EPBC Act referral

Australian Government
Department of Agriculture, Water and the Environment

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Title of proposal	2021/9058 - Northbank Enterprise Hub

Section 1

Summary of your proposed action

1.1 Project industry type Commercial Development

1.2 Provide a detailed description of the proposed action, including all proposed activities

Northbank Enterprise Hub Pty Ltd (NEH) propose to establish a business and industrial park on approximately 240 hectares of vacant agricultural land located within Lot 1001 (DP1127780) at Tomago Road, Tomago NSW 2322 (see Att01, Figure 1-2). NEH owns Lot 1001 (DP 1127780) and is the proponent for the associated NSW government Major Project Approval MP10_0185 for business industrial development over Lot 1001. The site is within the Tomago Industrial Site, a State Significant Precinct under the NSW State Environmental Planning Policy (State Significant Precincts 2005), identified as employment lands under the Lower Hunter Regional Strategy & the more recent Greater Newcastle Metropolitan Plan 2036 (GNMP 2036) issued by NSW DPIE (Department of Planning, Industry & Environment) as development area within the Tomago Industrial Precinct, an important employment area into the future. NEH also retains an existing EPBC Approval 2007/3343 which includes WesTrac, Lot 210, Lot 211 (DP1174939) and 17 hectares of Lot 1001 (along the northern section of the Lot). As such, the subject site for the purposes of this referral is specific to part of Lot 1001 (223.18 hectares) (Att01, Figure 2).

The proposed action, to be known as the Northbank Enterprise Hub, is a staged subdivision of 59 lots for future industrial use (see Att02 Staging Plan) & will include site filling and earthworks, road construction, stormwater and flood management, infrastructure works, vegetation removal, landscaping & other associated subdivision activities. NEH envisage that the proposed action will be delivered over a 20-year period in response to market demand for industrial businesses.

A summary of the key activities proposed is outlined further below.

A staged subdivision of Lot 1001 into 59 lots for the purpose of an industrial and business park estate. Design of the subdivision is intended to provide flexibility for future occupants of the site. The subdivision will be undertaken progressively in stages within five overarching stages, referred to in the NSW Project Approval (Att06, Schedule 3, Page 6), over approximately 20 years. Timing of stages will be subject to demand for industrial lots but is scheduled to commence in 2022.

Filling and earthworks – ~3.7 million m3 of fill has been approved for import to raise 154ha of Lot 1001 above the 1 in 100-year flood level. It is proposed only to use Virgin Excavated Natural Material or Excavated Natural Material for filling in order to ensure a high quality of fill material that will not result in any potential leaching of contaminants to wetlands adjacent. The proposed excavated natural material to be used as fill on site will comply with NSW “Protection of the Environment Operations (Waste) Regulation 2005 – General Exemption Under Part 6, Clause 51 and 51A, The excavated natural material exemption 2008”. The work method used to fill the site will be to preload for consolidation. Geotechnical advice in this regard indicates that 1-2m stockpile depths of preload material will result in acceptable consolidation rates.

Access, Roads and Intersections - Access to subdivision will be via Tomago Road & existing adjacent Industrial Estate roads. Construction of two new signalised intersections will occur on Tomago Road (Central and Western). An internal road network to access all allotments & connect with the adjacent Industrial Estate. All allotments will be provided with access from these internal roads, no direct property access from Tomago Road is proposed to ensure efficiency & safety is maintained.

Other infrastructure - Potable water, wastewater, electricity, and telecommunications would be provided through the augmentation of existing services. Relocation of the existing 132kV transmission line & easement along a portion of the Tomago Road frontage. Infrastructure includes a minor levee to be constructed west of the site.

Management measures: Stormwater Management System, Water Quality Monitoring, Wetland Interface Strategy, Wetland Management and Monitoring, Biodiversity Management, Noxious Weed, Acid Sulphate Soils Management, Compensatory (Environmental Offset) Strategy & Construction Noise Management.

Vegetation clearing (not including cleared areas) -

- 105.91 ha Exotic Grasslands
- 5.88 ha Constructed Freshwater Wetland Complex (existing)
- 27.10 ha Regenerating Freshwater Wetland Complex
- 48.42 ha Freshwater Wetland Complex
- 1.11 ha Regenerating Swamp Oak Forest (EPBC Threatened Ecological Community – TEC)
- 4.69 ha Swamp Oak Forest (does not meet EPBC TEC criteria)
- 8.63 ha Swamp Oak Forest (EPBC TEC)

- 1.47 ha Swamp Sclerophyll Forest

See Vegetation map (Att01 Figure 3). Note, the boundary between the development footprint & the onsite offset is consistent with the Ecological Assessment (Att07 Ecological report, Figure 9, Page 58) & approved Offset Strategy (Att08, Figure 2, Page 4), however, the boundary of the vegetation communities within these areas has been revised according to vegetation validation surveys (May 2020 - Kleinfelder).

Approved Onsite Biodiversity Offsets (see Att08 Offset Strategy, Figure 2, Page 4):

Offset provides a minimum 380 m buffer between the development site & common boundary with Hunter Estuary Ramsar Wetland in the eastern part of the site.

Eastern onsite offset (13.1 ha):

- 10.9 ha of Freshwater Wetland Complex
- 2.41 ha Swamp Oak Forest (EPBC TEC)
- 0.22 ha Regenerating Swamp Oak Forest (EPBC TEC)
- 0.13 ha Swamp Oak Forest (does not meet EPBC TEC criteria)
- Rehabilitation of 0.71 ha of exotic grassland to Freshwater wetland complex

Southern onsite offset (4.5 ha):

- 2.41 ha Swamp Oak Forest (EPBC TEC)
- Rehabilitation of 1.05 ha of exotic grassland to Swamp Oak Forest (within 4.5ha southern offset)

Onsite offset areas are shown in Att01 Figure 2 and 3. As above, the boundary between the development footprint & the onsite offset is consistent with Att07 Ecological report and approved Offset Strategy (Att08), however, the boundary of the vegetation communities within these areas has been revised according to recent vegetation validation surveys (May 2020 - Kleinfelder).

Approved Offsite Biodiversity Offset (see Att08 Offset Strategy, Figure 3, Page 9):

- 250.8 ha of land in northern NSW referred to as Shark Creek containing Coastal Freshwater Meadows, Paperbark Swamp Forest, Red Mahogany Forest & Forest Red Gum – Swamp Box Forest.

Landscaping / Public Open Space - Gunner Heritage Park near the southern boundary, designed to retain four former WWII anti-aircraft gun emplacements & an underground command post. Riverside Park, a public open space in the southern part of the site near the Hunter River Public open space in the north-western section of the site near Tomago House.

Approximate vehicle movements - All material will be transported to the site via road (truck & dog). Total truck numbers are estimated to be 248,376 over a 20-year period at different staging intervals as market demand for land dictates.

Employment - 180 construction employees.

Capital Investment Value - $300 million.

Construction Hours - Mon – Fri: 7am to 6pm, Sat: 8am to 1pm. No work on Sundays or public holidays.

Duration - Stages are estimated to take 18 months to complete within the 5 main approval stages and will be undertaken over a 20-year period (subject to demand), commencing in 2022.

1.3 What is the extent and location of your proposed action?

See Appendix B

1.5 Provide a brief physical description of the property on which the proposed action will take place and the location of the proposed action (e.g. proximity to major towns, or for off-shore actions, shortest distance to mainland)

Lot 1001 is approx. 240.18 hectares in size, & is situated off Tomago Road, an industrial area of Tomago (NSW). The site is located approximately 8 km south-west of Raymond Terrace, 12 km north-west of the Newcastle CBD & 1.3 km from Fullerton Cove to the east (see Att01, Figure 1).

Immediately to the west of Lot 1001 is a small cluster of industrial properties located along the riverbank. Tomago Road lies to the north, with light industry & the Tomago Aluminium smelter located on the northern side of Tomago Road. Tomago House and Chapel, items listed on the NSW State Heritage Register are located outside the development footprint, in proximity to the north-western boundary. NEH holds the NSW and Commonwealth project approval for a business and industrial estate immediately to the north which has been partially developed.

Immediately to the east of Lot 1001 is Lot 1002, a conservation lot of approximately 240 hectares. Hunter Estuary Wetlands & a Ramsar Wetland lie further east.

1.6 What is the size of the proposed action area development footprint (or work area) including disturbance footprint and avoidance footprint (if relevant)?

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Lot 1001 is approximately 240.18 ha. However, 17 ha is covered by an existing EPBC approval (2007/3343) (see Att01, Figure 2). For consistency with the offset strategy relating to the proposed action, a small area (0.6 ha) covered by the existing EPBC approval has been included in the current subject site as this comprises part of the onsite offset that is specific to the proposed Action. As such, the proposed disturbance area is 205.52 ha and the onsite offset is 17.62 ha (avoidance).

1.7 Proposed action location

Lot - Lot 1001 DP1127780

1.8 Primary jurisdiction New South Wales

1.9 Has the person proposing to take the action received any Australian Government grant funding to undertake this project?

☐ Yes ☑ No

1.10 Is the proposed action subject to local government planning approval?

☐ Yes ☑ No

1.11 Provide an estimated start and estimated end date for the proposed action

Start Date 10/01/2022
End Date 10/01/2041

1.12 Provide details of the context, planning framework and state and/or local Government requirements

The proposal was subject to assessment under Part 3A of the NSW Environmental Planning & Assessment Act 1979 (EP&A Act) with the NSW Minister for Planning the consent authority. This section provides an overview of the key environmental planning instruments & legislation that applies to the proposed action.

Main Statutory Framework

The EP&A Act (1979) contains three schemes that impose requirements for planning approval:

- Part 3A provides for control of 'major projects' that require approval from the Minister for Planning;
- Part 4 provides for control of 'local development' that requires development consent from the local Council;
- Part 5 provides for control of 'activities' that do not require approval or development consent under Part 3A or Part 4.

The proposed action is considered a Major Project under Part 3A of the EP&A Act, as it is:

- Classified as a State Significant Site under the provisions of State Environmental Planning Policy (SEPP) (Major Development) 2005;
- Has a capital investment value of more than $5 million;
- Involves subdivision of land.

The Director-General's Requirements (DGRs) (Ref: MP 10_0185) for the project were issued by the Department of Planning on 20 October 2010. A project application addressing the DGRs, was lodged by NEH on 24 August 2012.

The Department undertook a detailed assessment of the project to ensure NEH had adequately identified & assessed its potential environmental impacts and that adequate mitigation measures were proposed to minimise those environmental impacts. The Department issued a Secretary's Environmental Assessment Report outlining its findings & concluded the proposed action has adequately mitigated its potential environmental impacts (DPE 2014a). Project Approval under Section 75J of the EP&A Act was granted by the Department on 29 June 2014 (see Att06 Project Approval) with a number of strict project conditions in place and has been commenced.

The project application and approval can be viewed on the NSW Department of Planning's Major Projects website (10_0185

- Northbank Enterprise Hub).

Environmental Planning Instruments

SEPP (Major Development) 2005
Lot 1001 is zoned IN1 - General Industrial zoning under the SEPP and is identified as a State Significant Site under Schedule 3, Part 10 Tomago Industrial Site. Despite Part 3A of the EP&A Act being repealed on 1 October 2011, Part 3A continues to apply to the proposed action based on the transitional provisions identified in Schedule 6A of the EP&A Act. These transitional arrangements also confirm that 'any State environmental planning policy or other instrument made under or for the purposes of Part 3A continue to apply to and in respect of a transitional Part 3A project'. Therefore SEPP (Major Development) 2005 also continues to apply to the proposed action.

SEPP (Coastal Management) 2018
Project conditions and mitigation measures have been put in place to ensure the project meets the objectives of this SEPP.

Koala Habitat Protection SEPP 2021
An approved Comprehensive Koala Plan of Management (CKPoM) exists for land within the Port Stephens LGA. In accordance with the new Koala SEPP, development applications are required to be comply with the approved CKPoM. As such, the development has been assessed in accordance with the Port Stephens CKPoM (see Att07 Ecological Report, Section 4.4, Page 143).

SEPP 55 Remediation of Land
A contamination assessment was undertaken for the proposed action and concluded that no significant contamination issues onsite apart from some localised contaminant matters which can be readily remediated using standard remedial procedures (see Att09 Contamination Report, Section 11, Page 60).

SEPP (Infrastructure) 2007
Pursuant to Clause 104 Traffic Generating Development, the proposed industrial subdivision is identified in Schedule 3 as a Traffic Generating Development to be referred to the RMS. A Traffic Impact Assessment has been prepared by TPK & Associates 2012.

NSW 2021 and the Hunter Regional Action Plan
The Project is consistent with a number of the priorities identified in NSW 2021 and the Hunter RAP.

Lower Hunter Regional Strategy 2006-31
The proposal would assist in achieving the employment targets identified in the Lower Hunter Regional Strategy 2006-31.

Port Stephens Local Environmental Plan (LEP)
The Port Stephens LEP is not applicable in terms of the site zoning (State Significant Site zoned IN1 General Industrial). The Major Projects SEPP confirms that the only other Environmental Planning instruments that will apply to the action are other SEPP's, where relevant.

Other relevant NSW Legislation
Contaminated Land Management Act 1997
Heritage Act 1977
National Parks and Wildlife Act 1974
Protection of the Environment Operations Act 1997
Roads Act 1993
Rural Fires Act 1997
Biodiversity Conservation Act 2016
Water Management Act 2000

1.13 Describe any public consultation that has been, is being or will be undertaken, including with Indigenous stakeholders

Throughout the preparation of the Environmental Assessment Report under the NSW Environmental Planning and Assessment Act 1979 (EP&A Act) and the post-exhibition and response to submissions phases, consultation has been undertaken with government agencies, special interest groups, utilities providers and Indigenous heritage groups along with one on one consultation with adjoining residents and members of the community via a range of mechanisms.

Specifically, the following stakeholders have been consulted with (see Att03 Public Authority Consultation):
- The Commonwealth Department of Sustainability, Environment, Water, Population and Communities (now Department of Agriculture, Water and Environment).

- NSW Department of Planning and Environment (now DPIE)
- NSW Roads and Maritime Services (RMS)
- NSW Environment Protection Authority (EPA)
- NSW Department of Environment, Climate Change and Water
- Hunter Water Corporation (HWC)
- Ausgrid
- Jemena
- Port Stephens Council
- Newcastle City Council
- NSW Department of Primary Industries (now DPIE)
- Kooragang Wetlands Rehabilitation Project (Hunter-Central Rivers Catchment Management Authority)
- The National Trust and 'Friends of Tomago House'
- Tomago Aluminium
- Hunter Bird Observers Club
- Community Group Members from Adjoining WesTrac Project Approval
- Adjoining / Nearby Land Owners

Consultation activities have included:

- Letters, phone calls, emails, Community and/or one-on-one meetings with stakeholders between 2010 - 2011.
- Public notice of project in Newcastle Herald and Port Stephens Examiner in November 2010.
- Public exhibition of the Environmental Assessment Report from 14 September to 30 October 2012 as part of EP&A Act requirements on the Department of Planning website, in public places, in the Newcastle Herald and Port Stephens Examiner and through written notification to landholders and government authorities.
- Public response to submissions regarding the Environmental Assessment Report received in December 2012. Fifteen submissions were received including from Port Stephens Council, NSW OEH, OEH Heritage Branch, EPA, RMS, DPI, CMA, NSW Rural Fire Service, HWC, Port Waratah Coal Services, National Trust, Tomago Aluminium, Hunter Bird Observers Club and three general public submissions.
- NEH's Response to Submissions including clarification and additional information regarding issues raised, provision of additional technical information on stormwater and flood risks and management,
- Provision of supplementary information to Department of Planning regarding regional flooding impacts, localised flooding and stormwater management.
- Public display of Project Application, Environmental Assessment Report, Submissions, Response to Submissions, supplementary information and project Determination on the Department of Planning website.

The proponent is aware they need to undertake additional consultation as part of this Referral application and are required to engage relevant stakeholders as part of Consent Conditions for the State project approval for the project (MP10_0185). Consultation will continue throughout the development of the project.

Indigenous Stakeholders

An Aboriginal Cultural Heritage Management Plan (see Att25 ACHMP) was prepared in 2018 and associated consultation undertaken with the following registered stakeholders (see Att05 Consultation letters):

- NTSCORP Limited
- OEH
- Hunter Local Land Services
- National Native Title Tribunal
- Worimi Local Aboriginal Land Council
- Office of Registrar, Aboriginal Land Rights Act 1983
- AGA Services
- Cacatua Culture Consultants
- Crimson-Rosie
- Divine Diggers Aboriginal Cultural Consultants
- Hunters and Collectors
- Karuah Indigenous Corporation
- Kawul Pty Ltd t/a Wonn1 Sites
- Lakkari NTCG
- Lower Hunter Aboriginal Incorporated
- Lower Hunter Wonnarua Cultural Services
- Murra Bidgee Mullangari Aboriginal Corporation
- Mur-Roo-Ma Inc.
- Nur-Run-Gee Pty Ltd

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- Roger Matthews Consultancy
- Wattaka Wonnarua CC Service
- Widescope Indigenous Group
- Wonnarua Elders Council
- Worimi Traditional Owners Indigenous Corporation
- Didge Ngunawal Clan
- Individual indigenous stakeholders

The ACHMP was approved by both NSW OEH and DPE on 16 November 2018 (Att04 Cond 37 ACHMP approval).

1.14 Describe any environmental impact assessments that have been or will be carried out under Commonwealth, State or Territory legislation including relevant impacts of the project

Detailed investigations of the existing environment & the potential impacts of the proposed action were completed by specialist consultants between 2009-2012 under NSW planning legislation. This included assessment of the following key environmental issues/impacts; Ecological Assessment (Att07 Ecological Report), Aquatic Ecology (Att24 Aquatic Impact Assessment); Flooding (Att13 Flood Report), Groundwater (Att22 Groundwater Report), Stormwater and Water Quality Management (Att14 Stormwater Assessment), Aboriginal & Historic Heritage (Att16 Historical Arch Report), Geotechnical & Contamination (Att09 Contamination Report) and Acoustics (Att26 Noise Report). After completion of investigation, assessment, design, reporting and liaising with the appropriate government agencies and NSW Department of Planning, project approval under Section 75J of the EP&A Act was granted on 29 June 2014 (Att06 Project Approval) subject to strict development conditions.

1.15 Is this action part of a staged development (or a component of a larger project)?

☑ Yes ☐ No

1.15.1 Provide information about the larger action and details of any interdependency between the stages/components and the larger action

The proposed action will be progressively constructed in small stages within the five (5) overall approval, non-consecutive stages. The staging plan has been prepared with consideration to commensurate facilities including water quality assurance, infrastructure and road access (intersection) requirements (see Att02 Staging Plan). The stages will be constructed in response to market demand for industrial land. It is anticipated that Stage 1 of the development will commence in 2022 with other stages continuing over some twenty years. The development footprint and potential impacts from all five project stages have been considered.

1.16 Is the proposed action related to other actions or proposals in the region?

☑ Yes ☐ No

1.16.1 Identify the nature/scope and location of the related action (Including under the relevant legislation)

NEH has MP07_0086 approval north and adjacent to MP10_0185. NEH holds the existing EPBC Approval (EPBC 2007/3343) to the north and the EPBC boundary includes 17ha of Lot 1001/MP10_0185. NEH has an exemplary environmental record and has submitted annual reporting on EPBC 2007/3343 since 2010 to DAWE.

A previous EPBC Referral was submitted in 2010 (Ref EPBC 2010/5660) for the proposed action, however the proposal was withdrawn on 24 Oct 2012 after the development extent was decreased and the increase of the onsite buffer (offset) between development and RAMSAR.

The existing EPBC Approval 2007/3343 covers stormwater discharge into the North South Drain into RAMSAR. By contrast, the current referral has stormwater from the proposed development directed toward the Hunter River, away from RAMSAR. In only a minor, managed and monitored form, stormwater runoff can continue east into the buffer area as requested by NPWS.

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Section 2

Matters of national environmental significance

2.1 Is the proposed action likely to have any direct or indirect impact on the values of any World Heritage properties?

☐ Yes ☑ No

2.2 Is the proposed action likely to have any direct or indirect impact on the values of any National Heritage places?

☐ Yes ☑ No

2.3 Is the proposed action likely to have any direct or indirect impact on the ecological character of a Ramsar wetland?

☑ Yes ☐ No

Wetland

One declared Ramsar wetland was identified by an EPBC Act Protected Matters Search Tool (Att15 PMST 23 June 2021); the Hunter Estuary Wetlands (ID 24). The Hunter Estuary Wetlands Ramsar site is directly adjacent to Lot 1001 along 300 m of the eastern boundary as shown in Figure 1, 2 and 3. However, a significant buffer (offset) zone has been provided between the development of Lot 1001 and the Ramsar boundary to ensure the wetland is not impacted by the proposed activity. In the north-east corner, as a condition of approval, this is a minimum 380m to the riparian zone and approximately 415m to the edge of the perimeter road of the development. This buffer distance increases to 540m to the riparian zone and 575m to the perimeter road at the southern extent of the common boundary with RAMSAR. At the southern boundaries, the buffer distance between Lot 1001 and Ramsar significantly increases to an approximate range of 1-2km.

Impact

The proposed action will not directly impact the Ramsar wetland. However, the following potential indirect impacts have been considered:

- Altered hydrology, including increased stormwater flows, flood damage to vegetation & alterations to wetting & drying patterns of the wetland;
- Increased freshwater flows to wetlands where tidal exchange is being promoted & potential impact on the re-establishment of coastal saltmarsh & migratory shorebird habitat;
- Increased pollutants & nutrients in stormwater run-off;
- Sedimentation & erosion;
- Acid sulphate soil disturbance;
- Weed invasion.

The environmental assessment was reviewed by the wetland land managers (NPWS) to confirm buffer distances, on-site offsets, strategy, objectives for approval of development adjacent. The potential impacts listed above are either avoided or mitigated, as an outcome of the assessment phase & issuing of the Department of Planning's Project Approval & conditions. Project Conditions include further consultation for with government agencies on the works details, management & plans targeting all potential impacts, interfaces, monitoring & adaptive management controls. It is considered that implementation of appropriate management and/or mitigation measures will adequately protect the wetland from the proposed Action.

The Ramsar wetland is limited to areas inundated by the tidal, saltwater from the river. There are several points of separation between the Action & the wetland, making it highly unlikely for any potential risk of impact on the wetland by the Action.

In its existing state:

- Deep excavated existing drains across Lot 1001, from previous farming activities, with floodgated outlet to the Hunter River, intercept existing surface runoff & shallow groundwater from the large majority of the Action catchment area, draining the site toward the river at low tides (see Att13 Flood Report, Section 2, Page 3, Att14 Stormwater Assessment, Section 2, Page 7; Att21 Wetland Interface Strategy TWRP).
- Modelling of the existing groundwater flow directions depicts groundwater naturally flowing towards the Hunter River, not into the wetland (see Att20 Groundwater Modelling Plot).
- The existing site, in its uncontrolled state, has no direct freshwater discharge onto the wetland inundated by the tidal water.
- The wetland is protected by a boundary perimeter levee & the North South Drain - a very large man-made drain which is deeply incised below ground level of the wetland (see Att20 Groundwater Modelling Plot, Att21 Wetland Interface Strategy

TWRP).

The Project Approval for the proposed development has:

- Involved referral & review by the wetland land managers, including technical 3rd party review by the Department of Planning for the ongoing protection of the wetland & the buffer wetlands closer to the site. The Project Approval with conditions has been issued.
- There is no direct impact on the wetland because the Action is limited to a minimum buffer distance of 380m from the wetland, which increases to a buffer distance of 1-2km across Lot 1002 at the southern boundary (Att01 Figure 2).
- The common boundary of the wetland & site for the Action is approximately 300m long however this is an onsite offset land (buffer conservation area of Lot 1001) to be retained.
- The Action includes a perimeter levee bank for control of stormwater runoff from the development on Lot 1001, conveyed toward the river. In consultation with the wetland land managers, adjustable pit controls are proposed within the perimeter levee (Att21 Wetland Interface Strategy TWRP).
- Modelling of the post development groundwater flow directions remain towards Lot 1002 & the river, not towards the wetland.

Prior to commencement of Construction Activities, Project Approval (see Att06 Project Approval) Conditions require consultation with many government agencies including the wetland land managers:

- Condition 21 Erosion & Sediment Control
- Condition 22 Acid Sulphate Soils Management
- Condition 24 Stormwater Management
- Condition 29 Maintain minimum setback to wetlands
- Condition 30 Wetland Management & Monitoring Plan for each Stage to be prepared in consultation with many government agencies including the wetland land managers;
- Condition 35 Biodiversity Management Plan for the management of the onsite buffer land areas of freshwater wetlands & Swamp Oak Forest between the Action & wetland;

The Project Approval conditions are focused on achieving environmental protection to the Lot 1002 conservation area & SEPP Coastal Wetlands. These areas are proposed to be monitored & tested for potential impacts and changes, at a much closer distance to development. This provides intervention, close to source if required, offering further protection to the wetland.

EPBC Assessment of significance (Att11 MNES Assessments, Page 1) concluded that there is unlikely to be a significant impact on the adjoining Ramsar Wetland.

2.3.2 Do you consider this impact to be significant?

☐ Yes ☑ No

2.4 Is the proposed action likely to have any direct or indirect impact on the members of any listed species or any threatened ecological community, or their habitat?

☑ Yes ☐ No

Species or threatened ecological community

Coastal Swamp Oak Forest of New South Wales and South East Queensland ecological community (listed 20 Match 2018) - known to occur on site.

While a PMST (Protected Matter Search Tool) was undertaken by ecobiological in 2012, a revised PMST was undertaken in June 2021 to account for additional listed MNES (Att15 PMST 23 June 2021). A total of 5 threatened ecological communities, 19 threatened flora species, 50 threatened fauna species and 63 migratory species were identified from the revised PMST search as potentially occurring within 5km of the site. A summary of species identified in the PMST are detailed in the attached (Att10 Likelihood of Occurrence table).

Impact

Coastal Swamp Oak Forest of New South Wales and South East Queensland ecological community

An ecological assessment was undertaken by ecobiological in 2012 (Att07 Ecological Report) as part of the EP&A Act approval process which included extensive field surveys between October 2009 and November 2011 (see Section 2, Page 22-42). Surveys included, but were not limited to, vegetation mapping and flora surveys. No EPBC listed flora species or TECs were identified during the initial surveys.

Following the listing of the Swamp Oak EPBC TEC in 2018, Kleinfelder undertook a site condition assessment to confirm the extent and quality of the TEC (in accordance with EPBC TEC criteria). Subsequently, the extent of the TEC was remapped during a vegetation validation assessment in May 2020 by Kleinfelder. The extent of each vegetation community is illustrated in Att01 Figure 3.

The subject site comprises 15.39 ha of Swamp Oak Forest EPBC TEC (inclusive of 1.33 ha of regenerating TEC). Additionally, the site comprises 4.82 ha of Swamp Oak Forest that does not meet the EPBC TEC criteria. An EPBC Act Assessment of Significance assessment (attached) concluded that the 9.74 ha of the TEC will be directly impacted. This

impact constitutes 62% of this ecological community within the subject site, however, the community is largely considered to be disturbed and fragmented due to adjacent land clearance for agriculture. To compensate for the loss of the Swamp Oak Forest community, an offset package (containing both onsite and off-site offsets) has been developed in consultation with NSW OEH as part of the EP&A Act approval (see Att08 Offset Strategy). Areas within the onsite offset previously contained 3.4 ha of Swamp Oak Forest and 1.1 ha of Swamp Oak Rehab (Att07 Ecological Report, Figure 9, Page 58), however, the extent of individual vegetation communities with the site have changed over time (due to natural ecosystem dynamics, maturation of juvenile trees and establishment of ground cover species) (see Att01 Figure 3). Designated onsite offsets will now retain 6.04 ha of Swamp Oak Forest EPBC TEC. Additionally, rehabilitation of 1.05 ha of exotic grassland to Swamp Oak Forest TEC will occur in the southern part of the site. A 250 ha offset site has been secured offsite. The offset contains similar vegetation to the onsite offset (Paperbark Swamp Forest). NEH has secured the offset via a Conservation Agreement under the NP&W Act 1974 which conserves and manages the offset in perpetuity.

An EPBC Act Assessment of Significance was undertaken for the Swamp Oak EPBC TEC in accordance with EPBC Act MNES Guidelines (Att11 MNES Assessments, Page 4).

The extent of removal is considered relatively minor when compared with the much larger area of this community occurring within 5 km of the subject site (much of which is protected under the Coastal Management SEPP and within national park). Impacts of the removal of the community have been compensated by offsetting the community onsite and offsite at Shark Creek as part of the State approval.

Species or threatened ecological community

Australasian Bittern (Botaurus poiciloptilus)

While a PMST was undertaken by ecobiological in 2012, a revised PMST was undertaken in June 2021 to account for additional listed MNES (Att15 PMST 23 June 2021). A total of 18 threatened flora species, 31 threatened fauna species and 4 threatened ecological communities were identified from the revised PMST search as potentially occurring within 5km of the site. A summary of species identified in the PMST are summarised in the attached (Att10 Likelihood of Occurrence table). Three fauna species were identified as having a moderate to high potential of occurring within the site or are known to occur:

- Australasian Bittern (Endangered)
- Mahony's Toadlet (Endangered)
- Grey-headed Flying-fox (Vulnerable)

Impact

Australasian Bittern

An ecological assessment was undertaken by ecobiological in 2012 as part of the EP&A Act approval process which included extensive field surveys between October 2009 and November 2011. Surveys included, but were not limited to nocturnal spotlighting, call playback, diurnal bird surveys and targeted surveys for the Australasian Bittern.

Australasian Bitterns prefer freshwater swamps comprised of dense vegetation such as reeds and sedges. As such, the Freshwater Wetland Complex within the subject site is considered potential habitat. Preferred vegetation/habitat types recorded in the Hunter estuary are those mapped as Freshwater Wetland and Freshwater Reedland. However, it is noted that the species tends to use the edge of ponds amongst dense vegetation for foraging, and a mosaic of open/dense vegetation and open water is preferred. Potential habitat within the Subject Site consists of areas of dense, tall Typha and Phragmites with limited areas of open shallow water. As such, the site was determined to provide some suitable refuge habitat for the species, while there is marginal habitat for foraging.

Although there have been consistent records of the Australasian Bittern utilising the Hunter estuary, little is known about their local status, including whether or not they are resident, visit the area only occasionally/seasonally or if the species actually breeds here. There are currently no known breeding records for the Hunter estuary (BirdLife Australia). The species was not detected during targeted surveys; however, the species has been detected within Tomago Wetlands previously. Two records occur within Lot 1001 in addition to a number of records from adjacent areas in Lot 1002 and further into Hunter Wetlands NP. The most recent record from Lot 1001 is from the main track through the site on 3/10/17 – recorded opportunistically by a Hunter Bird Observers Club member. If the subject site did constitute part of a home range of the species it is likely to support 1 – 2 individuals or possibly two breeding pairs of bitterns. Removal of up to 48.42 ha of Freshwater Wetland Complex from the subject site is unlikely to lead to a long-term decrease in the size of the local population, given the extent of similar habitat which occurs on the adjoining Lot 1002, and within Hunter Wetlands NP

To compensate for the loss of potential habitat for this species and other waterbirds, an offset package (containing both onsite and off-site offsets) has been developed in consultation with NSW OEH as part of the EP&A Act approval. NEH will retain 10.1 ha of Freshwater Wetland Complex onsite. Note, within the onsite offset, a 1.6 ha portion of Freshwater Wetland Complex (mapped in 2013) is now commensurate with Swamp Oak TEC (vegetation surveys by Kleinfelder - May 2020). Approximately 0.71 ha of exotic grassland with the eastern onsite offset will be rehabilitated to Freshwater Wetland Complex. Additionally, a 250 ha offsite offset has been secured containing similar vegetation to the site including Coastal Freshwater Meadows. NEH has secured the offset via a Conservation Agreement under the NP&W Act 1974 which conserves and

manages the offset in perpetuity (see Att08 Offset Strategy). The Phragmites and Typha reedbeds present in the north-eastern portion of the Freshwater Wetland Complex may provide habitat for the Australasian Bittern. These areas will be retained as the onsite offset area and will include a minimum 380m buffer zone to protect the adjacent Ramsar wetland.

Despite the lack of evidence of breeding within the Hunter, the onsite offset areas and any uncleared Freshwater Wetland Complex areas within the work zone are to be clearly fenced and signposted as a “No Go” area during construction, where the work zone or construction access is within 100m of same.

Mitigation measures in Section 4.1 of this Referral have been put in place to minimise potential impacts to additional threatened flora and fauna which may occur within the subject site. Provided these measures are enforced, indirect impacts to threatened flora and fauna from the proposed action will be minimal.

An EPBC Act Assessment of Significance was undertaken for the Australasian Bittern in accordance with EPBC Act MNES Guidelines (Att11 MNES Assessments, Page 6).

It is unlikely that the Australasian Bittern will be significantly impacted by the proposed activity. This is consistent with commentary contained within the project approval for the adjoining business park (MP07_0086) which found that: no individuals were recorded on site; some opportunistic foraging habitat is available; and, other suitable foraging and breeding habitat is located adjacent to the site (including Lot 1002 and the Hunter Wetlands NP). The Department of Planning was satisfied at the time of NSW approval that the proposed action would have minimal impact on the species.

Species or threatened ecological community

Mahony’s Toadlet (Uperoleia mahonyi) (listed 3 March 2021)

A summary of the species identified in the PMST are detailed in the attached (Att10 Likelihood of Occurrence table). Three fauna species were identified as having a moderate to high potential of occurring within the site:

- Australasian Bittern (Endangered)
- Mahony’s Toadlet (Endangered)
- Grey-headed Flying-fox (Vulnerable)

Impact

Mahony’s Toadlet

An ecological assessment was undertaken by ecobiological in 2012 as part of the EP&A Act approval process (Att07 Ecological Report) which included extensive field surveys between October 2009 and November 2011. Additional surveys were undertaken in May 2020 to validate the habitat condition for threatened species given the time passed since the first assessment. The 2020 assessment revealed that habitat values within the site had not changed significantly during that time. Following the Commonwealth listing of Mahony’s Toadlet on 3 March 2021, potential habitat was inspected to determine habitat suitability for this species. Potential habitat is limited to patches of Swamp Sclerophyll Forest (1.47 ha) within the north-western portion of the subject site. Despite nocturnal surveys and targeted amphibian surveys, the species (nor any other member of the Genus – Uperoleia) was not detected within the subject site. The species is widely distributed throughout the Tomago sandbeds and is generally associated with semi-permanent swamps on white sands. The Swamp Sclerophyll Forest patches onsite are associated with a poorly formed (constructed) drain/swale that appears to hold water following heavy rainfall. During suitable conditions, it is possible that the species could be found in this habitat.

The local population of Mahony’s Toadlet is concentrated within Hunter Water lands and Tilligerry State Conservation Area to the north-east (the nearest record 2km away and mostly >5km away). The subject site is located along the periphery of the local distribution of the species, as forested habitats transition into freshwater wetlands and mangroves forests associated within the Hunter River. As such, the patches of Swamp Sclerophyll Forest within the subject site are unlikely to provide important habitat for the local population. Connectivity is limited between the subject site and locations where the species has been recorded previously. Despite this, individuals may disperse away from high-quality habitat and have the potential to occur within subject site on occasion. In regard to the quality of habitat within the site for breeding, the Swamp Sclerophyll patches lack many mircohabitat features preferred by the species, such as sedges or rushes which the species calls from and attaches their eggs.

The species is highly unlikely to be found in any other habitats or vegetation types within the subject site.

An EPBC Act Assessment of Significance was undertaken for the Mahony’s Toadlet in accordance with EPBC Act MNES Guidelines (Att11 MNES Assessments, Page 9).

Species or threatened ecological community

- Grey-headed Flying-fox (Pteropus poliocephalus)

Impact

Grey-headed Flying-fox

Habitat for the Grey-headed Flying-fox comprises the Swamp Sclerophyll Forest in the north-west of the subject site. The species was detected during surveys foraging among flowering trees; however, no camps/roosts or important populations were detected. The proposed Action will remove a small area of foraging habitat (1.47 ha of Swamp Sclerophyll Forest) for the Grey-headed Flying-fox within the north portion of the subject site. One nationally important Grey-headed Flying-fox camp is known to occur at Carrington Mangroves (Identification number 608) approximately 8kms to the south. Individuals from this population are likely forage, on occasion, within the study site. The extent of foraging habitat to be impacted is considered to be minor. Additional foraging habitat within the locality is available and within the foraging range of the population.

An EPBC Act Assessment of Significance was undertaken for the Grey-headed Flying-fox in accordance with EPBC Act MNES Guidelines (Att11 MNES Assessments, Page 17).

Species or threatened ecological community

Australian Painted Snipe

Three species were assessed as having a low-moderate likelihood of occurrence. Despite this, an impact assessment has also been undertaken.

- Australian Painted Snipe (Endangered)
- Green and Golden Bell Frog (Vulnerable)
- Koala (Vulnerable)

Impact

Australian Painted Snipe

Given the presence of Freshwater Wetland Complex, the site presents potential habitat for the Australian Painted Snipe. Broadly, the species predominately inhabits wetlands or waterbodies that are shallow, brackish or freshwater. More specifically, the species prefers ephemeral wetlands with muddy margins and small, low-lying islands. Suitable wetlands usually support a mosaic of low, patchy vegetation, as well as lignum and canegrass. Potential habitat within the Subject Site consists of areas of dense, tall Typha orientalis and Phragmites australis with very few areas of open shallow water. As such, the site was determined to provide marginal suitability for the species and was determined to have a low likelihood of occurrence. The species was not detected during targeted surveys. Within the locality, there are two records of the Australian Painted Snipe from Kooragang Island (2014, 2004), approximately 2kms from the subject site. Further away, there is one record from Hexham Swamp (2009) and Pambalong Swamp (2006). However, there are only 12 records overall for the species from the Hunter region. The removal of the marginal habitat (Freshwater Wetland Complex) from the Subject Site is unlikely to significantly affect the species due to low suitability of habitats for the species. An EPBC Act Assessment of Significance was undertaken for the Australian Painted Snipe in accordance with EPBC Act MNES Guidelines (Att11 MNES Assessments, Page 12).

Species or threatened ecological community

Green and Golden Bell Frog

Three species were assessed as having a low-moderate likelihood of occurrence. Despite this, an impact assessment has also been undertaken.

- Australian Painted Snipe (Endangered)
- Green and Golden Bell Frog (Vulnerable)
- Koala (Vulnerable)

Impact

Green and Golden Bell Frog

Mostly marginal habitat for the Green and Golden Bell Frog exists across the Subject Site. Apart from a small area of natural drainage line near the northern boundary (associated with the Swamp Sclerophyll patch), areas of Freshwater Wetland Complex generally have no open water, prolific numbers of Gambusia holbrooki, steep banks, few logs or other ground shelter and thick weed cover, making most of the study area unsuitable as breeding, over-winter or foraging habitat. While an important population of the species occurs on Kooragang Island to the south, connectivity is low as individuals would have to travel across the northern arm of the Hunter River (130m width at its narrowest point). Despite this, it is possible that some individuals could make this dispersal distance. Given the marginal suitability of habitats within the subject site and the distance individuals would need to travel to reach the site, the species was assessed as having a low likelihood of occurrence. The species was not detected during targeted surveys and there are no previous records from Tomago or other areas on the northern side of the northern arm of the Hunter River. The removal of the marginal habitat (Freshwater Wetland Complex) from the Subject Site is unlikely to significantly affect the species due to low suitability of habitats for the species. An EPBC

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Act Assessment of Significance was undertaken for the Green and Golden Bell Frog in accordance with EPBC Act MNES Guidelines (Att11, MNES Assessments, Page 15).

Species or threatened ecological community

Koala

Three species were assessed as having a low-moderate likelihood of occurrence. Despite this, an impact assessment has also been undertaken.
- Australian Painted Snipe (Endangered)
- Green and Golden Bell Frog (Vulnerable)
- Koala (Vulnerable)

Impact

Koala

Potential habitat for the Koala is limited to the Swamp Sclerophyll patch in the north of the Subject Site (see Att01 – Figure 3). Two Koala feed trees (Port Stephens Comprehensive Koala Plan of Management) occur within the 1.47 ha area of Swamp Sclerophyll Forest – Swamp Mahogany (Eucalyptus robusta) and Forest Red Gum (Eucalyptus tereticornis). The vegetation community also contains Broad-leaved Paperbark (Melaleuca quinquenervia) which is listed Koala use tree under the SEPP (2021). Forest Oak (Casuarina glauca) is now also be considered to be a Koala use tree under the SEPP 2021, however, the species is less likely to be used as a feed tree. Evidence of Koalas (i.e. tree scratch marks, scats) was not detected during targeted surveys. A Koala habitat assessment in accordance with the EPBC Act referral guidelines for the Vulnerable Koala determined that the site does not contain habitat critical habitat for the survival of the Koala (Att11, MNES Assessments, Page 19). As such, an assessment of significance was not required. Impacts have previously been assessed in accordance with the Port Stephens CKPoM.

2.4.2 Do you consider this impact to be significant?

☐ Yes ☑ No

2.5 Is the proposed action likely to have any direct or indirect impact on the members of any listed migratory species or their habitat?

☑ Yes ☐ No

Migratory species

Common Sandpiper

While a PMST was undertaken by ecobiological in 2012, a revised PMST was undertaken in June 2021 to account for additional listed MNES (Att15 PMST 23 June 2021). A total of 63 migratory species were identified as potentially occurring within 5km of the site.

Of these, 5 migratory species were considered to potentially occur within the subject site (see Att10 Likelihood of Occurrence table, Page 9):
- Common Sandpiper
- Fork-tailed Swift
- Latham's Snipe
- White-throated Needletail
- Pacific Golden Plover

These search results are based on the likelihood of occurrence according to distribution of the species and their habitats. Note that, pelagic species and marine reptiles/mammals/fishes have been excluded from this assessment due to unsuitable habitat within the study area.

Potential habitat exists for the following marine bird species:
- Cattle Egret (detected)
- White-bellied Sea-Eagle (detected)

Impact

Common Sandpiper

A search of various databases and relevant literature revealed that there has been no recording of threatened migratory shorebirds within the study area. The majority of shorebirds feed on intertidal mudflats, the most extensive of which start on the eastern bank of the North Arm of the Hunter River at Fern Bay and extend into Fullerton Cove. Most of the remaining

shoreline of the Hunter River is mangrove-fringed with narrow margins of mud exposed at low tide. These areas are avoided by most waders. Within the study area, potential habitat is restricted to rocky revetment along the Hunter River foreshore adjoining exotic grassland. The occasional mangrove clump is present along the 800 m of river frontage however; there is very limited foraging or roosting habitat for shorebirds.

Records of threatened migratory species such as the Great Knot, Terek Sandpiper, Black-tailed Godwit, Lesser Sand Plover and Australian Pied Oystercatcher are from nearby Kooragang Island, the Kooragang Dykes area and within Fullerton Cove. While the study area contains Freshwater Wetland Complex, this habitat is almost exclusively reedbeds dominated by Typha orientalis and Phragmites australis. No areas of saltmarsh, permanent open water with muddy margins or sandy beach habitat is present within the study area.

The majority of shorebirds feed on intertidal mudflats, the most extensive of which start on the eastern bank of the North Arm of the Hunter River at Fern Bay and extend into Fullerton Cove. Most of the remaining shoreline of the Hunter River is mangrove-fringed with narrow margins of mud exposed at low tide. These areas are avoided by most waders (Straw 1999). This is the case on the study area where rock reinforcements line the river with a few scattered Mangrove trees present, with very little opportunity for shorebirds to forage. It is possible that some shorebirds that like to roost on rocky shorelines might do so in this area from time to time.

No migratory species are expected to be directly impacted by the proposed action. The site does not contain 'important habitat' for shorebirds as defined by the EPBC Act Policy Statement 3.21. However, the proposed action may potentially, indirectly impact marginal foraging habitat of migratory species by:

- Reduction of potential foraging habitat through clearing of vegetation.
- Damage to vegetation from sedimentation, erosion, acid sulphate soil exposure, increased salinity, nutrients and altered hydrology.
- Damage/disruption to individuals by noise, vibration, air pollution during construction.

To compensate for the loss of marginal foraging habitat for migratory species, an offset package (containing both onsite and off-site offsets, as detailed in Section 2.4.1) has been developed (Att08 Offset Strategy). NEH will retain 10.1 ha of Freshwater Wetland Complex in the eastern part of the site. Offsite, a 250 ha site has been secured containing similar vegetation to the site including Coastal Freshwater Meadows. NEH has secured the offset via a Conservation Agreement under the National Parks and Wildlife Act 1974 which conserves and manages the offset in perpetuity.

In addition, avoidance and mitigation measures outlined in Section 4.1 of this Referral (and detailed within Att18 Detailed Mitigation Measures) are conditioned in the Project Approval to minimise any potential impacts to threatened flora and fauna. These have been assessed as adequate to mitigate indirect impacts to threatened flora and fauna from the proposed action.

MNES Assessments of significance for the species is attached (Att11 MNES Assessments, Page 20).

Migratory species

Pacific Golden Plover

While a PMST was undertaken by ecobiological in 2012, a revised PMST was undertaken in June 2021 to account for additional listed MNES (Att15 PMST 23 June 2021). A total of 63 migratory species were identified as potentially occurring within 5km of the site.

Of these, 5 migratory species were considered to potentially occur within the subject site (see Att10 Likelihood of Occurrence table, Page 9):

- Common Sandpiper
- Fork-tailed Swift
- Latham's Snipe
- White-throated Needletail
- Pacific Golden Plover

These search results are based on the likelihood of occurrence according to distribution of the species and their habitats. Note that, pelagic species and marine reptiles/mammals/fishes have been excluded from this assessment due to unsuitable habitat within the study area.

Potential habitat exists for the following marine bird species:

- Cattle Egret (detected)
- White-bellied Sea-Eagle (detected)

Impact

Pacific Golden Plover

A search of various databases and relevant literature revealed that there has been no recording of threatened migratory shorebirds within the study area. The majority of shorebirds feed on intertidal mudflats, the most extensive of which start on the eastern bank of the North Arm of the Hunter River at Fern Bay and extend into Fullerton Cove. Most of the remaining shoreline of the Hunter River is mangrove-fringed with narrow margins of mud exposed at low tide. These areas are avoided by most waders. Within the study area, potential habitat is restricted to rocky revetment along the Hunter River foreshore adjoining exotic grassland. The occasional mangrove clump is present along the 800 m of river frontage however; there is very

limited foraging or roosting habitat for shorebirds.

Records of threatened migratory species such as the Great Knot, Terek Sandpiper, Black-tailed Godwit, Lesser Sand Plover and Australian Pied Oystercatcher are from nearby Kooragang Island, the Kooragang Dykes area and within Fullerton Cove. While the study area contains Freshwater Wetland Complex, this habitat is almost exclusively reedbeds dominated by Typha orientalis and Phragmites australis. No areas of saltmarsh, permanent open water with muddy margins or sandy beach habitat is present within the study area.

MNES Assessments of significance for the species is attached (Att11 MNES Assessments, Page 20).

Migratory species

Latham's Snipe

While a PMST was undertaken by ecobiological in 2012, a revised PMST was undertaken in June 2021 to account for additional listed MNES (Att15 PMST 23 June 2021). A total of 63 migratory species were identified as potentially occurring within 5km of the site.

Of these, 5 migratory species were considered to potentially occur within the subject site (see Att10 Likelihood of Occurrence table, Page 9):

- Common Sandpiper
- Fork-tailed Swift
- Latham's Snipe
- White-throated Needletail
- Pacific Golden Plover

These search results are based on the likelihood of occurrence according to distribution of the species and their habitats. Note that, pelagic species and marine reptiles/mammals/fishes have been excluded from this assessment due to unsuitable habitat within the study area.

Potential habitat exists for the following marine bird species:

- Cattle Egret (detected)
- White-bellied Sea-Eagle (detected)

Impact

Latham's Snipe

The exotic grasslands which can become inundated after prolonged periods of rainfall represent marginal habitat for the Magpie Goose, Australian Painted Snipe, Latham's Snipe, and Black-necked Stork, however, there is no coastal saltmarsh or suitable open freshwater foraging habitat with muddy margins present on the study area for shorebirds. The western boundary of the study area adjoins the Hunter River. Historically, the study area river frontage has been highly modified, with the deposition of large rocks as retaining and revetment and extensive clearing of mangroves (Att24 – Aquatic Impact Assessment). Some isolated mangroves remain among the rock wall retaining the foreshore, however, the mangrove forest characteristics of the foreshores opposite and to the east and west of the study area are largely absent from the study area. There is some clustering of mangroves around the two floodgates draining the Hunter River, however, these are isolated patches and were not considered to constitute Mangrove Forest. The margins of the river in this area are reinforced with rock and there is generally no more than 1–2 m of mud exposed at low tide. Several constructed drainage lines occur on the study area. They are steep sided drains with no bank gradient and are largely dominated by Typha orientalis and Phragmites australis. These drainage lines partially drain the site through flapped outfalls into the North Arm of the Hunter River.

The majority of shorebirds feed on intertidal mudflats, the most extensive of which start on the eastern bank of the North Arm of the Hunter River at Fern Bay and extend into Fullerton Cove.

No migratory species are expected to be directly impacted by the proposed action. However, the proposed action may potentially, indirectly impact marginal foraging habitat of migratory species by:

- Reduction of potential foraging habitat through clearing of vegetation.
- Damage to vegetation from sedimentation, erosion, acid sulphate soil exposure, increased salinity, nutrients and altered hydrology.
- Damage/disruption to individuals by noise, vibration, air pollution during construction.

To compensate for the loss of marginal foraging habitat for migratory species, an offset package (containing both onsite and off-site offsets, as detailed in Section 2.4.1) has been developed (Att08 Offset Strategy). NEH will retain 10.1 ha of Freshwater Wetland Complex in the eastern part of the site. Offsite, a 250 ha site has been secured containing similar vegetation to the site including Coastal Freshwater Meadows. NEH has secured the offset via a Conservation Agreement under the National Parks and Wildlife Act 1974 which conserves and manages the offset in perpetuity.

In addition, avoidance and mitigation measures outlined in Section 4.1 of this Referral (and detailed within Att18 Detailed

Mitigation Measures) are conditioned in the Project Approval to minimise any potential impacts to threatened flora and fauna. These have been assessed as adequate to mitigate indirect impacts to threatened flora and fauna from the proposed action.

MNES Assessments of significance for the species is attached (Att11 MNES Assessments, Page 20).

Migratory species

Fork-tailed Swift

While a PMST was undertaken by ecobiological in 2012, a revised PMST was undertaken in June 2021 to account for additional listed MNES (Att15 PMST 23 June 2021). A total of 63 migratory species were identified as potentially occurring within 5km of the site.

Of these, 5 migratory species were considered to potentially occur within the subject site (see Att10 Likelihood of Occurrence table, Page 9):

- Common Sandpiper
- Fork-tailed Swift
- Latham's Snipe
- White-throated Needletail
- Pacific Golden Plover

These search results are based on the likelihood of occurrence according to distribution of the species and their habitats. Note that, pelagic species and marine reptiles/mammals/fishes have been excluded from this assessment due to unsuitable habitat within the study area.

Potential habitat exists for the following marine bird species:

- Cattle Egret (detected)
- White-bellied Sea-Eagle (detected)

Impact

Fork-tailed Swift

The Fork- tailed swift is found in a wide range of climatic zones and habitats. It breeds in sheltered locations such as caves, natural rock crevices or under the roofs of houses. The Fork-tailed Swift is a non-breeding visitor to all states and territories of Australia. The species breeds in eastern Asia. It is strongly migratory, spending the northern hemisphere's winter in Southeast Asia and Australia. The species forages in high open spaces over varied habitat types. The species mostly occur over dry or open habitats, including riparian woodland and tea-tree swamps, low scrub, heathland or saltmarsh.

The removal of native vegetation is not expected to impact the foraging potential of the Fork-tailed Swift.

No migratory species are expected to be directly impacted by the proposed action. However, the proposed action may potentially, indirectly impact marginal foraging habitat of migratory species by:

- Reduction of potential foraging habitat through clearing of vegetation.
- Damage to vegetation from sedimentation, erosion, acid sulphate soil exposure, increased salinity, nutrients and altered hydrology.
- Damage/disruption to individuals by noise, vibration, air pollution during construction.

To compensate for the loss of marginal foraging habitat for migratory species, an offset package (containing both onsite and off-site offsets, as detailed in Section 2.4.1) has been developed (Att08 Offset Strategy). NEH will retain 10.1 ha of Freshwater Wetland Complex in the eastern part of the site. Offsite, a 250 ha site has been secured containing similar vegetation to the site including Coastal Freshwater Meadows. NEH has secured the offset via a Conservation Agreement under the National Parks and Wildlife Act 1974 which conserves and manages the offset in perpetuity.

In addition, avoidance and mitigation measures outlined in Section 4.1 of this Referral (and detailed within Att18 Detailed Mitigation Measures) are conditioned in the Project Approval to minimise any potential impacts to threatened flora and fauna. These have been assessed as adequate to mitigate indirect impacts to threatened flora and fauna from the proposed action.

MNES Assessments of significance for the species is attached (Att11 MNES Assessments, Page 20).

Migratory species

White-throated Needletail

While a PMST was undertaken by ecobiological in 2012, a revised PMST was undertaken in June 2021 to account for additional listed MNES (Att15 PMST 23 June 2021). A total of 63 migratory species were identified as potentially occurring within 5km of the site.

Of these, 5 migratory species were considered to potentially occur within the subject site (see Att10 Likelihood of Occurrence table, Page 9):

- Common Sandpiper
- Fork-tailed Swift
- Latham's Snipe
- White-throated Needletail
- Pacific Golden Plover

These search results are based on the likelihood of occurrence according to distribution of the species and their habitats. Note that, pelagic species and marine reptiles/mammals/fishes have been excluded from this assessment due to unsuitable habitat within the study area.

Potential habitat exists for the following marine bird species:

- Cattle Egret (detected)
- White-bellied Sea-Eagle (detected)

Impact

White-throated Needletail

The White-throated Needletail is widespread in eastern and south-eastern Australia. The species is a migratory bird, breeding in Central Asia and southern Siberia, and wintering south in the Indian Subcontinent, Southeast Asia and Australia. Most White-throated Needletails spend the non-breeding season in Australasia, mainly in Australia. They do not breeding in Australia.

In Australia, the White-throated Needletail is almost exclusively aerial. Although they occur over most types of habitat, they are probably recorded most often above wooded areas, including open forest and rainforest, and may also fly between trees or in clearings, below the canopy, but they are less commonly recorded flying above woodland

The removal of native vegetation is not expected to impact the foraging potential of the White-throated Needletail.

No migratory species are expected to be directly impacted by the proposed action. However, the proposed action may potentially, indirectly impact marginal foraging habitat of migratory species by:

- Reduction of potential foraging habitat through clearing of vegetation.
- Damage to vegetation from sedimentation, erosion, acid sulphate soil exposure, increased salinity, nutrients and altered hydrology.
- Damage/disruption to individuals by noise, vibration, air pollution during construction.

To compensate for the loss of marginal foraging habitat for migratory species, an offset package (containing both onsite and off-site offsets, as detailed in Section 2.4.1) has been developed (Att08 Offset Strategy). NEH will retain 10.1 ha of Freshwater Wetland Complex in the eastern part of the site. Offsite, a 250 ha site has been secured containing similar vegetation to the site including Coastal Freshwater Meadows. NEH has secured the offset via a Conservation Agreement under the National Parks and Wildlife Act 1974 which conserves and manages the offset in perpetuity.

In addition, avoidance and mitigation measures outlined in Section 4.1 of this Referral (and detailed within Att18 Detailed Mitigation Measures) are conditioned in the Project Approval to minimise any potential impacts to threatened flora and fauna. These have been assessed as adequate to mitigate indirect impacts to threatened flora and fauna from the proposed action.

MNES Assessments of significance for the species is attached (Att11 MNES Assessments, Page 20).

Migratory species

Cattle Egret

While a PMST was undertaken by ecobiological in 2012, a revised PMST was undertaken in June 2021 to account for additional listed MNES (Att15 PMST 23 June 2021). A total of 63 migratory species were identified as potentially occurring within 5km of the site.

Of these, 5 migratory species were considered to potentially occur within the subject site (see Att10 Likelihood of Occurrence table, Page 9):

- Common Sandpiper
- Fork-tailed Swift
- Latham's Snipe
- White-throated Needletail
- Pacific Golden Plover

These search results are based on the likelihood of occurrence according to distribution of the species and their habitats. Note that, pelagic species and marine reptiles/mammals/fishes have been excluded from this assessment due to unsuitable habitat within the study area.

Potential habitat exists for the following marine bird species:

- Cattle Egret (detected)
- White-bellied Sea-Eagle (detected)

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Impact

Cattle Egret

The exotic grasslands which can become inundated after prolonged periods of rainfall providing marginal habitat for the Cattle Egret. The species was detected foraging with the exotic grassland, however, the species in unlikely to rely on the exotic grasslands to

Suitable habitat is present across the pasturelands on the study area for the Cattle Egret, however, very few (<5) birds were observed at any one time during surveys. No nests were observed within the Swamp Oak Forest patches. Considering the large amount of similar habitat in the locality, future development of the study area is unlikely to significantly impact on local populations of this species.

No migratory species are expected to be directly impacted by the proposed action. However, the proposed action may potentially, indirectly impact marginal foraging habitat of migratory species by:

- Reduction of potential foraging habitat through clearing of vegetation.
- Damage to vegetation from sedimentation, erosion, acid sulphate soil exposure, increased salinity, nutrients and altered hydrology.
- Damage/disruption to individuals by noise, vibration, air pollution during construction.

To compensate for the loss of marginal foraging habitat for migratory species, an offset package (containing both onsite and off-site offsets, as detailed in Section 2.4.1) has been developed (Att08 Offset Strategy). NEH will retain 10.1 ha of Freshwater Wetland Complex in the eastern part of the site. Offsite, a 250 ha site has been secured containing similar vegetation to the site including Coastal Freshwater Meadows. NEH has secured the offset via a Conservation Agreement under the National Parks and Wildlife Act 1974 which conserves and manages the offset in perpetuity.

In addition, avoidance and mitigation measures outlined in Section 4.1 of this Referral (and detailed within Att18 Detailed Mitigation Measures) are conditioned in the Project Approval to minimise any potential impacts to threatened flora and fauna. These have been assessed as adequate to mitigate indirect impacts to threatened flora and fauna from the proposed action.

MNES Assessments of significance for the species is attached (Att11 MNES Assessments, Page 20).

Migratory species

White-bellied Sea-Eagle

While a PMST was undertaken by ecobiological in 2012, a revised PMST was undertaken in June 2021 to account for additional listed MNES (Att15 PMST 23 June 2021). A total of 63 migratory species were identified as potentially occurring within 5km of the site.

Of these, 5 migratory species were considered to potentially occur within the subject site (see Att10 Likelihood of Occurrence table, Page 9):

- Common Sandpiper
- Fork-tailed Swift
- Latham's Snipe
- White-throated Needletail
- Pacific Golden Plover

These search results are based on the likelihood of occurrence according to distribution of the species and their habitats. Note that, pelagic species and marine reptiles/mammals/fishes have been excluded from this assessment due to unsuitable habitat within the study area.

Potential habitat exists for the following marine bird species:

- Cattle Egret (detected)
- White-bellied Sea-Eagle (detected)

Impact

White-bellied Sea-Eagle

The White-bellied Sea-Eagle was also observed flying over the Hunter River to the east of the study area; however, no suitable foraging or nesting habitat is present on site. Future development of the study area is unlikely to significantly impact on local populations of this species.

No migratory species are expected to be directly impacted by the proposed action. However, the proposed action may potentially, indirectly impact marginal foraging habitat of migratory species by:

- Reduction of potential foraging habitat through clearing of vegetation.
- Damage to vegetation from sedimentation, erosion, acid sulphate soil exposure, increased salinity, nutrients and altered hydrology.
- Damage/disruption to individuals by noise, vibration, air pollution during construction.

Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

To compensate for the loss of marginal foraging habitat for migratory species, an offset package (containing both onsite and off-site offsets, as detailed in Section 2.4.1) has been developed (Att08 Offset Strategy). NEH will retain 10.1 ha of Freshwater Wetland Complex in the eastern part of the site. Offsite, a 250 ha site has been secured containing similar vegetation to the site including Coastal Freshwater Meadows. NEH has secured the offset via a Conservation Agreement under the National Parks and Wildlife Act 1974 which conserves and manages the offset in perpetuity.

In addition, avoidance and mitigation measures outlined in Section 4.1 of this Referral (and detailed within Att18 Detailed Mitigation Measures) are conditioned in the Project Approval to minimise any potential impacts to threatened flora and fauna. These have been assessed as adequate to mitigate indirect impacts to threatened flora and fauna from the proposed action.
MNES Assessments of significance for the species is attached (Att11 MNES Assessments, Page 20).

2.5.2 Do you consider this impact to be significant?

☐ Yes ☑ No

2.6 Is the proposed action to be undertaken in a marine environment (outside Commonwealth marine areas)?

☐ Yes ☑ No

2.7 Is the proposed action likely to be taken on or near Commonwealth land?

☐ Yes ☑ No

2.8 Is the proposed action taking place in the Great Barrier Reef Marine Park?

☐ Yes ☑ No

2.9 Is the proposed action likely to have any direct or indirect impact on a water resource from coal seam gas or large coal mining development?

☐ Yes ☑ No

2.10 Is the proposed action a nuclear action?

☐ Yes ☑ No

2.11 Is the proposed action to be taken by a Commonwealth agency?

☐ Yes ☑ No

2.12 Is the proposed action to be undertaken in a Commonwealth Heritage place overseas?

☐ Yes ☑ No

2.13 Is the proposed action likely to have any direct or indirect impact on any part of the environment in the Commonwealth marine area?

☐ Yes ☑ No

Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Section 3

Description of the project area

3.1 Describe the flora and fauna relevant to the project area

Flora

Floristic surveys conducted within Lot 1001 by ecobiological (Att07 Ecological Report, Section 3.3, Page 56) identified a total of 111 species, subspecies and varieties. Of the species recorded, 51 were considered exotic and 10 are declared noxious weeds including Crofton Weed (Ageratina adenophora), Lacy Ragweed (Ambrosia tenuifolia), Groundsel Bush (Baccharis halimifolia), Bitou Bush (Chrysanthemoides monilifera subsp. rotundata), Fireweed (Senecio madagascariensis), Castor Oil Plant (Ricinus communis), Camphor Laurel (Cinnamomum camphora), Pampas Grass (Cortaderia selloana), Blackberry (Rubus fruticosus) and Lantana (Lantana camara).

No species recorded are listed as threatened under the NSW Threatened Species Conservation Act 1995 (repealed and replaced with Biodiversity Conservation Act 2016) or the Commonwealth EPBC Act.

Fauna

Terrestrial and aquatic fauna surveys conducted within Lot 1001 by ecobiological (Att07 Ecological Report, Section 3.4, Page 68) and Coast Ecology (Att24 Aquatic Impact Assessment, Section 7, Page 9) identified a total of 84 fauna species. These species comprised 1 fish, 7 frogs, 3 reptiles, 5 terrestrial mammals, 15 bats and 53 birds. Of these, six are exotic species (Plague Minnow, European Rabbit, House Mouse, Red Fox, Common Myna and Black Rat).

Nine threatened species listed as vulnerable under the NSW Threatened Species Conservation Act 1995 (now repealed) (Grey-headed Flying-fox Pteropus poliocephalus, Eastern Grass Owl Tyto longimembris, Southern Myotis Myotis macropus, Eastern Bentwing-bat Miniopterus oceanensis, Little Bentwing-bat Miniopterus australis, Eastern Freetail-bat Mormopterus norfolkensis, Eastern False Pipistrelle Falsistrellus tasmaniensis, Yellow-bellied Sheathtail-bat Saccolaimus flaviventris and Greater Broad-nosed Bat Scoteanax rueppellii) were recorded in the study area. The Grey-headed Flying-fox is also listed as vulnerable under the Commonwealth EPBC Act.

Two migratory marine bird species listed under the Commonwealth EPBC Act were also recorded during field surveys of the study area (Cattle Egret and White-bellied Sea-Eagle).

Refer to Appendix 1 (Page 179) and 2 (Page 184) of Att07 Ecological Report for the full list of flora and fauna species recorded onsite.

3.2 Describe the hydrology relevant to the project area (including water flows)

Hunter River catchment

The Hunter River is the primary river within the Hunter catchment basin; the largest coastal catchment in NSW. Lot 1001 has approximately 800m of river frontage to the Hunter River. Historically, Lot 1001 river frontage has been highly modified, with the deposition of large rocks as retaining and revetment and extensive clearing of mangroves. Some isolated mangroves remain among the rock wall retaining the foreshore of Lot 1001 however the mangrove forests characteristic of the foreshores opposite and to the east and west of Lot 1001 are largely absent from Lot 1001.

The Hunter River itself has been classified as a slightly disturbed ecosystem in accordance with the ANZECC guidelines, based on extensive and long-term water quality monitoring data. The section of the river adjacent to Lot 1001 shows elevated nutrients and sediments.

Wetlands

To the east and south-east of Lot 1001 are wetlands of international and State importance. The Hunter Estuary Wetland is a Ramsar Wetland (ID 24) which forms part of the Hunter Wetland National Park and is located near the eastern boundary of Lot 1001. The wetlands to the east and south of the site are protected under the SEPP (Coastal Management) 2018, some of which extend into the south-east corner of the site.

The wetlands comprise of a mix of freshwater and estuarine wetlands that currently receive surface water and groundwater flows from the Project site. A series of drains and floodgates control water movement through the wetlands, including recently installed gates that allow saltwater inundation from the river. The Hunter Estuary Wetland is separated from Lot 1001 by a ‘north-south drain’, which runs from the industrial development north of Lot 1001 to the Hunter River in the south. Note that a buffer of minimum 380m has been provided to protect the Ramsar boundary from the edge of the development area of Lot 1001 (see Att01 – Figure 1-3).

Stormwater and Drainage

The land is flat, generally grading downslope from Tomago Road to the Hunter River and eastern edge. Site elevations are

consistently 1mAHD, with protection from saltwater, tidal inundation provided by the levee 1.7-1.8mAHD to the riverbank. The land contains several man-made drainage lines which intercept and discharge the majority of stormwater and groundwater from Lot 1001 to the Hunter River via two existing floodgates on the riverbank. The levee bank and associated flood controls are maintained by the Hunter Valley Flood Mitigation Scheme. A much smaller proportion of existing Lot 1001 surface water during larger rainfall events discharges to the adjoining wetlands of Lot 1002 and the North South Drain. See Att14 Stormwater Assessment (Page 41) for additional detail.

Flooding

A Flood Assessment was undertaken by BMT WBM in 2012 (Att13) owing to the low-lying level of the land protected by a levee bank. It was determined via two-dimensional flood modelling analysis, the 1:100-year level, climate change effects and adjoining flood impacts of the fill for development of the site were sufficient for approval with continuing conditions of the Project Approval.

Groundwater

A report presenting the hydrogeological review and numerical groundwater flow modelling was conducted by Environ Australia Pty Ltd in 2012 (see Att20 Groundwater Modelling Plot and Att22 Groundwater Report). Shallow groundwater is present within the sands and clays on Lot 1001 at depths between 0 and 2m below surface. Wells installed across Lot 1001 indicated groundwater flow is predominantly towards the North Arm of the Hunter River (located adjacent to the south-western boundary of Lot 1001). The deeply incised existing drains across the site having significant interception of shallow groundwater (Att22-Figure 9).

Groundwater reportedly discharges to the surface from the shallow sands in the slightly elevated northern sandy strip onto the lower surface of the south-eastern area Att22, Figure 3. Groundwater flow directions were interpreted to be strongly influenced by the existing drains toward the Hunter River. The report indicates that “the proposed development will not impact measurably on the groundwater flow relationship between the site and the wetlands, given that the flow from the project site represents only a small component of the groundwater recharge within the wetlands” (Att22, page 29).

3.3 Describe the soil and vegetation characteristics relevant to the project area

Geology

Regional Geology Reference to the 1:250,000 Newcastle Geology map indicates that Lot 1001 is underlain by Quaternary alluvium “Qa”, which typically comprises gravel, sand, silt and clay. The underlying bedrock comprises siltstone, sandstone and coal of the Permian aged Tomago Coal Measures “PC”.

Acid Sulphate Soil

The NSW Department of Land and Water Conservations 1:25,000 scale “Acid Sulphate Soil Risk Map for Beresfield (Ref 9232N3)” indicates that Lot 1001 lies in an area of high risk (alluvial plains) for the majority of Lot 1001 and low risk in the north west over the sands.

Specifically:

- Low risk area - the northern part of Lot 1001, comprising a strip alongside Tomago Road of 120 m to 200 m width, lies in an area designated Wa4(p). This indicates an alluvial sandplain of Pleistocene age and an elevation exceeding 4 m. This zone has a low probability of acid sulphate soils at a depth or more than 3 m below ground surface.
- High risk area -The remainder of Lot 1001 lies within an area designated Ap2. This indicates an alluvial floodplain with an elevation between 2 m and 4 m. This area has a high probability of acid sulphate soil conditions occurring between 1 m and 3 m below the ground surface. It is noted that the elevation of Lot 1001 is lower than the ranges indicated on the Acid Sulphate Risk map and is generally less than 1 m over a large portion of Lot 1001, rising to around 2 m to 3 m in the vicinity of Tomago Road.

Acid sulphate screening tests have been conducted onsite by Douglas Partners (2011) confirming that potential acid sulphate soils are present within Lot 1001 and an Acid Sulphate Soil Management Plan will be required for the project (refer Att12 Acid Sulphate Soil Management Plan).

Contamination

Investigations have shown that Lot 1001 is not the subject of any significant contamination. Douglas Partners (2012) carried out a detailed Contamination Assessment (Att09 Contamination Assessment, Section 11, Page 60) for Lot 1001 and concluded the following:

- No indicators of widespread gross contamination were identified at Lot 1001;

- Testing undertaken indicates some impact to groundwater and surface water that is considered to be mainly due to off-site industrial activities along Tomago Road;

- Comparison of upstream and downstream samples from the Hunter River adjacent to Lot 1001 indicate similar results, implying that the subject site is causing little or no off-site impact;

- Localised remediation of soils will be required to address the localised presence of hydrocarbon and asbestos contamination. This should include the removal of remnant effluent disposal systems and remnant building structures (i.e. tanks, slabs and footings). These activities can be readily undertaken in conjunction with construction activities, subject to a Remediation Action Plan (RAP) that would set out remediation procedures and clean-up criteria.

It was concluded that Lot 1001 is suitable for the proposed industrial development, subject to localised remediation (to be detailed in a RAP), and suitable management of surface water and groundwater.

Vegetation

The vegetation within Lot 1001 is predominantly managed pasture grass with minor vegetation communities and wetland areas.

The vegetation within Lot 1001 has been classified into nine vegetation categories and areas of cleared land following an ecological assessment undertaken by ecobiological (2012) (Att07 Ecological Report, Section 3.3, Page 56) and a revised assessment in May 2020 (Att01 Figure 3):

- Cleared Land
- Exotic Grasslands
- Constructed Freshwater Wetland Complex
- Regenerating Freshwater Wetland Complex
- Freshwater Wetland Complex
- Regenerating Swamp Oak Forest (EPBC TEC)
- Swamp Oak Forest (does not meet EPBC TEC criteria)
- Swamp Oak Forest (EPBC TEC)
- Swamp Sclerophyll Forest

These are discussed further in Section 3.5 of this Referral.

3.4 Describe any outstanding natural features and/or any other important or unique values relevant to the project area

Wetlands

A series of wetlands of State and International importance are located adjacent to Lot 1001. These include, Hunter Wetland Estuary, a Ramsar wetland, located on the eastern boundary of Lot 1001 and wetlands of importance (listed under SEPP (Coastal Management) 2018) located to the south, east and west of Lot 1001 (see Att01 Figure 1-2).

Internationally important numbers of migratory shorebirds using Hunter Wetlands National Park led to its listing as a Ramsar site in 1984. The Hunter Estuary Wetlands Ramsar site comprises Kooragang Nature Reserve (designated to the Ramsar list in 1984) and Shortland Wetlands, now called the Wetlands Centre Australia. The two areas are about 2.5 km apart and are connected by a wildlife corridor consisting of Ironbark Creek, the Hunter River and Ash Island (DECCW, 2008b). The Hunter Estuary Wetlands Ramsar site is widely recognised for its importance in the conservation of migratory birds. At least 38 species of migratory birds recorded at Kooragang NR and 21 species of migratory birds at Shortland Wetlands are presently listed under international treaties including the Japan-Australia and China-Australia Migratory Bird Agreements (JAMBA and CAMBA) (DECCW, 2008).

Lot 1001 itself contains three wetland communities including 58.51 ha of Freshwater Wetland Complex, 27.10 ha of Regenerating Freshwater Wetland Complex and 5.88 ha of Constructed Freshwater Wetland Complex (according to revised vegetation community mapping conducted by Kleinfelder in May 2020). The site also contains 14.06 ha of Swamp Oak Forest EPBC TEC and 1.33 ha of Regenerating Swamp Oak Forest EPBC TEC (also listed under SEPP (Coastal Management) 2018) (Att01 Figure 3).

3.5 Describe the status of native vegetation relevant to the project area

Field surveys from ecobiological (2012) (Att07 Ecological Report, Section 3.3, Page 56) and a vegetation community validation assessment in May 2020, revealed that the site supports the following vegetation communities (see Att01 Figure 3):

Cleared: 2.33 ha
Constructed Freshwater Wetland Complex: 5.88 ha
Exotic Grasslands: 105.91 ha
Freshwater Wetland Complex: 58.5 ha

Regenerating Freshwater Wetland Complex: 27.10 ha
Regenerating Swamp Oak Forest (EPBC TEC): 1.33 ha
Swamp Oak Forest (Does not meet TEC Criteria): 4.82 ha
Swamp Oak Forest (EPBC TEC): 14.06 ha
Swamp Sclerophyll Forest: 1.47 ha
Exotic Grasslands (to be rehabilitated to Swamp Oak Forest): 1.05 ha
Exotic Grasslands (to be rehabilitated to Freshwater Wetland Complex): 0.71 ha

Approximately 205.54 ha of vegetation will be cleared as part of the proposed activity.
Approximately 17.62 ha of vegetation will be retained and/or rehabilitated within onsite offset areas.
Offset provides a minimum 380 m buffer between the development site and common boundary with Hunter Estuary Ramsar Wetland in the eastern part of the site.
Eastern onsite offset (13.1 ha):

- 10.9 ha of Freshwater Wetland Complex
- 2.41 ha Swamp Oak Forest (EPBC TEC)
- 0.22 ha Regenerating Swamp Oak Forest (EPBC TEC)
- 0.13 ha Swamp Oak Forest (does not meet EPBC TEC criteria)
- Rehabilitation of 0.71 ha of exotic grassland to Freshwater wetland complex

Southern onsite offset (4.5 ha):

- 2.41 ha Swamp Oak Forest (EPBC TEC)
- Rehabilitation of 1.05 ha of exotic grassland to Swamp Oak Forest (within 4.5ha southern offset)

Full vegetation descriptions are provided in the Ecological Assessment Report (Att07, Section 3.3, Page 56) prepared as part of the NSW EP&A Act project application.

3.6 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the project area

Lot 1001 is a flat, low-lying area, generally grading from Tomago Road (RLs of 5 to 6 mAHD) down towards the river at elevations of less than 1mAHD. Elevations within Lot 1001 are consistently 1mAHD, with protection provided by the levee 1.7-1.8mAHD to the riverbank.

3.7 Describe the current condition of the environment relevant to the project area

Lot 1001 is of flat topography, low lying and subject to flooding. It is mostly cleared land covered in pasture grasses from the previous land uses of livestock grazing, dairy and turf farming.

A number of man-made drainage channels spread across Lot 1001 and drain towards the Hunter River. The existing drains are deeply incised and converge to two (2) drains, both with floodgated outlets into the Hunter River. Drainage from the site operates at low tide through both floodgated outlets. A levee bank, constructed as part of the Hunter River Flood Mitigation Scheme provides a substantial level of flood immunity from Hunter River floodwaters.

The elevated nature of the levee bank, the undeveloped nature of the land and the flat topography all contribute to a landscape of shallow ponding from rainfall and runoff from upstream catchments. There is vertical stratification of the vegetation across the site, with observed vegetation changes for less than 200mm change in ground elevation in places. The vegetation at the higher elevations is predominantly pasture grasses and at the lowest elevations the vegetation is freshwater wetland species see Att01 – Figure 3. Ponding is shallow, before runoff conveyance to the existing drains and ultimately the Hunter River.

The pasture is dominated by exotic grasses such as Kikuyu (Pennisetum clandestinum) and Paspalum (Paspalum dilatatum) and the low-lying wetlands are dominated by Broadleaf Cumbungi (Typha orientalis) and Common Reed (Phragmites australis). The freshwater wetland areas are primarily located centrally within the northern section of the land and at the eastern end of Lot 1001 adjacent to the Hunter Estuary Ramsar Wetland on adjoining land. Areas of Swamp Oak Forest are located at the north-east and southern sections of Lot 1001 and smaller pockets of Swamp Oak Forest regeneration are located towards the north and east of Lot 1001. A small area of Swamp Mahogany - Paperbark Swamp Forest is located at the north-western corner of Lot 1001.

Recent site inspections (June 2020) were undertaken to validate vegetation communities their extent and vegetation condition within the site. Almost all areas are consistent with the ecological investigation undertaken in 2012. Small adjustments to vegetation communities were made and have been updated (see Att01 – Figure 3). Some areas of the Swamp Oak in the south of the site have recently experienced temporary inundation of brackish water as a result of a floodgate failure. As a result, some trees showed signs of stress, however, following rectification of the floodgate failure, tree health improvement is evident through regeneration of new foliage (epicormic shoots).

The study area supports three natural vegetation communities, two regenerating natural vegetation community, one artificial wetland community and one highly disturbed grassland community dominated by exotic species.

Annual Monitoring

As part of the adjacent industrial estate to the north, MP07_0086, annual compliance monitoring has been undertaken within Lot 22, the 22 ha Conservation Area that was dedicated by NEH under MP07_0086. The Conservation Area is directly

adjacent to the north-eastern boundary of Lot 1001.

Kleinfelder has undertaken annual wetland monitoring of Lot 22 south of the Industrial Estate in accordance with the Wetland Management and Monitoring Plan (WMMP). Kleinfelder (formerly ecobiological) prepared the WMMP (2009) specifically related to the approved development site and adjoining wetland area on Lot 22 DP 1150980, Tomago Road, Tomago, in the Port Stephens LGA. The area has been monitored annually from 2009 to 2021 (see Att17 Annual NEH Wetland Monitoring 2021). Minor variation in the vegetation communities in the Conservation Area have been observed over the last eight years that have been on a consistent trajectory due to a number of environmental factors with no adverse impacts from the development observed to date. No major management actions relating to these changes have been recommended, apart from regular weed control. No substantial variation in the extent of the vegetation communities within the conservation area has been observed resulting from development. Monitoring recommendations relate to controlling weed spread within the conservation area to be addressed by National Parks, managers of Lot 22. Many of these reports have been submitted by NEH to DAWE since 2010, under EPBC 2007/3343 although wetland monitoring was not part of the EPBC approval. These results demonstrate that the condition of wetland communities within the area have remained relatively stable over the past decade, likely owing to the managed hydrology and lack of disturbance.

3.8 Describe any Commonwealth Heritage places or other places recognised as having heritage values relevant to the project

A Heritage Assessment and Statement of Heritage Impact has been prepared by Austral Archaeology (2011) (see Att16 Historical Arch Report) to accompany the project application under the EP&A Act. The assessment (Section 6, Page 50) identified places of State and local heritage significance within and adjacent to Lot 1001 including:

Significant Heritage Items Located Adjacent to Lot 1001:

- Tomago House and Tomago Chapel which are State significant listed on the State Heritage Register (NSW Heritage Act, 1977).
- Tomago House and its Landscape Setting are listed as having State significance under the Port Stephens Local Environmental Plan 2000.
- Tomago House including Grounds and Trees and Chapel classified by National Trust of Australia.

In consultation and assessment for approval this is managed by the Project Approval conditions with a curtilage and landscaping.

Significant Heritage Items Located within Lot 1001:

- Four (4) former WWII anti-aircraft gun emplacements, an underground command post and three (3) ammunition bunkers.

In the assessment for approval, this was managed by the Project Approval conditions which require recording of lesser items and retaining the more significant features in a park area.

A revised EPBC Act PMST search in June 2021 (Att15 – PMST 23 June 2021) confirmed there are no Commonwealth Heritage places within 5 km of Lot 1001 (DAWE, 2021).

3.9 Describe any Indigenous heritage values relevant to the project area

As part of the project application under the EP&A Act, an Aboriginal Cultural Heritage Management Plan was prepared by McCardle Cultural Heritage (2018) (see Att04 Cond 37 ACHMP approval and Att25 ACHMP) and identified places of indigenous heritage values within and adjacent to Lot 1001 including:

Indigenous Heritage values in proximity to site:

- Seventy known sites were identified on the Aboriginal Heritage Information Management System (AHIMS) database within an 8km radius of Lot 1001 with the most predominant being shell middens followed by artefacts, scarred trees, earth mounds, resource and gathering, ceremonial and burials. All of these sites are located along both the Holocene and Pleistocene dunes that overlook the interbarrier depression.

Indigenous Heritage values within Lot 1001:

- Two sites (both shell middens) and a potential archaeological deposit (PAD) were identified in the northern corner of Lot 1001 within a low-lying dune (located at the interface of the interbarrier depression and the Inner Pleistocene dunes, also known as the interbarrier depression). The location of the sites and PAD is consistent with predictive modelling and the archaeology of both the local and regional areas.

The ACHMP (Att25 – ACHMP, Section 5, Page 12) details protocol for managing any indigenous heritage values encountered within Lot 1001.

3.10 Describe the tenure of the action area (e.g. freehold, leasehold) relevant to the project area

The site is freehold land, owned by Northbank Enterprise Hub Pty Ltd (NEH). As lots are to be leased, they will be

operated under a lease agreement with NEH.

3.11 Describe any existing or any proposed uses relevant to the project area

The proposed use for Lot 1001 is that which is the subject of this Referral – an industrial subdivision to be known as Northbank Enterprise Hub. No additional uses are currently proposed for Lot 1001.

The previous land uses of dairy farming and turf farming as pastoral activities were the primary land use for many decades up until the 1980's (see Att16 Historical Arch Report). These pastoral uses all closed in the 1980's due to increasing smelter fallout levels from adjacent industry. From that point onwards, the site was viewed by state government as suitable for industrial purposes commencing with the proposed Austeel steelworks project in 2001. Whilst the Austeel project didn't proceed, the site progressed in terms of industrial land purposes. The land was rezoned to industrial and the status upgraded to state significant employment land prior to the approved Northbank Enterprise Hub

Four single dwellings and associated sheds were previously located towards the northern boundary of Lot 1001 however these were demolished prior to the EP&A Act project application in 2012 with Lot 1001 currently clear of any significant building structures.

The site is not currently used for any purpose apart from the approved industrial subdivision.

Recent site inspections (June 2020) were undertaken to validate vegetation communities their extent and condition within the site. Most areas are largely consistent with the ecological investigation undertaken in 2012. Some small adjustments to vegetation communities were made and have been updated (see Att01 – Figure 3).

Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Section 4

Measures to avoid or reduce impacts

4.1 Describe the measures you will undertake to avoid or reduce impact from your proposed action

Conditions of the Project Approval (see Att06 Project Approval, Schedule 3, Page 6) require further plan approvals prior to commencement of the Construction Activities of the Action to be prepared in consultation with many government agencies (see also Att19 Revised Statement of Commitments) including NPWS, the RAMSAR wetland land managers:

- Schedule 3, Condition 21 – Erosion and Sediment Control
- Schedule 3, Condition 22 – Acid Sulphate Soils Management
- Schedule 3, Condition 24 – Stormwater Management,
- Schedule 3, Condition 29 – maintain minimum setback to wetlands,
- Schedule 3, Condition 30 Wetland Management and Monitoring Plan for each Stage to be prepared in consultation with many government agencies including the wetland land managers,
- Schedule 3 Condition 35 Biodiversity Management Plan, including Noxious Weed Management Plan for the onsite buffer land areas of freshwater wetlands and Swamp Oak Forest between the action and wetland.
- The Project Approval conditions are focused on achieving environmental protection to the Lot 1002 conservation area and SEPP 2018 Coastal Wetlands. These areas are within the buffer, closer to the Action than the RAMSAR wetlands. These areas are proposed to be monitored and tested for potential impacts and changes, at a much closer distance to development. This provides intervention of any issues arising close to the source, offering further protection to the wetland.

Compensatory (Environmental Offset) Strategy: An offset package (containing both onsite and off-site offsets) has been developed in consultation with OEH (Att08_Offset Strategy). NEH has incorporated two onsite offset areas into the site design layout which, during the preparation of the Offset Strategy. In 2013, onsite offsets contained 12.5 ha of Freshwater Wetland Complex, 3.4 ha of Swamp Oak Forest and 1.76 ha of exotic grassland (of which 1.05 ha is to rehabilitated as Swamp Oak Forest TEC and 0.71 ha is to rehabilitated as Freshwater Wetland Complex). While the boundaries of these onsite offset areas has not changed, some vegetation communities have expanded into others (validated by Kleinfelder in May 2020) (see Att01 – Figure 3), such that the onsite offsets now comprise 10.08 of Freshwater Wetland Complex, 5.43 ha of Swamp Oak Forest (EPBC TEC), 0.13 ha Swamp Oak Forest (does not meet EPBC TEC criteria) and 1.76 of exotic grassland (to be rehabilitated as Swamp Oak Forest TEC and Freshwater Wetland Complex). The eastern onsite offset provides a minimum 380m buffer to the adjoining Ramsar wetland. Offsite, NEH subsequently identified a 250.8 ha parcel of land in Northern NSW with similar vegetation types for the purposes of a biodiversity offset (see Att23_Shark Creek Conservation Agreement). The Shark Creek offset site contains similar vegetation communities to those found at the Project site. In total it supports five vegetation communities, four of which are TEC's (including Freshwater Wetland Complex and Swamp Oak Forest).

To avoid disturbance to Australasian Bittern in adjacent wetlands (known habitat), it is recommended that the on-site offset areas and any uncleared Freshwater Wetland Complex areas within the work zone are to be clearly fenced and signposted as a "No Go" area during construction, where the work zone or construction access is within 100m of same.

NEH is also committed to the installation of 15 nest boxes for insectivorous bats in areas of retained Swamp Oak Forest.

Preclearance surveys will be conducted to identify and relocated any fauna prior to clearing. Habitat tree felling will also be supervised by a qualified ecologist.

Aquatic habitats: various measures are to be implemented to maintain surface water connections, fish connectivity, avoidance of mangroves and contractor awareness of ecological values within the site and adjacent land.

Noise and Vibration: A Construction Noise Management Plan (CNMP) will be prepared to manage noise emissions. The plan details daily constructions time frames and construction noise management values (50db) where noise management/minimisation practices are required.

Dust Control: includes, load covering, amending operations during high winds, water tank dust suppression, revegetation of unsealed areas, truck wash down practices

Additional mitigation measures: In addition to the proposed mitigation measures proposed by NEH, the NSW Department of Planning has issued Project Conditions as part of the Project Approval under Section 75J of the Environmental Planning and Assessment Act 1979. NEH Is required to adhere to these measures as part of their project approval obligations.

Further detail on all mitigation measures to be implemented (particularly management plans and strategies) is attached (Att18 Detailed Mitigation Measures and Att19 Revised Statement of Commitments).

Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

4.2 For matters protected by the EPBC Act that may be affected by the proposed action, describe the proposed environmental outcomes to be achieved

Wetlands of International Importance

No direct impacts on Hunter Estuary Wetlands as a result of the proposed action due to significant buffer distances between development and the wetland.

Confirmed drainage directions for stormwater controlled, away from the Wetlands and to be further detailed in consultation with the wetland land managers.

Implement Mitigation Measures in Section 4.1 of this Referral, in particular Wetland Interface Strategy and Stormwater Management System (see Att21 Wetland Interface Strategy TWRP). Monitoring and reporting in accordance with:

- Wetland Management and Monitoring Plan
- Water Quality Monitoring Program
- Environmental Incidents Register
- Consider adjustment of stormwater controls, adaptive management.

Minimise indirect impacts on Hunter Estuary Wetlands as a result of the proposed action: Implement Mitigation Measures in Section 4.1 of this Referral (further detailed in Att18 Detailed Mitigation Measures, Page 1-5). Monitoring and reporting accordance with:

- Wetland Management and Monitoring Plan
- Water Quality Monitoring Program

Listed Threatened Species and Communities / Migratory Species

Limited direct impacts to threatened species or migratory species habitat as a result of the proposed action: Implement Mitigation Measures in Section 4.1 of this Referral. Environmental Incidents Register.

Minimise indirect impacts to threatened species and migratory species as a result of the proposed action: Implement Mitigation Measures in Section 4.1 of this Referral. Monitoring and reporting in accordance with:

- Wetland Management and Monitoring Plan
- Water Quality Monitoring Program
- Environmental Incidents Register

Minimise impacts to Coastal Swamp Oak Forest / Minimise potential fauna/migratory species habitat removal onsite as a result of the proposed action: Implement Compensatory (Environmental Offset) Strategy (Att08 Offset Strategy) in Section 4.1 of this Referral which includes onsite and offsite offset areas. Includes rehabilitation of 1.76 ha of Swamp Oak Forest. Implement Mitigation Measures in Section 4.1 of this Referral. Monitoring and reporting in accordance with

- Conservation Agreement.
- Wetland Management and Monitoring Plan
- Water Quality Monitoring Program

Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Section 5

Conclusion on the likelihood of significant impacts

5.1 You indicated the below ticked items to be of significant impact and therefore you consider the action to be a controlled action

- ☐ World Heritage properties
- ☐ National Heritage places
- ☐ Wetlands of international importance (declared Ramsar wetlands)
- ☐ Listed threatened species or any threatened ecological community
- ☐ Listed migratory species
- ☐ Marine environment outside Commonwealth marine areas
- ☐ Protection of the environment from actions involving Commonwealth land
- ☐ Great Barrier Reef Marine Park
- ☐ A water resource, in relation to coal seam gas development and large coal mining development
- ☐ Protection of the environment from nuclear actions
- ☐ Protection of the environment from Commonwealth actions
- ☐ Commonwealth Heritage places overseas
- ☐ Commonwealth marine areas

5.2 If no significant matters are identified, provide the key reasons why you think the proposed action is not likely to have a significant impact on a matter protected under the EPBC Act and therefore not a controlled action

A comprehensive environmental assessment of the project was previously undertaken by the NSW Department of Planning and Environment and the wetland land managers. Project Approval with conditions was granted in 2014 (see Att06_Project Approval). The conditions require further consultation with the wetland land managers on the details for development. Detailed environmental assessments were undertaken by the proponent to assess whether the proposed action would impact any MNES. These include:

- Stormwater Assessment (BMT WBM 2012a) (Att14 Stormwater Assessment)
- Regional Flooding Assessment (BMT WBM 2012b) (Att13 Flood Report)
- Groundwater Modelling Assessment (Environ Australia 2012) (Att22 Groundwater Report)
- Contamination Assessment (Douglas Partners 2011) (Att09 Contamination Report)
- Ecological Assessment (ecobiological 2012) (Att07 Ecological Report)
- Aquatic Impact Assessment (Coast Ecology 2012) (Att24 Aquatic Impact Assessment)
- EPBC Act Significant Impact Assessment (Kleinfelder, 2021) (Att11 MNES Assessments).

Given the surrounding land use and low level of expected impact on the surrounding environment and MNES, it is proposed that the Northbank Enterprise Hub is not a controlled action. The Proposal is consistent with current industrial land uses in Tomago and would not impact on the cultural, aesthetic or environmental values of any places listed on the National Heritage Register.

In considering significant impact criteria outlined in the EPBC Act Policy Statement 1.1: Significant Impact Guidelines Matters of National Environmental Significance (Commonwealth of Australia, 2013) for other matters protected under the EPBC Act (see Att11 MNES Assessments), it is concluded that the Project would not have a significant impact on any other matter of national environmental significance because:

- There are no World Heritage areas in the vicinity of the project area.
- The Project would not reduce the environmental importance or quality of the Ramsar listed wetlands.
- There are no Nuclear Actions associated with the Project.
- The proposed project area is not located near any Commonwealth marine areas.
- The proposed project area would remove less than 10 ha of 'Coastal Swamp Oak (Casuarina glauca) Forest of South-east Queensland and New South Wales' EPBC TEC, which are fragmented into several small patches and are not considered important for the long-term survival of the TEC in the locality (given much larger, connected expanses of this community extending off the site into the Hunter Wetlands National Park);
- The proposed project area would avoid removal of any threatened flora species;
- The removal of potential habitat for threatened fauna and migratory species' (particularly Freshwater Wetland Complex for the Australasian Bittern) is not expected to significantly impact on threatened or migratory fauna populations in the locality or wider region.

To compensate for the loss of potential foraging habitat for threatened fauna and migratory species, an offset package (containing both onsite and offsite offsets) was developed in consultation with NSW OEH as part of the EP&A Act approval (Att08_Offset Strategy). NEH will retain a 10.08 ha portion of Freshwater Wetland Complex and 5.78 ha of Swamp Oak Forest and rehabilitate 1.76 ha of Swamp Oak Forest TEC (currently mapped as exotic grassland). Offsite, a 250 ha site has been

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secured containing similar vegetation to the site including Freshwater Wetland Complex and Swamp Oak Forest. NEH has secured the offset via a Conservation Agreement under the National Parks and Wildlife Act 1974 which conserves and manages the offset in perpetuity.

In addition, mitigation measures outlined in Section 4 of this Referral (and in Att18 Detailed Mitigation Measures) have been put in place which include adaptive management measures to minimise any potential impacts to threatened flora and fauna. These have been previously assessed (at the State level) as adequate to mitigate indirect impacts to threatened flora and fauna from the proposed action.

Therefore, the proposed action is unlikely to have significant adverse impacts on matters protected under the EPBC Act.

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Section 6

Environmental record of the person proposing to take the action

6.1 Does the person taking the action have a satisfactory record of responsible environmental management? Explain in further detail

Yes, NEH has a satisfactory record of responsible environmental management. NEH regards sound environmental management and protection as an integral part of its business and of playing its part in the community. NEH is committed to undertaking its development in line with industry best practice environmental management process. Furthermore, NEH has been operating the WesTrac site adjacent to the north of the proposed action, for many years, with no impacts to the adjacent wetland and no non-conformances on EPBC 2007/3343.

6.2 Provide details of any past or present proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against either (a) the person proposing to take the action or, (b) if a permit has been applied for in relation to the action – the person making the application

There are no past or present proceedings against either the person proposing the action or the person making the application.

6.3 If it is a corporation undertaking the action will the action be taken in accordance with the corporation's environmental policy and framework?

☑ Yes ☐ No

6.3.1 If the person taking the action is a corporation, provide details of the corporation's environmental policy and planning framework

Northbank Enterprise Hub do not currently have an environmental policy and planning framework, however, NEH is committed to undertaking its development in line with industry best practice environmental management process.

6.4 Has the person taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act?

☑ Yes ☐ No

6.4.1 EPBC Act No and/or Name of Proposal

Yes

A previous EPBC Referral was submitted on 29/09/2010 (Ref EPBC 2010/5660) for the proposed action, with the decision that the project was a controlled action requiring further assessment and approval under the EPBC Act before it could proceed. However, the proposal was withdrawn on 24 October 2012 owing to changes of the proposed action, reducing potential impacts. NEH undertook rigorous environmental assessment and in consultation with authorities for state government approval, the outcome was a decreased development extent of a significantly increased onsite buffer between (offset) the proposed for development and RAMSAR wetland.

The development footprint and design were subsequently altered to minimise environmental impacts (in particular the addition of the eastern buffer zone/onsite offset, and mitigation/management measures to ensure potential indirect impacts are avoided or minimised, particularly those to Commonwealth MNES. The revised footprint is contained in Att01 Figure 2 and the mitigation measures to reduce impacts to MNES are outlined in Section 4.1 of this Referral.

In addition, the proponent (NEH was formerly known as WEPL Investments Pty Ltd) has previously submitted and received approval for a Major Project adjacent to Lot 1001 (known as the Tomago Road Industrial Development, Tomago NSW). NEH holds the existing EPBC Approval (EPBC 2007/3343) granted 15 January 2010 for this industrial development and a portion of Lot 1001 currently undeveloped. NEH has submitted annual reporting since 2010, having an exemplary environmental record.

Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Section 7

Information sources

Reference source

Department of the Agriculture, Water and the Environment (2020). Species Profile and Threats Database.

Reliability

High – information is reliable and current

Uncertainties

-

Reference source

Department of Planning, Industry and Environment (2021). Threatened biodiversity profiles and database records

Reliability

High – information is reliable and current

Uncertainties

-

Reference source

ADW Johnson (2010a). Preliminary Environmental Assessment, Northbank Enterprise Hub Industrial & Business Park, Lot 1001 DP 1127780 Tomago Road, Tomago. Prepared for WEPL Investments Pty Ltd, September 2010.

