feeding resources due to vegetation clearing. Low population preventing a social breeding trigger being activated.	The presence of fruiting trees, particularly fig trees, seems to be of importance in habitat preference of the Coxen's Fig-Parrot. No single habitat type has been identified as critical.	http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=59714
<i>Litoria longiburensis</i>	Wallum Sedgefrog	V	HABIT: The Wallum Sedge Frog is a small tree-frog that makes a soft 'buzzing' call. The Wallum Sedge Frog has been recorded from Fraser Island in south-east Qld south to Woolgoolga in NSW. The present geographic range and extent of occurrence for the Wallum Sedge Frog is largely unchanged since pre-European times., however since European arrival, the area occupied has declined by up to 75% due to land clearing for agriculture, the establishment of pine plantations, resort and residential development, and sand mining. The Wallum Sedge Frog is found in ephemeral, semi-permanent and permanent wetlands with emergent reeds, ferns and/or sedges, in undisturbed coastal wallum. While most common in swamps, the Wallum Sedge Frog may also be found around creeks and freshwater lakes in coastal wallum. The Wallum Sedge Frog is typically associated with oligotrophic (nutrient poor) and acidic (pH between 3.5 and 6.0) water that is typically clear, still and tannin stained. Potential habitat Regional Ecosystems include: RE12.3.5. THREATS: Habitat loss associated with agricultural, mining, forestry and urban development. Habitat degradation including the trampling of reed beds, changes in hydrology, altered water chemistry, and increases in soil and water nutrient levels. Habitat fragmentation as a result of land clearing. Inappropriate fire regimes. Predation by the introduced Mosquito Fish (<i>Gambusia affinis</i>). Competition with the Cane Toad. Use of biocides in weed and mosquito control. Pig damage to breeding habitat. Vehicular traffic on roads bisecting wallum swamps.	Acidic, freshwater swamps are important breeding ground sites.	http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=1821 http://www.environment.gov.au/biodiversity/threatened/publications/pubs/wallum-frogs.pdf
<i>Pseudomugil mellis</i>	Honey Blue Eye	V	HABIT: <i>Pseudomugil mellis</i> (Honey Blue-eye) is a small freshwater fish, growing to 3.8 cm, known to occur in Queensland, where it has a restricted range from the Brisbane area northwards to the Bundaberg area, including Fraser Island. It inhabits slightly acidic (pH 4.4–6.8), clear and tannin-stained lakes, streams and wetlands in coastal heath (wallum) areas, usually where there is little or no flow and the fish can find shelter in dense, aquatic vegetation, such as emergent and submerged sedges. This species remains relatively abundant in the Noosa River and Fraser Island localities and occurs within the Mellum Creek Scientific Reserve, Cooloola National Park, and Fraser Island National Park. Potential habitat Regional Ecosystems include: RE12.3.5. THREATS: The main identified threats to Honey Blue-eye include habitat clearing and/or degradation for residential, forestry and agriculture developments; collection for aquariums; and competition from introduced Mosquito Fish (<i>Gambusia holbrooki</i>).	Slightly acidic (pH 4.4–6.8), clear and tannin-stained lakes, streams and wetlands in coastal heath (wallum) areas, usually where there is little or no flow and the fish can find shelter in dense, aquatic vegetation, such as emergent and submerged sedges.	http://www.environment.gov.au/biodiversity/threatened/species/pubs/26180-conservation-advice.pdf http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=26180