Reliability

High – information is reliable

Uncertainties

-

Reference source

ADW Johnson (2010b). Northbank Enterprise Hub – Tomago, NSW: EPBC Act 1999 Referral of Proposed Action. Report prepared for Northbank Enterprise Hub Pty Ltd.

Reliability

High – information is reliable

Uncertainties

-

Reference source

Spectrum Acoustics (2012). Noise Impact Assessment: Northbank Enterprise Hub, Tomago NSW. Prepared for ADW Johnson Pty Ltd on behalf of Northbank Enterprise Hub Pty Ltd, July 2012.

Reliability

High – information is reliable

Uncertainties

-

Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Reference source

Department of Planning and Environment (2014) Secretary's Environmental Assessment Report for Northbank Enterprise Hub Business and Industrial Park

Reliability

High – information is reliable

Uncertainties

-

Reference source

Birdlife Australia (2018) Hunter Estuary Australasian Bittern Study.

Reliability

High – information is reliable and current

Uncertainties

-

Reference source

Clulow S, Anstis M, Keogh JS, Catullo RA (2016) A new species of Australian frog (Myobatrachidae: Uperoleia) from the New South Wales mid-north coast sandplains. Zootaxa, 4184, 285-315.

Reliability

High – information is reliable and current

Uncertainties

-

Reference source

Department of Agriculture, Water and Environment (2018) Conservation advice (incorporating listing advice) for the Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South EastQueensland ecological community

Reliability

High – information is reliable and current

Uncertainties

-

Reference source

Department of the Environment (2014) EPBC Act referral guidelines for the vulnerable koala

Reliability

High – information is reliable and current

Uncertainties

-

Reference source

Department of the Environment, Water, Heritage and the Arts (2013) Significant Impact Guidelines 1.1 - Matters of National Environmental Significance

Reliability

High – information is reliable and current

Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Uncertainties

-

Reference source

Port Stephens Council (2002) Comprehensive Koala Plan of Management

Reliability

High – information is reliable and current

Uncertainties

-

Reference source

Straw, P. (1999). Hunter River Estuary Wader Habitat Investigation. Report to NSW National Parks and Wildlife Service. (Avifauna Studies: Sydney).

Reliability

High – information is reliable

Uncertainties

-

Reference source

Brereton, R., and Taylor-Wood, E., 2010, Ecological Character Description of the Kooragang Component of the Hunter Estuary Wetlands Ramsar Site. Report to the Department of Sustainability, Environment, Water, Population and Communities (SEWPAC), Canberra.

Reliability

High – information is reliable

Uncertainties

-

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Section 8

Proposed alternatives

Do you have any feasible alternatives to taking the proposed action?

☑ Yes ☐ No

8.0 Provide a description of the feasible alternative

Site Selection Alternative Considerations

The subject land is in the same ownership as the adjoining Part 3A approved land to the north east, being Northbank Enterprise Hub Pty Ltd. It was a logical decision for the proponent to obtain the subject land from HDC in February 2011 when it became available for purchase based on the following:

- Ownership of the site would allow for a comprehensive masterplan for the Northbank Enterprise Hub lands to be developed by a single owner. This will result in an efficient design in terms of servicing, lot layout and road design and allow optimal ecological outcomes to be achieved;
- The site is zoned for industrial purposes, permitting the proposed development;
- The development would facilitate the objectives of the Lower Hunter Regional Strategy for the creation of employment lands;
- The site is located with good access to the Pacific Highway, New England Highway, M1, Newcastle Airport and Newcastle Harbour;
- The site area is suitable for the proposed industrial and business park subdivision, and the substantial size and ability to integrate with the adjoining Northbank Enterprise Hub Pty Ltd approved industrial subdivision allows for the development of appropriate synergies and an integrated well planned outcome;
- Given the extensive studies that Northbank Enterprise Hub has undertaken on the adjoining land associated with Part 3A Approval 07_0086, an extensive understanding of the locality and local environment has been achieved by the proponent.

There were no other suitable sites in the locality identified by Northbank Enterprise Hub Pty Ltd containing all of the above characteristics and as a result, the site was acquired by Northbank Enterprise Hub Pty Ltd.

The alternative of not proceeding with the development would result in the continued use of the land for grazing and would not see the employment and economic land use outlined under the Lower Hunter Regional Strategy realised.

Alternative Design Considerations

The final design of the Northbank Enterprise Hub was produced following a substantial design process and input from a number of specialist environmental consultants. A series of concept structure plans were developed and explored based on vehicular access and each plan offered different responses related to development staging, buffers & setbacks, traffic movement and land use.

The chosen design layout was selected on the following basis:

- Its setbacks and overall ability to protect adjoining wetlands;
- A primary road link is established through the site with appropriate access points to Tomago Road allowing for excellent vehicular access;
- The design will allow for the existing European heritage to be maintained and enhanced. In particular through the provision of appropriate curtilage around Tomago House and Chapel and the creation of ‘Gunner Heritage Park’ which will provide public access to former WW11 anti aircraft battery which are not currently available to the public;
- The design of the subdivision allows for the significant natural features of the site to be maintained and enhanced, in particular the floodplain at the southern section of the site, enhancement of drainage channels through the site and retaining the character of the Hunter River frontage of the site;
- The design of the drainage for the subdivision will allow for no impact on the wetlands to the south of the site;
- The design allows for future flexibility of lot size to meet end user requirements;
- The design allows for the establishment of connectivity within and beyond the Northbank Enterprise Hub site by the opening of circulation roads and pedestrian & bike pathways;
- Open space within the subdivision has been designed to embrace building fabric, passive and active parkland and view corridors to the Hunter River;
- The subdivision design allows for the creation of public spaces with opportunities for accessibility to the wetlands to the south of the site and to the Hunter River waterfront;
- The future pedestrian and cycle pathways through the site providing connection to the public open spaces, parks and waterfront will contribute to the establishment of a healthy work environment within the Northbank Enterprise Hub; and
- The design of the subdivision allows for logically staged development that can occur in an economically viable manner over the next twenty (20) years.

Based on the above, Northbank Enterprise Hub Pty Ltd are confident that the location of the subject site and the proposed design of the subdivision are the optimal outcomes to facilitate the proposed development and protect important wetlands as well as be compatible with nearby land use.

8.1 Select the relevant alternatives related to your proposed action

☐ Timeframes
☐ Locations
☐ Activities

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8.25 Do you have another alternative?

☐ Yes ☑ No

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Section 9

Person proposing the action

9.1.1 Is the person proposing the action an organisation or business?

☑ Yes ☐ No

Organisation

Organisation name (as registered for ABN/ACN)	NORTHBANK ENTERPRISE HUB PTY LTD
Business name	
ABN	77063271625
ACN	
Business address	30 Kings Park Rd, West Perth, 6005, WA, Australia
Postal address	
Main Phone number	02 8229 0388
Fax	
Primary email address	Ace.Developments@acequity.com.au
Secondary email address	

9.1.2 I qualify for exemption from fees under Regulation 5.23(1)(ii) of the EPBC Regulations because I am:

☐ Small business
☑ Not applicable

9.1.2.2 I would like to apply for a waiver of full or partial fees under Regulation 5.21A of the EPBC Regulations

☐ Yes ☑ No

9.1.3 Contact (for an organisation - the contact details of the person authorised to sign on behalf of the organisation)

First name	Bryant
Last name	Stokes
Job title	Property Development Executive
Phone	
Mobile	
Fax	
Email	Bryant.Stokes@acequity.com.au
Primary address	30 Kings Park Rd, West Perth, 6005, WA, Australia
Address	

Declaration: Person proposing the action (To be signed by the person at 9.1.3)

I, Bryant Stokes **, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf or for the benefit of any other person or entity.**

Signature: ..... **Date:** 28/10/2021

I, Bryant Stokes **, the person proposing the action, consent to the designation of** _____ **as the proponent for the purposes of the action described in this EPBC Act Referral.**

Signature:.....**Date:** 28/10/2021

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Proposed designated proponent

9.2.1 Is the proposed designated proponent an organisation or business?

☑ Yes ☐ No

Organisation

Organisation name (as registered for ABN/ACN)	NORTHBANK ENTERPRISE HUB PTY LTD
Business name	
ABN	77063271625
ACN	
Business address	30 Kings Park Rd, West Perth, 6005, WA, Australia
Postal address	
Main Phone number	02 8229 0388
Fax	
Primary email address	Ace.Developments@acequity.com.au
Secondary email address	

9.2.2 Contact (for an organisation - the contact details of the person authorised to sign on behalf of the organisation)

First name	Bryant
Last name	Stokes
Job title	Property Development Executive
Phone	02 8229 0388
Mobile	
Fax	
Email	Bryant.Stokes@acequity.com.au
Primary address	30 Kings Park Rd, West Perth, 6005, WA, Australia
Address	

Declaration: Proposed Designated Proponent

I, Bryant Stokes **,the proposed designated proponent, consent to the designation of myself as the proponent for the purposes of the action described in this EPBC Act Referral.**

Signature: ..... **Date:** 28/10/2021

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Referring party (person preparing the information)

9.3.1 Is the referring party an organisation or a business?

☑ Yes ☐ No

Organisation

Organisation name (as registered for ABN/ACN)	Kleinfelder Australia Pty LTD
Business name	
ABN	23146082500
ACN	
Business address	Suite 3, 240-244 Pacific Highway, Charlestown, 2290, NSW, Australia
Postal address	
Main Phone number	0249495200
Fax	
Primary email address	dobrien@kleinfelder.com
Secondary email address	

9.3.2 Contact (for an organisation - the contact details of the person authorised to sign on behalf of the organisation)

First name	Daniel
Last name	O'Brien
Job title	Senior Ecologist
Phone	0249495200
Mobile	0423490608
Fax	
Email	dobrien@kleinfelder.com
Primary address	Suite 3, 240-244 Pacific Highway, Charlestown, 2290, NSW, Australia
Address	

Declaration: Referring party (person preparing the information)

I, Daniel O'Brien **, declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence.**

Signature: ..... **Date:** 28/10/2021

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Appendix A

Attachment

Document Type	File Name
action_area_images	* 20192790_Fig1_Locality_V2.pdf
action_area_images	* 20192790_Fig2_StudyArea_V4.pdf
action_area_images	* 20192790_Fig3_VegetationCommunities_V4.pdf
action_area_images	* 20192790_Fig4_ThreatenedFaunaHabitat_V3.pdf
action_area_images	Att01_Figure 1-4 Maps.pdf
action_area_images	Att02_Staging Plan.pdf
govt_approval_conditions	* A4 Project Approval Final.pdf
govt_approval_conditions	Att06_Project Approval.pdf
public_consultation_reports	* A1 Public Authority Consultation.pdf
public_consultation_reports	* A3 Consultation letters and ACHMP.pdf
public_consultation_reports	* A2 Cond 37 ACHMP approval.pdf
public_consultation_reports	Att03_Public Authority Consultation.pdf
public_consultation_reports	** Att04_Cond 37 ACHMP approval.pdf
public_consultation_reports	* Att05_Consultation letters and ACHMP.pdf
supporting_tech_reports	* A5_PMST_23_June_2021.pdf
supporting_tech_reports	* A6 Likelihood of occurance table V4.pdf
supporting_tech_reports	* A7 MNES Assessments V7.pdf
supporting_tech_reports	* A8 Ecological Report - Part-1.pdf
supporting_tech_reports	* A8 Ecological Report - Part-2.pdf
supporting_tech_reports	* A9 Aquatic Impact Assessment.pdf
supporting_tech_reports	* A12 Offset Strategy - Ecobiological 2013.pdf
supporting_tech_reports	* A13 Annual NEH Wetland Monitoring 2021.pdf
supporting_tech_reports	* A11 Contamination Report - Part 1.pdf
supporting_tech_reports	* A11 Contamination Report - Part 2.pdf
flora_fauna_investigation	Att07_Ecological Report.pdf
flora_fauna_investigation	Att08_Offset Strategy.pdf
flora_fauna_investigation	Att09_Contamination Report - Part 1 of 2.pdf
flora_fauna_investigation	Att09_Contamination Report - Part 2 of 2.pdf
flora_fauna_investigation	Att10_Likelihood of occurance table.pdf
flora_fauna_investigation	Att11_MNES Assessments.pdf
flora_fauna_investigation	Att12_Acid Sulphate Soils Management Plan.pdf
flora_fauna_investigation	Att15_PMST_23_June_2021.pdf
flora_fauna_investigation	Att16_Historical Arch Report.pdf
flora_fauna_investigation	Att17_Annual NEH Wetland Monitoring 2021.pdf
hydro_investigation_files	* A20 Aquatic Impact Assessment.pdf
hydro_investigation_files	* A9 Flood Report - Part 1.pdf
hydro_investigation_files	* A9 Flood Report - Part 2.pdf
hydro_investigation_files	* A10 Stormwater Assessment.pdf
hydro_investigation_files	* A16 Groundwater Modelling Plot.pdf
hydro_investigation_files	* A17 Wetland Interface Strategy TWRP.pdf
hydro_investigation_files	* A18 Groundwater Report.pdf
hydro_investigation_files	Att13_Flood Report.pdf
hydro_investigation_files	Att14_Stormwater Assessment.pdf
hydro_investigation_files	Att21_Wetland Interface Strategy TWRP.pdf
impact_reduction_docs	* A14 Detailed Mitigation Measures - V2.pdf
impact_reduction_docs	* A15 Revised Statement of Commitments 120214.pdf
impact_reduction_docs	* A19 Shark Creek Conservation Agreement.pdf
impact_reduction_docs	Att18_Detailed Mitigation Measures.pdf
impact_reduction_docs	Att19_Revised Statement of Commitments.pdf
impact_reduction_docs	Att20_Groundwater Modelling Plot.pdf
impact_reduction_docs	Att22_Groundwater Report.pdf
impact_reduction_docs	Att23_Shark Creek Conservation Agreement.pdf
impact_reduction_docs	Att24_Aquatic Impact Assessment.pdf
impact_reduction_docs	** Att25_ACHMP.pdf
corp_env_policy_docs	Att26_Noise Report.pdf
corp_env_policy_docs	** Att05_Consultation letters V2.pdf

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Appendix B

Coordinates

Area 1
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