Appendix B: Land Based MNES Profiles

Species Name	Common Name	EPBCA Status	Species Profile	Critical Habitat Resources	Additional Information
<i>Caretta caretta</i>	Loggerhead Turtle	E & M	HABIT: Loggerhead turtles have a worldwide tropical and subtropical distribution. In Australia, they occur in coral reefs, bays and estuaries in tropical and warm temperate waters off the coast of Queensland, Northern Territory, Western Australia and New South Wales. The eastern Australian population nests on the southern Great Barrier Reef and adjacent mainland coastal areas, including Mon Repos, Wreck Rock, Wreck Island, Erskine Island, and Tryon Island. Loggerhead turtles are carnivorous, feeding mostly on shellfish, crabs, sea urchins and jellyfish. THREATS: Marine turtles face a number of threats associated with the following broad categories of human activity: commercial and recreational fishing; coastal infrastructure and development (including industrial, residential and tourism development); Indigenous harvest; feral animal predation; and climate change. Coastal developments, including residential, industrial and tourism development, can directly destroy or degrade beach habitats used as nesting sites. The habit of Loggerhead Turtles to bask in shallow waters, has led to interference by humans (Limpus 2008a) while in Western Australia the threat of uncontrolled vehicle access on nesting beaches also poses a threat (WA DEC 2009).	Nesting grounds.	http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=1763
<i>Chelonia mydas</i>	Green Turtle	V & M	HABIT: Green turtles occur in seaweed-rich coral reefs and inshore seagrass pastures in tropical and subtropical areas of the Indo-Pacific region. In Australia, there are seven regional populations of green turtles that nest in different areas; the southern Great Barrier Reef, the northern Great Barrier Reef, the Coral Sea, the Gulf of Carpentaria, Western Australia's north-west shelf, the Ashmore and Cartier Reefs and Scott Reef. Adult green turtles feed mostly on seagrasses and algae although immature animals are carnivorous. THREATS: In Australia, the main current threats to Green Turtles are disturbance (e.g. light disturbance) and habitat damage due to coastal development; by-catch from fisheries and shark control measures; predation on nests; boat strikes; entanglement and ingestion of marine debris; and in some areas, indigenous harvesting (DEWHA 2008; Lanyon et al. 1989). Potential threats include changes to the sea surface temperature, particularly changes to the Southern Oscillation Index, which determines breeding intervals; chance disasters (e.g. oil spills); and feral predator invasions (DEH 2005b).	Seagrass pastures and nesting locations	http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=1765
<i>Lepidochelys olivacea</i>	Pacific Ridley	E & M	Habit: The olive ridley turtle has a worldwide tropical and subtropical distribution, including northern Australia. Olive ridley turtles typically occur in shallow soft-bottomed habitats of protected waters. In Australia, they occur along the coast from southern Queensland and the Great Barrier Reef, northwards to Torres Strait, and across to the Joseph Bonaparte Gulf in Western Australia. No large rookeries of olive ridley turtles have been recorded in Australia. An estimate of the nesting population for Australia is 1000-5000 females annually, with most nesting in north west Arnhem Land. In Northern Australia nesting occurs all year round, although most nesting occurs during the dry season from April to June. Hatchlings emerge from the nests about two months after laying. The olive ridley turtle is carnivorous, feeding mostly on shellfish and small crabs. THREATS: Marine turtles face a number of threats associated with the following broad categories of human activity: commercial and recreational fishing; coastal infrastructure and development (including industrial, residential and tourism development); Indigenous harvest; feral animal predation; and climate change. Coastal developments, including residential, industrial and tourism development, can directly destroy or degrade beach habitats used as nesting sites. Given the remote location of beaches used by nesting Olive Ridley Turtles in Australia, this threat is considered to be relatively low within Australia.	Nesting grounds	http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=1767

Appendix B: Land Based MNES Profiles

Species Name	Common Name	EPBCA Status	Species Profile	Critical Habitat Resources	Additional Information
<i>Eretmochelys imbricate</i>	Hawksbill Turtle	V & M	HABITS: Hawksbill turtles typically occur in tidal and sub-tidal coral and rocky reef habitats throughout tropical waters, extending into warm temperate areas as far south as northern New South Wales. In Australia the main feeding area extends along the east coast, including the Great Barrier Reef. Other feeding areas include Torres Strait and the archipelagos of the Northern Territory and Western Australia, possibly as far south as Shark Bay or beyond. Hawksbill turtles also feed at Christmas Island and the Cocos (Keeling) Islands. Along the Great Barrier Reef, hawksbill turtles nest in low numbers from just north of Princess Charlotte Bay to Torres Strait. Nesting also occurs in the Northern Territory and Western Australia. Sponges make up a major part of the diet of hawksbill turtles, although they also feed on seagrasses, algae, soft corals and shellfish. THREATS: In Australia, the main current threats to Hawksbill Turtles are disturbance and habitat damage due to coastal development; by-catch from fisheries and shark control; predation on nests; boat strikes; entanglement and ingestion of marine debris; and unsustainable levels of indigenous harvest in some areas. Potential threats include climate change, chance disasters (e.g. oil spills) and feral predator invasions (DEH 2005a; Environment Australia 2003ai).	Sponge, soft-coral and seagrass beds; nesting grounds	http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=1766
<i>Argyreus hyberbius inconstans</i>	Australian Fritillary	not listed	HABIT: The Australian fritillary butterfly has been recorded in south-eastern Queensland and north-eastern New South Wales between Gympie and Port Macquarie. Most specimens have been collected from river estuaries or swampy coastal areas at or near sea level. The larval food plant, Native Violet (<i>Viola betonicifolia</i>), is vital for the breeding efforts of the butterfly. Therefore, Ling-leaved Matrush and Blady grass are also important habitat resources. THREATS: Vegetation clearing, Weed invasion.	Coastal wetlands containing te larval food plant, Native Violet (<i>Viola betonicifolia</i>).	http://www.ehp.qld.gov.au/wildlife/animals-az/australian_fritillary_butterfly.html

North East Business Park

APPENDIX

C

CORRECTIVE ACTION REQUEST FORM (EXAMPLE)

CORRECTIVE ACTION REQUEST (Example)

Report No: _____

Date: _____

DETAILS OF NON-CONFORMANCE:

Inspected by:

DETAILS OF PROPOSED ACTION

Passed to Developer (as applicable): y/n Name:

Date:

Passed to Regulator (as applicable): y/n Name:

Date:

Reply required by:

CONSULTANT/EXPERT/REGULATOR ADVICE (as required):

Date action required by (if applicable):

Signed (by Developer or Developer's representative):

Date:

AUTHORITY TO PROCEED

Sign:

Date:

ACTION CARRIED OUT

Sign:

Date:

ELEMENT RE-INSPECTED BY

Sign:

Date:

COPY ISSUED TO DEVELOPER

Date:

Sign: