MAJOR PROJECT ASSESSMENT: Northbank Enterprise Hub Tomago Road, Tomago (MP 10_0185)

Secretary's Environmental Assessment Report
Section 75I of the
Environmental Planning and Assessment Act 1979

June 2014

Cover Photograph: Northbank Enterprise Hub Project Site in red outline
(Source: Environmental Assessment)

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EXECUTIVE SUMMARY

Northbank Enterprise Hub Pty Ltd (NEH) proposes to establish an industrial park on approximately 241 hectares of vacant agricultural land at Tomago in the Port Stephens local government area.

NEH is seeking approval for a staged subdivision of the site to create 59 lots for future industrial development. The Project includes bulk earthworks across the site and construction of infrastructure to service the industrial park, including roads and drainage. The proposed subdivision would be designed to integrate with the adjoining approved industrial subdivision (referred to as Redlake). NEH envisage that the Project would be delivered over a 20 year period in response to market demand for industrial businesses.

The Project has a capital investment value of around $300 million, would employ 180 construction workers over the life of the Project and includes:

- importation of approximately 3.7 million cubic metres of fill to raise 154 hectares of the site above the 1 in 100 year flood level;
- construction of two new intersections along Tomago Road and an internal road network;
- substantial drainage infrastructure and flood mitigation works, including a small levee to protect industrial properties to the west and an overflow wetland on the site near the Hunter River;
- dedication and management of land for biodiversity values, including retention and active management of wetland areas;
- retention and interpretation of World War II heritage items within a designated public park; and
- a public park along the Hunter River frontage.

The Project is classified as a 'Major Project' under Part 3A of the *Environmental Planning & Assessment Act 1979* (EP&A Act), as it is development within the Tomago Industrial Site, a State Significant Site identified in Schedule 3 of *State Environmental Planning Policy (Major Development) 2005* that has a capital investment value of more than $5 million and involves subdivision of land. As the Environmental Assessment (EA) for the Project was lodged prior to 1 October 2011, the Project is considered to be a transitional Part 3A Project.

The Department exhibited the EA from 14 September 2012 to 30 October 2012, and received 15 submissions, including 8 from government agencies, 3 public submissions and 4 from special interest groups.

None of the agencies objected, however, the Environment Protection Authority (EPA), Office of Environment and Heritage (OEH), Port Stephens Council (Council), the Hunter-Central Rivers Catchment Management Authority and the Roads and Maritime Services raised concerns. The concerns were primarily related to regional flooding impacts, stormwater and wetland management, biodiversity and roads.

One public submission objected to the Project and two raised concerns regarding stormwater, flooding and traffic impacts. The Hunter Bird Observers Club also objected to the Project, raising concerns over the potential impacts on the Eastern Grass Owl and sea level rise. The National Trust raised concerns over the impacts on the State heritage listed Tomago House, located adjacent to the site.

NEH provided a response to submissions (RTS), including additional technical information on stormwater and flooding. Following review of the RTS, the Department, the EPA and OEH still had some concerns regarding stormwater management and flooding impacts. NEH provided further supporting information and additional flood impact assessment.

The Department assessed the EA, submissions, RTS and additional information and concluded that the key issues for the Project are flooding, stormwater and wetland management, biodiversity and heritage. Other issues include traffic, noise, air quality and development contributions.

The Department's assessment found that development of all stages of the Project may result in increased flooding impacts on adjacent properties and across the broader Hexham area. The Department commissioned two independent flooding specialists to assist in its assessment of these impacts. The specialists recommended that the development be adjusted to minimise flooding impacts either through a reduced footprint or by reducing the fill in certain parts of the site, such as roadways or parks. The Department acknowledges that NEH has made some changes to the Project

to reduce its impact on flood behaviour, such as reducing the areas it had proposed to fill and providing flood water retention areas on site. However, NEH raised concerns about any further reductions to the development footprint, citing a need to provide certainty to future industrial tenants that they would have adequate flood protection and to enable the development to achieve the design requirements of the stormwater management system.

The Department acknowledges that the land was zoned specifically for industrial use and is identified in the *Lower Hunter Regional Strategy 2006-31* as major employment land. The Department also notes that the site and the Lower Hunter floodplain are already subject to significant flooding, with levels during the 1 in 100 year event up to 4 metres in depth at many properties.

The Department considered two key aspects with respect to flooding; the Project's influence on the overall flood risk in the region and the Project's impact on increased flood depths. On the first point, the flood impact assessment and the Department's independent flooding specialists confirmed that the Project would not change the overall flood risk profile in the Lower Hunter region. However, the Project would marginally increase flood depths across the Hexham area. Specifically, the Project is estimated to increase flood depths by up to 40mm in the 1 in 100 year flood event. To provide context, many properties would already experience flood waters up to 4m in depth during the 1 in 100 year event without the Project. Notwithstanding the marginal increase resulting from the Project, the Department notes that the City of Newcastle has identified a cumulative target for flood level increases of no more than 40mm across the region.

Acknowledging the importance of the site in delivering major employment land to the region, the Department, with advice from its specialists and in consultation with OEH, sought to establish the extent of development that would result in an acceptable flood level increase, consistent with other recently approved developments in the Hexham area. These recently approved developments in Hexham established 20mm as an acceptable flood level increase, beyond which mitigation and/or compensation would be required. NEH revisited the flood modelling to establish the limit of development to achieve no more than a 20mm flood level increase across the region. This development extent is referred to as Stage 1. The Department has recommended conditions to allow Stage 1 to proceed without requiring any further flood modelling, mitigation or compensation.

Beyond Stage 1, the Department and its flooding specialists concluded that further flood verification studies would be required to clearly establish the flood level increases from subsequent stages. The Department's flooding specialists also recommended that landowners affected by further flood level increases should be financially compensated for increased risk of property damage and recommended that this be calculated in accordance with the *Floodplain Risk Management Guideline (Residential Flood Damages), March 2006*. The Department has recommended conditions requiring further flood verification studies and compensation for the increased risk of property damage for the most affected landowners prior to progression to subsequent stages of the Project. The Department has also recommended detailed conditions for consulting with affected landowners throughout the compensation process, providing a dispute resolution mechanism and ensuring that current and future landowners are able to obtain up to date flooding information for their land. The Department has further recommended that NEH make a financial contribution of $350,000 to City of Newcastle Council to fund identified works to minimise flood risk across the region, specifically the completion of the early flood warning system for Newcastle, as identified in the *Newcastle City-wide Floodplain Risk Management Study and Plan, 2012.* OEH has indicated that it accepts the recommended conditions.

In relation to stormwater management, the Department, in consultation with Council, the EPA and OEH has recommended detailed conditions relating to stormwater design, maintenance and monitoring, to protect the adjacent wetland habitats that are of international and State importance.

After extensive consultation with the Department and OEH, NEH has committed to provide a comprehensive biodiversity offset package that would protect wetland areas on site and secure a larger off site area with similar vegetation types to those found on site. The offset package has been developed in accordance with OEH's Biobanking methodology and would be implemented in accordance with relevant OEH guidelines.

The Department is satisfied that the impacts of the Project can be adequately mitigated, managed, offset and/or compensated for through implementation of a number of commitments made by NEH and conditions recommended by the Department. These include:

- provision of a biodiversity offset package that protects on-site wetlands as well as a 250 ha site in northern NSW to offset the impacts of clearing;
- provision of flood mitigation works to protect adjacent properties;
- stringent requirements relating to flooding before the proposal could proceed beyond Stage 1, including:
    - detailed flood verification of subsequent stages by a qualified expert;
    - a landowner consultation plan to explain the predicted regional flood level increases;
    - compensation for the most affected landowners for flood level increases from subsequent stages of the Project;
    - financial contribution to the City of Newcastle for completion of an early flood warning system for Newcastle, with specific implementation works in the Hexham area;
- detailed stormwater design requirements;
- an on-going wetland monitoring and management program;
- specific measures to protect the heritage significance of Tomago House and Chapel; and
- retention of the WWII anti-aircraft gun emplacements and preservation within a public park.

The Department has recommended a broad range of conditions to ensure these and other measures are effectively implemented and appropriately managed.

The Department's assessment recognises the significance and need for the Project in terms of promoting the development of the Tomago Industrial Site, which is identified as a State Significant Site under *State Environmental Planning Policy (Major Development) 2005*. The Project is consistent with the objectives of the *Lower Hunter Regional Strategy 2006-31* providing for the early development of employment lands and generating jobs in the local area.

The Department is satisfied that the Project has significant economic benefits for the Lower Hunter region and that it is therefore in the public interest. Consequently, the Department recommends that the Project be approved, subject to strict conditions.

1. BACKGROUND

1.1 Project background

Northbank Enterprise Hub Pty Ltd (NEH) proposes to establish an industrial park on 241 hectares (ha) of vacant agricultural land at Tomago, in the Port Stephens local government area (LGA), see Figure 1.

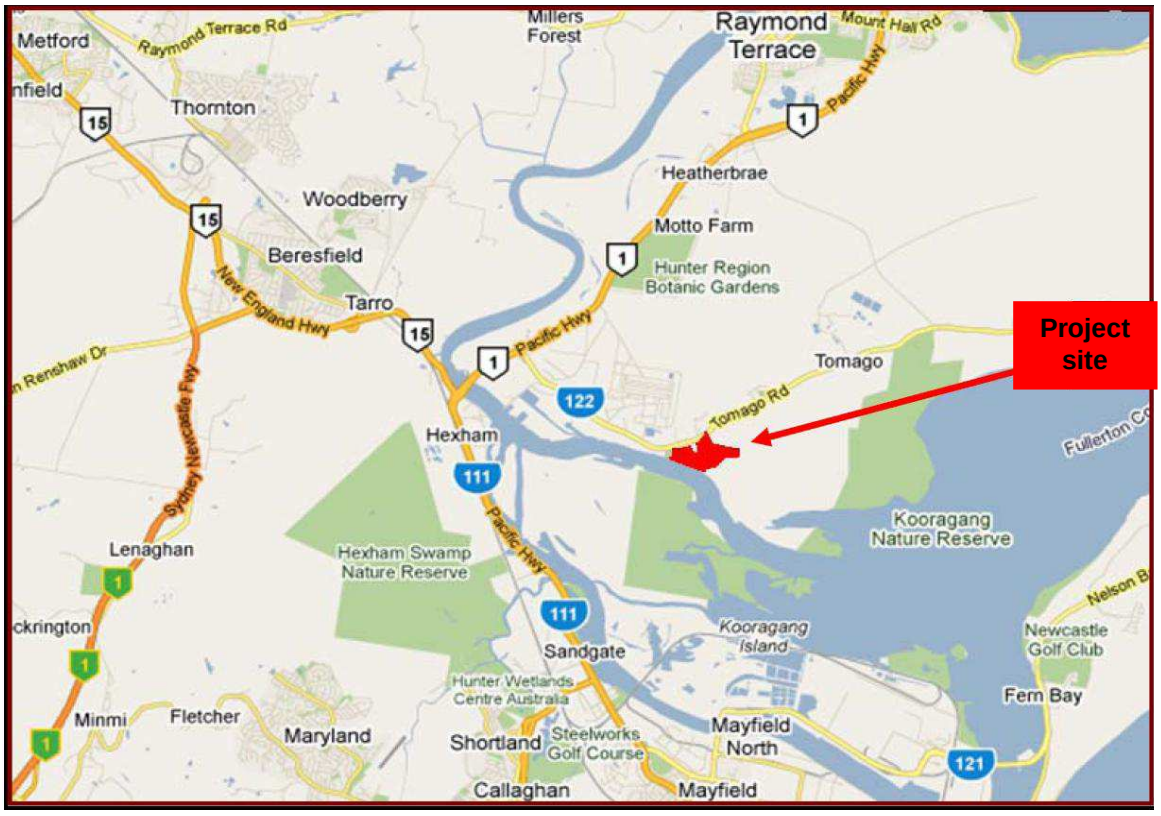

***Figure 1**: Project Location*

The site has historically been used for agricultural purposes and was previously owned by Tomago Aluminium, forming part of the environmental buffer for its aluminium smelter on the northern side of Tomago Road. The site was acquired by the NSW Government in 2003 and rezoned via *State Environmental Planning Policy No 74 - Newcastle Port and Employment Lands* (SEPP 74) to enable development of a steel mill and associated infrastructure. However, construction of the steel mill did not proceed and the site was later acquired by the Regional Land Management Corporation Pty Ltd (RLMC).

SEPP 74 was subsequently repealed and in June 2007 the land was declared a State Significant Site, known as the Tomago Industrial Site under *State Environmental Planning Policy (Major Development) 2005* (MD SEPP). The MD SEPP formalised the industrial zoning identified in SEPP 74 and broadened the permissible uses to allow for other types of industrial activities. The MD SEPP also formalised the environmental conservation zone of the adjacent land (refer to Figure 2).

In February 2010, WEPL Investments Pty Ltd purchased the 241ha Project site (referred to as Lot 1001) from the RLMC with the objective of developing an industrial park on the site. WEPL Investments Pty Ltd had previously purchased 93ha of land in the Tomago Industrial site for development of the Redlake Industrial Estate, which was approved by the then Minister for Planning in 2009. The Redlake Estate is being developed in three stages, with the first stage housing the Westrac facility which has been operational since 2011.

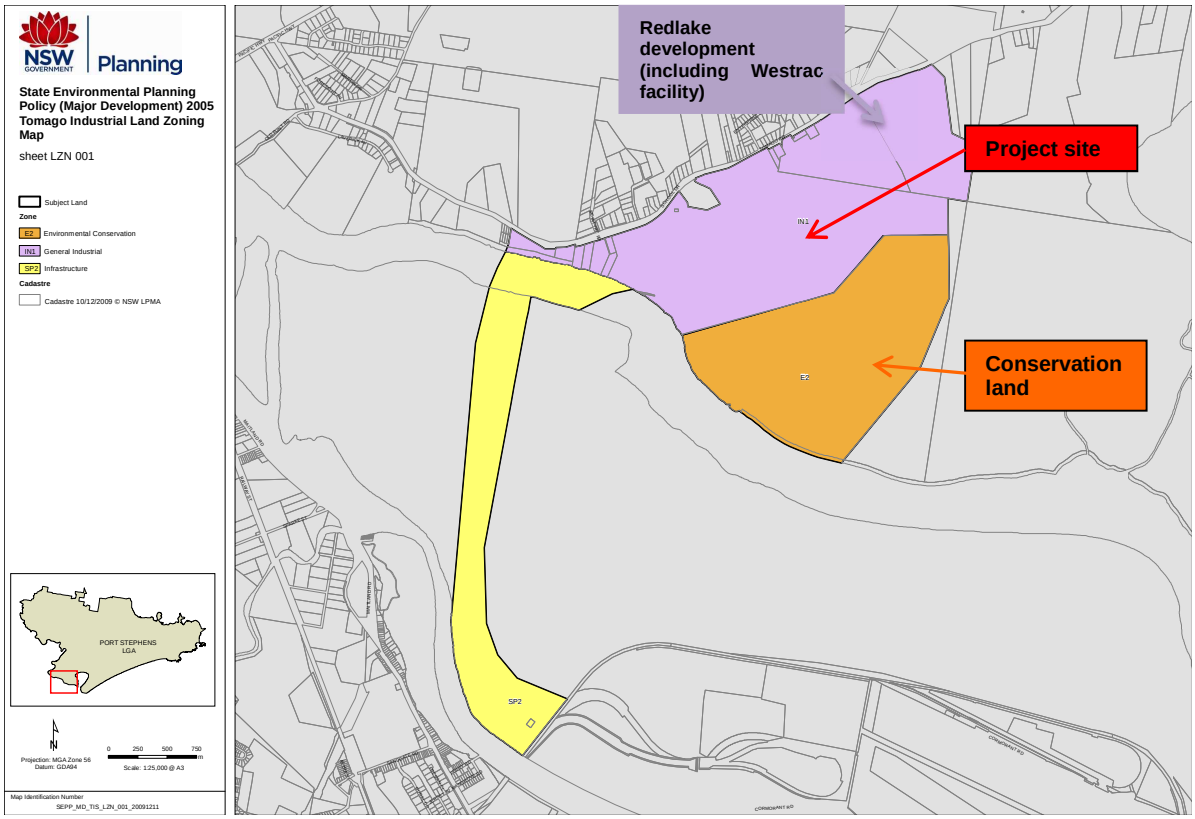

***Figure 2**: State Significant Site – Tomago Industrial Site*

1.2 Project Context

The site is located immediately adjacent to the Hunter River, approximately 12 kilometres north-west of Newcastle (refer to Figure 3). Immediately to the west of the site is a small cluster of industrial properties located along the riverbank. Tomago Road lies to the north, with light industry and the Tomago Aluminium smelter located on the northern side of Tomago Road. Tomago House and Chapel, items listed on the State Heritage Register are located in the centre of the site's north-western boundary. The new Redlake Industrial Estate immediately to the north has been partially developed and includes the Westrac facility. The Proponent proposes to integrate the NEH Project with the Redlake Industrial Estate to form a consolidated industrial park.

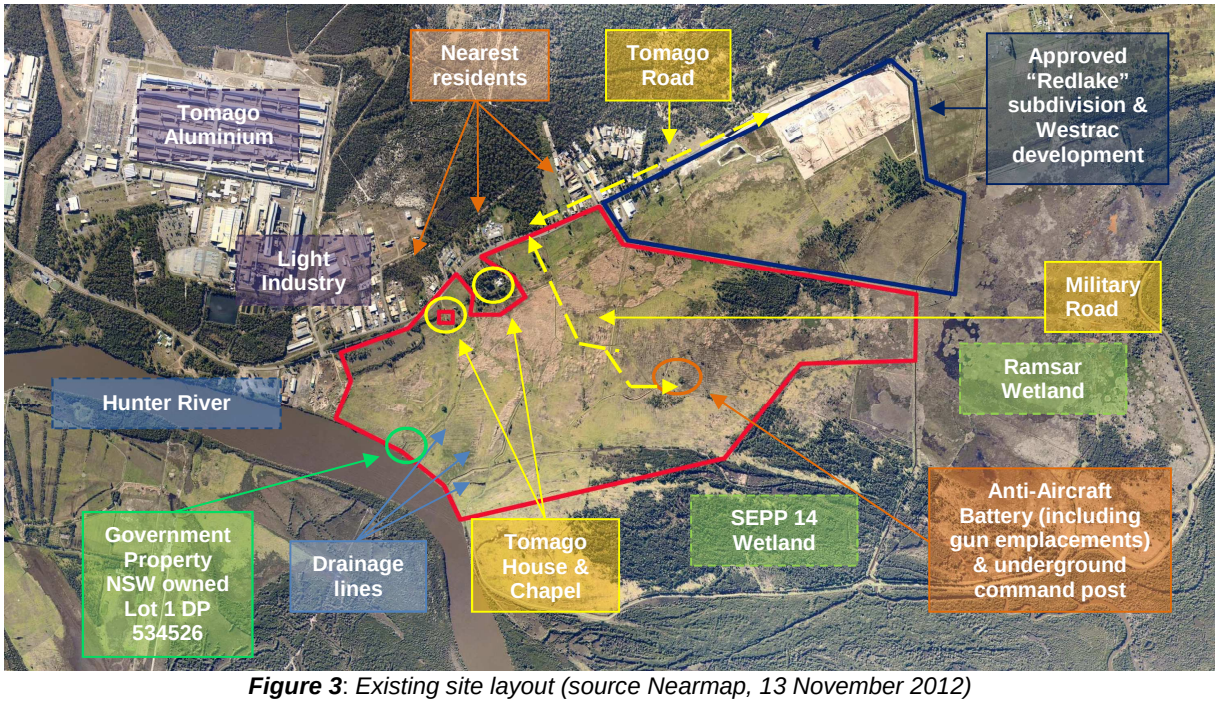

***Figure 3**: Existing site layout (source Nearmap, 13 November 2012)*

Immediately to the east of the site is the Hunter Wetlands National Park, which includes wetlands of international importance (referred to as Ramsar wetlands). These wetlands are recognised as a significant area of conservation for migratory birds, with a number of migratory birds recorded in this area listed under international treaties including the Japan-Australia and China-Australia Migratory Bird Agreements (JAMBA and CAMBA).

Along the south-eastern boundary is the land referred to as Lot 1002, which is identified as conservation land in the MD SEPP. This land includes wetlands that are of state significance and are identified under *State Environmental Planning Policy 14 – Coastal Wetlands* (SEPP 14). This site is owned by Port Waratah Coal Services (PWCS) and is referred to throughout this report as the 'PWCS land'.

The Tomago Sandbeds, a groundwater aquifer managed by Hunter Water Corporation for the provision of drinking water, is located to the north and north-east of the site.

The site is located on the north bank of the North Arm of the Hunter River and is classified according to the *Floodplain Development Manual 2005* as containing areas of floodway, flood storage and flood fringe. Much of the surrounding area is also low-lying and flood prone with a series of levees and flood control structures in place as part of the Hunter Valley Flood Mitigation Scheme.

The nearest residences are located some 60 metres to the north of the site, across Tomago Road. There are also some small agricultural landholdings approximately 1 kilometre to the north, adjacent to the Redlake Estate. The site is accessible from Tomago Road, which connects with the Pacific Highway approximately 5 kilometres (km) to the west of the site. The Kooragang Wetlands are located immediately across the Hunter River and the industrial development of Kooragang Island and the Port of Newcastle is located over 5 km to the south.

1.3 Site Description

The site is located on the north bank of the Hunter River and consists of 241 hectares of generally flat, mostly cleared low lying vacant land. Approximately 61% of the site is covered in pasture grasses for livestock grazing, the remaining 39% contains a number of endangered ecological communities (EECs) listed on the *NSW Threatened Species Conservation Act 1995.* These include Freshwater Wetland Complex in the northern and eastern sections of the site, Swamp Oak Forest in the north-east and southern sections of the site and Swamp Sclerophyll Forest in the north-western corner of the site.

The site is located on the floodplain of the Hunter River and in large floods, the southern part of the site acts as a floodway and the northern part acts as flood storage. A number of man-made drainage channels convey water across the site to the Hunter River.

Four former World War II (WWII) anti-aircraft gun emplacements, an underground command post and three ammunition bunkers are also located in the centre of the site (see Figure 3).

A small lot owned by Government Property NSW, which contains navigation equipment maintained by the Newcastle Port Corporation is located on the Hunter River, in the centre of the site's south-western boundary.

A high voltage 132kV overhead powerline crosses the northern section of the site.

1.4 Project Need and Justification

The Tomago Industrial site was identified as a strategic area of land for meeting the employment and environmental objectives of the *Lower Hunter Regional Strategy 2006-31*. The Project would provide a large industrial park that would, over the long term, contribute to achieving the employment targets of the Lower Hunter region.

The Project would provide significant socio-economic benefits for the region, through the direct investment of $300 million, the generation of approximately 180 full time equivalent construction jobs and facilitation of future industrial employment over the next 20 years.

The Project would also conserve, enhance and provide public access to a number of significant heritage features within or adjacent to the site including the former WWII anti aircraft gun emplacements and an underground command post. The Project would also contribute to the conservation of important wetlands by setting aside 17 ha of wetlands for conservation purposes.

2. PROPOSED PROJECT

2.1 Project Description

NEH proposes to construct an industrial park at Tomago in stages over approximately 20 years, subject to demand for industrial lots. NEH would progressively fill the site and install the required infrastructure to service future development. Construction of individual industrial units would be undertaken by others and would be subject to separate development assessment.

Key components of the Project are summarised in Table 1, shown on Figure 4 and described in the Environmental Assessment (EA) for the Project (refer to Appendix E). The Project staging described in the EA was later modified in response to the Department's request to minimise the flooding impacts of the Project. The final staging is shown on Figure 5 and included in Appendix B.

Table 1: *Key Project Components*

Aspect	***Description***
Project Summary	***Staged construction of an industrial park, including subdivision, bulk earthworks, construction of intersections, internal roads and drainage infrastructure, and a biodiversity offset package.***
Subdivision	Subdivision of the site into approximately 59 lots for future industrial development.
Bulk Earthworks	3.7 million m^3 of fill would be imported to raise 154ha of the site above the 1 in 100 year flood level. Filling would be undertaken in stages over an approximate 20 year period.
Roads and Intersections	▪ Two new signalised intersections on Tomago Road (Central and Western). ▪ An internal road network connecting with the adjacent Redlake Industrial Estate.
Stormwater / Drainage Infrastructure	▪ Four constructed drainage channels including bio-retention units, grassed swales and gross pollutant traps. ▪ A perimeter berm along the south eastern site boundary to prevent excess water from the site entering directly into the adjoining wetlands. ▪ A 10ha constructed overflow wetland adjacent to the Hunter River to capture flows that overtop the perimeter berm, and an area for backwater ponding. ▪ A 3m wide drainage corridor along the western site boundary to provide flood mitigation for the adjacent industrial properties.
Flood mitigation	▪ Construction of a levee (0.5 – 1m high) to protect the industrial properties to the west of the site adjacent to the river.
Other Infrastructure	▪ Potable water, wastewater, electricity and telecommunications would be provided through the augmentation of existing services. ▪ Relocation of the existing 132 kV transmission line and easement.

Vegetation Clearing	▪ 141.66 ha of Exotic Grasslands.
	▪ 73.2 ha of endangered ecological communities (EEC), including:
	  ▪ 1.5 ha of Swamp Sclerophyll Forest EEC;
	  ▪ 13.6 ha of Swamp Oak Forest EEC including 59 hollow bearing trees; and
	  ▪ 58.1 ha of Freshwater Wetland Complex EEC.

Biodiversity Offset	▪ 250 ha of land off-site, in northern NSW, referred to as Shark Creek. ▪ 12.5 ha of Freshwater Wetland Complex EEC in the eastern part of the site. ▪ 3.4 ha of Swamp Oak Forest EEC in the southern part of the site. ▪ Rehabilitation of 1.1 ha of Swamp Oak Forest EEC in the southern part of the site.
Open space	▪ 'Gunner Heritage Park' near the southern boundary, designed to retain four former WWII anti-aircraft gun emplacements and an underground command post. ▪ 'Riverside Park', a public open space in the southern part of the site near the Hunter River.
Approximate vehicle movements	▪ Total truck numbers are 248,376 over a 20 year period. ▪ Estimates for Stage 1 are 105,140 truck movements over an 18 month period.
Employment	180 construction employees.
Capital Investment Value	$300 million.
Construction hours	Monday to Friday 7am – 6pm; and Saturdays 8am – 1pm and no work on Sundays or public holidays.
Duration	Each stage is estimated to take 18 months to complete.

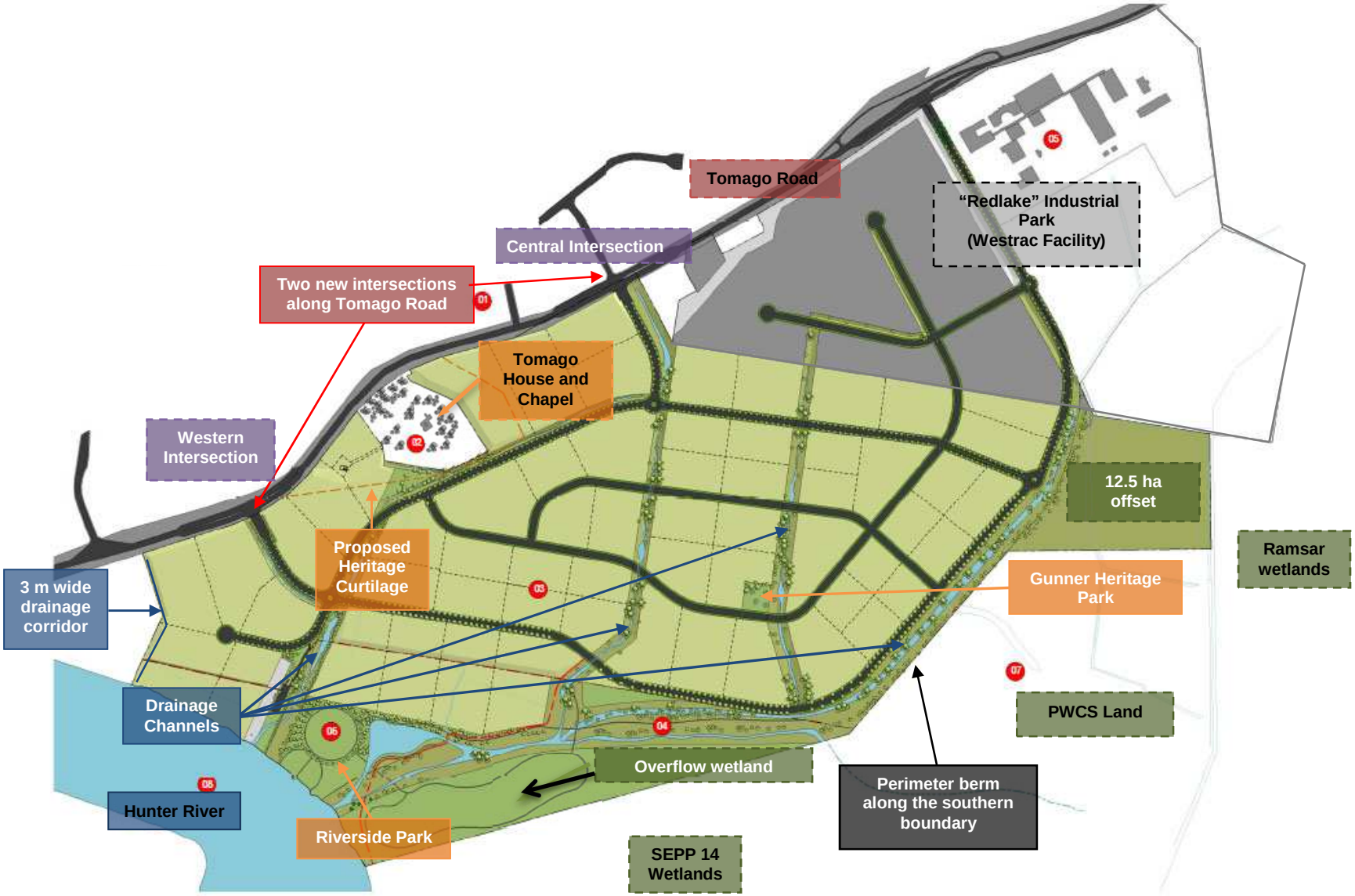

***Figure 4**: Project Layout*

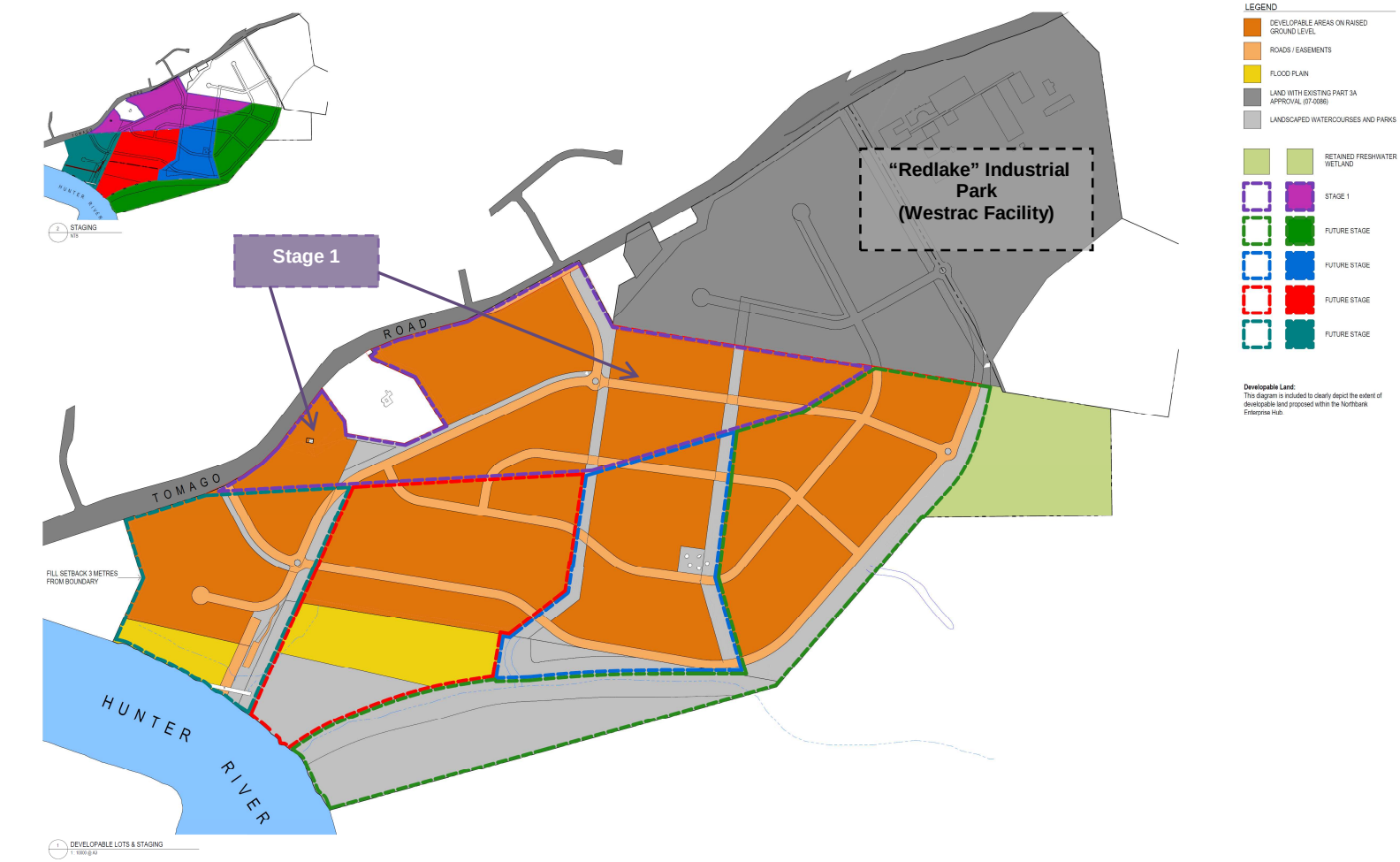

***Figure 5**: Project Staging*

3. STATUTORY CONTEXT

3.1 Strategic Context

NSW 2021 and the Hunter Regional Action Plan

NSW 2021 is a 10 year plan that sets strategies and goals for Government action in NSW, covering areas such as transport, community services, economic growth and the environment. The *Hunter Regional Action Plan December 2012 (Hunter RAP),* further details how these objectives will be achieved in the region. The Department has assessed the proposal against these objectives and considers that the Project would be consistent with a number of the priorities identified in *NSW 2021* and the *Hunter RAP*. The Project has a capital investment value of $300 million and would help to rebuild the economy by providing 180 jobs during construction (Goal number 1) and drive economic growth in NSW, in particular, regional NSW (Goal number 3).

Lower Hunter Regional Strategy 2006-31

The site has been identified as employment land under the *Lower Hunter Regional Strategy 2006-31*. This strategy identifies land to accommodate the projected housing and employment needs for the region (Newcastle, Lake Macquarie, Port Stephens, Maitland and Cessnock LGAs) until 2031. With an increase in population expected, the strategy outlines that an additional 66,000 jobs are required to maintain employment rates in the area. It is expected that of these 66,000 jobs, 25% or 16,500 jobs would need to be located in areas identified as major employment land. The Project would employ 180 during its construction and would also facilitate future development, which would generate further long-term employment opportunities. As such, the proposal would assist in achieving the employment targets identified in the *Lower Hunter Regional Strategy 2006-31*.

The Lower Hunter over the next 20 years: A Discussion Paper, March 2013

The Discussion Paper is the first step in the development of a new Lower Hunter Regional Strategy that will build on the *Lower Hunter Regional Strategy 2006-31*. The Discussion Paper invites input from the local community on how the new strategy should guide future planning and investment decisions relating to housing, employment, infrastructure and recreation. The Discussion Paper identifies employment land in the region that has been rezoned, including the Tomago State Significant Site.

Draft Lower Hunter Special Infrastructure Contributions 2011

The site has been identified in the *Draft Lower Hunter Special Infrastructure Contributions 2011* (SIC). The Draft SIC was developed to streamline the contributions process for regional infrastructure in the Lower Hunter and is one of the implementation actions of the *Lower Hunter Regional Strategy 2006-31*. Contributions will fund a wide range of infrastructure including, roads, education, emergency services, health and regional open space.

Under the SIC, the Proponent would be required to pay a levy of $42,000 per developable hectare. However, the Department has applied a reduced levy of $29,000 per developable hectare for the Project, consistent with the adjoining Redlake Industrial Estate project approval (07_0086). Further discussion of development contributions is provided in Section 5.7.

3.2 Major Project

The Project is classified as a Major Project under Part 3A of the *Environmental Planning & Assessment Act 1979* (EP&A Act), as it is development within the Tomago Industrial Site, a State Significant Site identified in Schedule 3 of the *State Environmental Planning Policy (Major Development) 2005* that has a capital investment value of more than $5 million and involves subdivision of land.

3.3 Continuing Operation of Part 3A

Part 3A of the EP&A Act, as in force immediately before its repeal on 1 October 2011 and as modified by Schedule 6A to the EP&A Act, continues to apply to transitional Part 3A Projects. Environmental assessment requirements (EARs) were issued in respect of this project prior to 1 October 2011 and the Project is therefore a transitional Part 3A Project.

Consequently, this report has been prepared in accordance with the requirements of Part 3A and associated regulations, and the Minister (or a delegate) may approve or disapprove of the carrying out of the Project under Section 75J of the EP&A Act.

3.4 Approval Authority

On 27 February 2013, the Minister for Planning delegated responsibility for the determination of project applications under Part 3A of the EP&A Act to the Executive Director where:

- the relevant Council has not made an objection;
- there are fewer than 25 submissions objecting to the proposal; and
- a political disclosure statement has not been made in relation to the application.

There have been two submissions received from the public objecting to the Project, Port Stephens Council does not object to the Project and no political disclosure statements have been made for this application or for any previous related applications. In addition, there have been no disclosures made by any persons who have lodged an objection to this application.

Accordingly the application is able to be determined by the Executive Director under delegation.

3.5 Permissibility

Under Section 75J of the EP&A Act, the Minister or a delegate cannot approve the carrying out of a project that would be wholly prohibited under an environmental planning instrument.

The site is zoned IN1 General Industrial under Schedule 3, Part 10 of the MD SEPP. Subdivision and earthworks are permissible with consent in the IN1 zone.

Therefore the Minister or a delegate may determine the carrying out of the Project.

3.6 Other Approvals

Under Section 75U of the EP&A Act, NEH requires other approvals for the Project which are not integrated into the Part 3A approval process, including:

- consent from the Minister for the Environment under Section 256 of the *Water Management Act 2000* for construction of a flood work on lands declared to be within the floodplain of the Hunter River; and
- Council consent and the RMS concurrence under Section 138 of the *Roads Act 1993* for the required connections to Tomago Road.

The Department has consulted with the Office of Environment and Heritage, the Roads and Maritime Services and Port Stephens Council and has considered the relevant issues relating to the above approvals in its assessment of the Project (see Section 5.1 and 5.7).

3.7 Environmental Planning Instruments

Under Sections 75I(2)(d) and 75I(2)(e) of the EP&A Act, the Secretary's report for a project is required to include a copy of, or reference to, the provisions of any State Environmental Planning Policy (SEPP) that substantially governs the carrying out of the project, and the provisions of any environmental planning instruments (EPI) that would (except for the application of Part 3A) substantially govern the carrying out of the project and that have been taken into consideration in the assessment of the project.

The Department has considered the Project against the relevant provisions of several key environmental planning instruments including:

- *State Environmental Planning Policy (Infrastructure) 2007* (ISEPP)*;*
- *State Environmental Planning Policy* 14 – *Coastal Wetlands* (SEPP 14);
- *State Environmental Planning Policy No. 44 – Koala Habitat Protection* (SEPP 44);
- *State Environmental Planning Policy No. 55 – Remediation of Land* (SEPP 55); and
- *State Environmental Planning Policy 71 – Coastal Protection* (SEPP 71)*.*

The Department is satisfied that, subject to the implementation of the recommended conditions of approval, the Project is generally consistent with the aims and objectives of these instruments (see consideration of these instruments in Appendix F).

3.8 Objects of the EP&A Act

Decisions made under the EP&A Act must have regard to the objects of the Act, as set out in Section 5 of the Act. The relevant objects are:

(a) to encourage:

(i) the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment,
(ii) the promotion and co-ordination of the orderly and economic use and development of land,
(vi) the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats, and
(vii) ecologically sustainable development.

The Department has considered the objects of the EP&A Act, and determined that the Project is consistent with the relevant objects of the Act. The detailed assessment of the application in relation to these relevant objects is provided throughout Section 5 of this report.

The EP&A Act adopts the definition of Ecologically Sustainable Development (ESD) found in the *Protection of the Environment Administration Act 1991*. Section 6(2) of that Act states that ESD requires the effective integration of economic and environmental considerations in decision-making processes and that ESD can be achieved through the implementation of:
(a) the precautionary principle;
(b) inter-generational equity;
(c) conservation of biological diversity and ecological integrity; and
(d) improved valuation, pricing and incentive mechanisms.

Detailed assessment of the economic and environmental issues associated with the Project is provided in Section 5 of this report. On the basis of this assessment, the Department is satisfied that the proposal encourages ESD, in accordance with the objects of the EP&A Act.

3.9 *Environment Protection and Biodiversity Conservation Act, 1999*

On 16 November 2011, the Commonwealth Government determined the Project to be a "controlled action" under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), as it was considered likely that the Project could have a significant impact on:
- wetlands of international importance (i.e. Ramsar wetlands);
- nationally listed threatened species and ecological communities; and
- listed migratory species.

Following consultation with the Department and the OEH regarding potential impacts on threatened species, the Proponent amended the Project to avoid a 12.5 ha parcel of Freshwater Wetland Complex EEC adjacent to the Ramsar wetlands, setting it aside as a conservation offset.

Following this amendment, the Proponent withdrew its referral to the Commonwealth Government as it no longer considered that the Project was a controlled action due to the now 380 metre setback distance from the Ramsar wetlands.

NEH has indicated that it would refer the application to the Commonwealth again following determination of the Project, with the justification that it no longer considers the Project to be a controlled action. The Commonwealth would then undertake its own assessment of the Project and a separate approval may be required from the Commonwealth under the EPBC Act, if it determines that the Project is still a controlled action.

4. CONSULTATION AND SUBMISSIONS

4.1 Exhibition and Notification

Under Section 75H(3) of the EP&A Act, the Secretary is required to make the EA of an application publicly available for at least 30 days.

After accepting the EA for the Project, the Department:

- made it publicly available from **Friday 14 September 2012** until **Tuesday 30 October 2012** (47 days including school holidays):
    - on the Department's website; and
    - at the Department's information centre, Port Stephens Council, Tomago Bowling and Sporting Club and the Nature Conservation Council.
- notified landholders in the vicinity of the site about the exhibition period by letter;
- notified relevant State and local government authorities in writing; and
- advertised the public exhibition in the Newcastle Herald and Port Stephens Examiner on Thursday 13 September 2012.

The Department received 15 submissions during the exhibition of the EA including eight submissions from public authorities, four from special interest groups and three from the general public.

In December 2012, NEH provided a response to the issues raised in submissions including additional technical information on flooding and stormwater management. The Response to Submissions (RTS) report was placed on the Department's website and referred to key agencies for comment. A summary of the RTS is provided in Section 4.5 and a copy of the report is included in Appendix C.

A summary of the submissions made during exhibition of the EA and in response to the RTS is provided below. A copy of the submissions is included in Appendix D.

4.2 Public Authority Submissions

Port Stephens Council (**Council**) did not object to the Project however it initially raised significant concerns regarding the potential impacts of the Project, including:

- impacts on wetlands, including the need for a buffer between the adjacent Ramsar and SEPP 14 wetlands;
- flooding and the need to address the impacts on adjacent low lying properties, including further details of proposed mitigation;
- stormwater and drainage. Council noted that insufficient detail had been provided for Council to assess whether it could accept future maintenance of the proposed drainage infrastructure and as the drainage design was not standard, it would pose a substantial maintenance burden on Council;
- Council unwilling to accept ownership of the proposed public parks;
- need to address the requirements of the Tomago Aluminium Smelter buffer zone with respect to the type of industries that must be excluded from the airshed; and
- inadequate detail of or provision for public transport, cycling and pedestrians.

Council also provided extensive recommended conditions. NEH then met with Council and a subsequent submission was provided in which Council noted its support for the Project, whilst acknowledging that various technical aspects would need to be considered during the assessment. Council also provided revised recommended conditions that it had discussed at length with NEH.

Following review of the RTS, Council's final submission re-iterated its support for the Project and noted the following residual issues that would need to be considered in the Department's assessment:

- flooding impacts, Council re-iterated that it had significant concerns with the proposed extent of filling in the floodway and flood storage area and the level of impacts on adjacent properties; and
- drainage impacts, Council noted that there was not enough information to evaluate the post-development impacts on upstream properties.

Council provided revised conditions taking account of discussions with NEH and the additional information provided in the RTS. The conditions cover development contributions, vegetation and fauna management, wetland monitoring and management, stormwater and water quality, filling, roads and public transport, remediation, utilities and street trees.

The Department has incorporated Council's recommendations into the draft conditions of approval. Council reviewed the draft conditions and requested amendment to the condition requiring Section 94A development contributions, and other minor wording amendments which have been incorporated.

Office of Environment and Heritage (**OEH**) raised major concerns with the Project and noted that it was unable to offer support until outstanding issues had been addressed. Specifically, OEH raised concerns regarding:

- stormwater impacts and assessment;
- regional and localised flooding impacts, noting that the development exhibited in the EA could not be supported on floodplain management grounds;
- impacts on and management of the coastal floodplain;
- impacts and management of Aboriginal cultural heritage; and
- conservation offsets to compensate for the loss of biodiversity and habitat.

The Department, OEH and NEH met on a number of occasions to address OEH's concerns regarding biodiversity. These discussions led to the provision of a biodiversity offset package for the Project (see Section 5.4). OEH subsequently advised it was satisfied that the majority of its concerns regarding biodiversity and Aboriginal cultural heritage had been appropriately addressed and provided recommended conditions for these aspects.

However, OEH still raised significant concerns with the flooding and drainage aspects of the Project and the impacts on adjoining wetlands. OEH provided further comments on the need for stringent management and on-going monitoring of stormwater flows in consultation with the NPWS and PWCS with respect to the protection of the adjoining wetlands. These comments have been incorporated into the recommended conditions.

With respect to flooding, OEH advised that it was unable to offer its support for the entire Project and would be unlikely to grant consent for the Project under Section 256 of the *Water Management Act 2000* (WM Act) given the identified impacts on other owners and occupiers on the floodplain. However, OEH advised that it would be able to consider a reduced development footprint.

Section 5.1 of this report details the extensive discussions between the Department, OEH and NEH to address OEH's concerns, which were similar to issues raised by the Department and its flooding specialists. The Department has established a range of stringent conditions to address the flooding impacts of the Project, allowing Stage 1 of the development to proceed and requiring flood verification modelling and financial compensation for the most affected landowners for subsequent stages. The Department has also recommended that NEH contribute $350,000 to fund the completion of an early flood warning system for Newcastle, as identified in the *Newcastle City-wide Floodplain Risk Management Study and Plan, 2012*.

OEH subsequently advised that it accepts the recommended conditions.

Office of Environment and Heritage (Heritage Branch) did not object to the Project and provided recommended conditions for the management of WWII heritage items on site and the protection of the heritage values of Tomago House and Chapel located adjacent to the site.

Environment Protection Authority (EPA) advised that further detail was required to properly assess the Project with regard to earthworks, stormwater management, noise, vibration and air quality. Notwithstanding, the EPA did not object to the Project and provided recommended conditions for the use of fill material, bunding and air quality management. The EPA requested further analysis of noise mitigation, including consideration of a noise barrier along the northern site boundary.

Following review of the RTS, the EPA provided further recommended conditions including noise limits, stormwater management, protection of adjacent wetlands and air quality. These recommendations have been incorporated into the draft conditions.

Roads and Maritime Services (RMS) did not object to the Project provided a number of matters are addressed and included in the conditions of approval, including:

- provision of detailed traffic analysis prior to construction and if there is insufficient capacity in the existing intersections, construction of the required intersection/s to the satisfaction of RMS and Council; and
- payment of development contributions or works-in-kind for regional infrastructure such as the upgrade of Tomago Road, consistent with the *Draft Lower Hunter Special Infrastructure Contributions, 2011*.

The RMS also provided a range of conditions for road design and construction, including the requirement for pedestrian, cyclist and public transport facilities. RMS noted that the proposed road works require Council consent with RMS concurrence in accordance with the *Roads Act, 1993* and the proposed traffic signals (at the central and western intersections) require RMS consent. Following review of the RTS, RMS provided further more specific conditions for design of the intersections, which have been broadly incorporated into the recommended conditions.

Department of Primary Industries (DPI) incorporating the NSW Office of Water (NOW) and Fisheries NSW (Fisheries) did not object to the Project. NOW provided recommended conditions covering water licensing and the need for a surface and groundwater management plan prepared in consultation with NOW.

Fisheries raised significant concerns regarding the potential impacts of filling on the floodplain on the adjacent wetlands and downstream oyster lease areas in the Hunter estuary. Fisheries noted its support for the Wetland Interface Strategy included in the EA and requested that the stormwater management plans be prepared in consultation with Fisheries.

The Department has recommended conditions to address the matters raised by DPI.

Catchment Management Authority Hunter-Central Rivers (CMA) advised that it was unable to properly assess or support the Project as there was insufficient detail on the proposed biodiversity offset package.

The CMA also raised concerns regarding the potential impacts of freshwater runoff on the surrounding wetlands, international migratory shorebirds and threatened and endangered species such as the Australasian Bittern and Eastern Grass Owl. The CMA also raised concerns about the proposed clearing of EEC's, the combined impacts of flood level increases and sea level rise and the consistency of the Project with the Hunter-Central Rivers Catchment Action Plan.

These matters are addressed in Section 5 of this report and through the recommended conditions.

NSW Rural Fire Service (RFS) did not object to the Project and recommended a number of standard conditions regarding access and water, electricity and gas which are to be compliant with the RFS guideline, *Planning for Bushfire Protection 2006.* The Department has included these requirements in the recommended conditions.

Hunter Water Corporation (**HWC**) did not object to the Project and advised that there is sufficient capacity in the current water supply and wastewater systems to service the development.

4.3 Public Submissions

Of the three public submissions, one objected to the Project citing an inadequate road network and existing unacceptable traffic delays. The two other public submissions did not object to the Project but raised concerns regarding drainage and traffic. These submissions noted that the adjoining Redlake (Westrac) development had altered drainage patterns causing problems for adjacent low lying land, and were concerned that the Project may further exacerbate these issues. The submissions also cited existing traffic congestion problems along Tomago Road and the potential for further congestion from construction and operation of the Project.

Consideration of these issues is included in Section 5 of this report.

4.4 Special Interest Groups

Port Waratah Coal Services (PWCS) noted its support for the Project provided NEH manages stormwater and flood flows such that there is no adverse impact on the adjacent PWCS land (Lot

1002). PWCS noted that Lot 1002 has high conservation significance with EEC's and habitat for Commonwealth and State listed threatened species. PWCS noted the importance of:

- maintaining existing freshwater flows to the PWCS land, post-development;
- confirming that the predicted increase in flow velocities during peak flood events would not adversely impact on the conservation values of the PWCS land; and
- maintaining legal access to the PWCS land.

The Department has addressed these issues in Section 5 of this report and through recommended conditions. PWCS reviewed the draft conditions and requested further consultation on the wetland management conditions, which has been incorporated into the recommended conditions.

National Trust of Australia (NT) raised concerns that the Project would degrade the historical setting of Tomago House and Chapel and worsen the existing drainage problems. NT also noted a lack of consideration for providing appropriate screening vegetation between Tomago House and Chapel and the Project. These matters are addressed in Section 5.6 of this report.

Tomago Aluminium (TAL) advised that the Project site is located within an environmental buffer zone with specific constraints on fluoride and sulphur dioxide emissions. TAL noted that the EA had not explored the constraints that were identified in the Cumulative Environmental Impact Study for the Tomago industrial area that were established to protect local air quality. TAL recommended that any conditions of approval take account of these constraints and that future industrial tenants are informed of the constraints on air emissions. The Department has recommended conditions to ensure that the requirements of the buffer zone are implemented.

Hunter Bird Observers Club (HBOC) objected to the Project on the basis that it would put the Eastern Grass Owl at risk of extinction and that the EA did not consider the potential impacts of sea level rise on coastal wetlands. HBOC also raised concerns about the level of filling proposed in close proximity to wetlands of high conservation value, including the Ramsar wetlands and the PWCS land. These matters are considered in Sections 5.3 and 5.4 of this report.

The Department has fully considered the issues raised in all submissions in its assessment of the Project.

4.5 Proponent's Response to Submissions

In December 2012, NEH provided a response to the issues raised in submissions (see Appendix C). The response included:

- clarification and additional information regarding issues raised;
- additional technical information on stormwater and flooding;
- the addition of a 3 metre wide drainage corridor along the site's western boundary to improve drainage and provide some flood mitigation to adjacent industrial properties;
- site cards registering the Aboriginal artefacts identified on site;
- a commitment to retain ownership of both Gunner Heritage Park and Riverside Park; and
- agreement to amend some aspects of the drainage reserves and landscaping to lessen the maintenance burden on Council.

The RTS was placed on the Department's website and referred to key agencies for comment (as discussed above).

4.6 Supplementary Information

During its assessment of the Project, the Department requested further information from NEH to clarify matters regarding regional flooding impacts, localised flooding and stormwater management. Copies of this supplementary information, which the Department has considered in its assessment of the Project, are provided in Appendix B.

5. ASSESSMENT

In assessing the merits of the Project, the Department has considered:

- the EA, submissions, the Proponent's RTS and additional technical information provided in May 2013 and November 2013 (refer to Appendices B, C, D and E);
- the relevant environmental planning instruments, guidelines and policies;
- the objects of the EP&A Act, including the object to encourage ecologically sustainable development; and
- the relevant statutory requirements of the EP&A Act & Regulation.

The Department considers the key issues relate to flooding, stormwater and drainage, wetlands, biodiversity and heritage. The Department's assessment of other issues, including traffic, noise, air quality, acid sulphate soils, contamination, development contributions, open space and landscaping is provided in Table 4.

5.1 Flooding

Existing Conditions

Local context

The site is located wholly within the floodplain of the Hunter River and is situated on the left bank of the North Arm of the river. The site is low-lying with parts of the site acting as floodway and flood storage during infrequent flood events (as classified in the *Floodplain Development Manual 2005*). The area of the site closest to Tomago Road is classified as flood fringe, as this is the highest part of the site.

Figure 6 shows the existing flood depths across the region during a 1 in 100 year flood event [1% Annual Exceedance Probability (AEP)]. As shown in Figure 6, the site would be inundated by flood waters by up to 2.8 metres Australian Height Datum (m AHD); for comparison, existing site levels range from 0.5 to 0.8m AHD. The south-western part of the site that abuts the river acts as a floodway, with water flowing across this area during large flood events. The remainder of the site acts as flood storage, where water ponds and slowly drains over a period of days once the peak of the flood event has passed. Flow velocities during the 1% AEP are typically 0.5 metres/second (m/s).

During smaller, more frequent flood events, such as 1 in 10 year (10% AEP), a levee and two floodgates along the river bank protect the site from flooding by preventing backwater inundation. The location of the levee and floodgates is shown on Figure 11. On the site, the levee ranges from 1.4m to 1.7m AHD.

Regional context

The site is located in the lower reaches of the Hunter River, downstream of Hexham Bridge. This part of the river system is tidal and forms part of the Hunter Estuary. The region is subject to significant flooding with the largest flood recorded in 1955. After this flood event, the Hunter Valley Flood Mitigation Scheme was installed, involving the establishment of 160km of levees, spillways, control banks, floodgates and drainage channels.

Figure 6 shows the depth of inundation across the region during a 1% AEP, indicating that the wetlands on Kooragang Island are inundated up to 3m in depth. The Hexham Swamp area is inundated by between 3-4m. The industrial areas of Hexham around the Pacific Highway and the railway lines are built up and would experience flooding in the order of 1-2m in the 1% AEP (although some properties are built above the 1% AEP level). To the east of the site, flood depths are in the order of 1-2m, consistent with levels on the site.

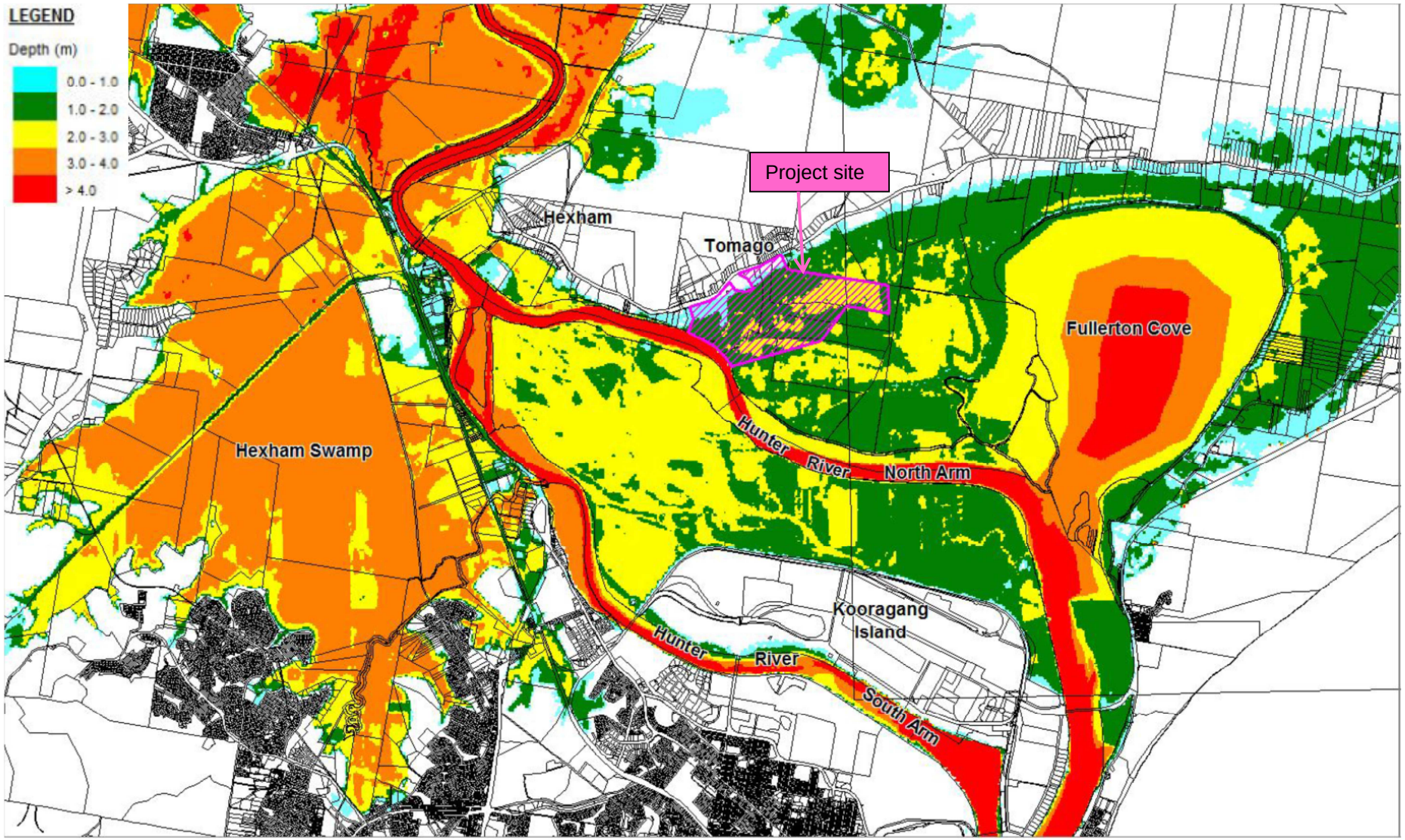

***Figure 6**: Existing regional flood depths during 1% AEP*

Impacts of the Project

NEH proposes to place large quantities of fill material on the site to raise it above the 1:100 year (1% AEP) flood level (to a minimum of 3m AHD) to protect future industrial businesses on the site. Some areas of the site would be filled to 4.5m AHD to assist with internal site drainage. The design also includes a perimeter berm along the south-eastern site boundary at 1.2m AHD to manage drainage and stormwater flows to adjacent wetlands. The Project would essentially stop the site from acting as flood storage during large flood events, thereby removing 154 ha of flood storage from the floodplain. This floodwater would be dispersed elsewhere across the floodplain during large flood events.

BMT WBM carried out flood modelling as part of the EA for the Project by updating the flood model developed by BMT WBM for Port Stephens Council's *Williams River Flood Study, 2009.* BMT WBM's modelling included the relevant parts of both Port Stephens and Newcastle local government areas. The modelling included consideration of the filled area associated with the approved 'Redlake' Industrial Estate immediately north of the site and considered sea level rise and climate change to determine the cumulative impacts of filling on the floodplain. The modelling was carried out to determine:

- the development potential of the site, with respect to flooding constraints; and
- the off-site flooding impacts of the Project.

In relation to the first point, NEH modelled a range of development scenarios and determined the extent to which they could fill the site to achieve an 'acceptable' flood level increase. NEH and BMT WBM determined that an acceptable flood level increase would be +40mm (0.04m) to the flood fringe of Hexham Swamp, some 8km from the site during the 1% AEP. The modelling also considered development scenarios that would have no adverse (i.e. increase) flood hazard impact on properties immediately upstream of the site.

On this basis, NEH proposes to fill 154 ha of the total site area of 241 ha (~64% of the site). NEH proposes to avoid the majority of the area categorised as 'floodway' and retain approximately 70 ha (or ~29%) immediately adjacent to the river as 'flood mitigation' including 10 ha of overflow wetland and areas for backwater ponding during flood events (see Figure 11). Other retained areas include 17 ha of biodiversity offset. All these areas would act as flood storage during flood events.

Localised flooding

The modelled increase in flood levels across the region from filling 154 ha on the site is shown in Figure 7. The areas most impacted include land immediately adjacent to the site to the south and west, experiencing between 0.1m to 0.2m increase in flood levels during the 1% AEP. Peak flow velocities would also increase from 0.5m/s to 1.1m/s across the historical flood runner in the south of the site and across the adjacent PWCS land to the east. ADW Johnson, who undertook the drainage assessment for the Project and compiled the RTS, concluded that this velocity increase would be non-scouring. The RTS nominated a 3 metre setback from the properties on the western site boundary to improve drainage and minimise the predicted flooding impacts.

The Department requested further analysis of these localised flooding impacts to determine the relative magnitude of the impacts and the need for mitigation. Some additional information was provided in the RTS and NEH commissioned BMT WBM to undertake further modelling which was submitted in May 2013 (see Appendix B). The additional analysis concluded that five properties located immediately to the west of the site would experience flood level increases of up to 180mm (0.18m), over the existing 1m inundation during the 1% AEP event and that mitigation would be required to protect these properties. The Proponent adopted BMT WBM's recommendation to design and construct a levee to adequately protect these properties and noted that the levee would not be required until Stage 3 of the Project, when the impacts to neighbouring properties would materialise. In subsequent correspondence, the Proponent agreed that the levee could be constructed prior to commencing any construction works on site, and prior to the predicted impact occurring during Stage 3.

BMT WBM also carried out a flooding and drainage assessment to determine the potential impacts of the Project on local flood conditions. The assessment concluded that construction of a perimeter berm along the eastern and southern site boundary (described in Section 5.2 of this report) would increase flood levels during the 1% AEP by 100mm on the adjacent PWCS land. The PWCS land would already be inundated up to 3m in depth during the 1% AEP. Consideration of the potential impacts on these wetlands is discussed in Section 5.3 of this report.

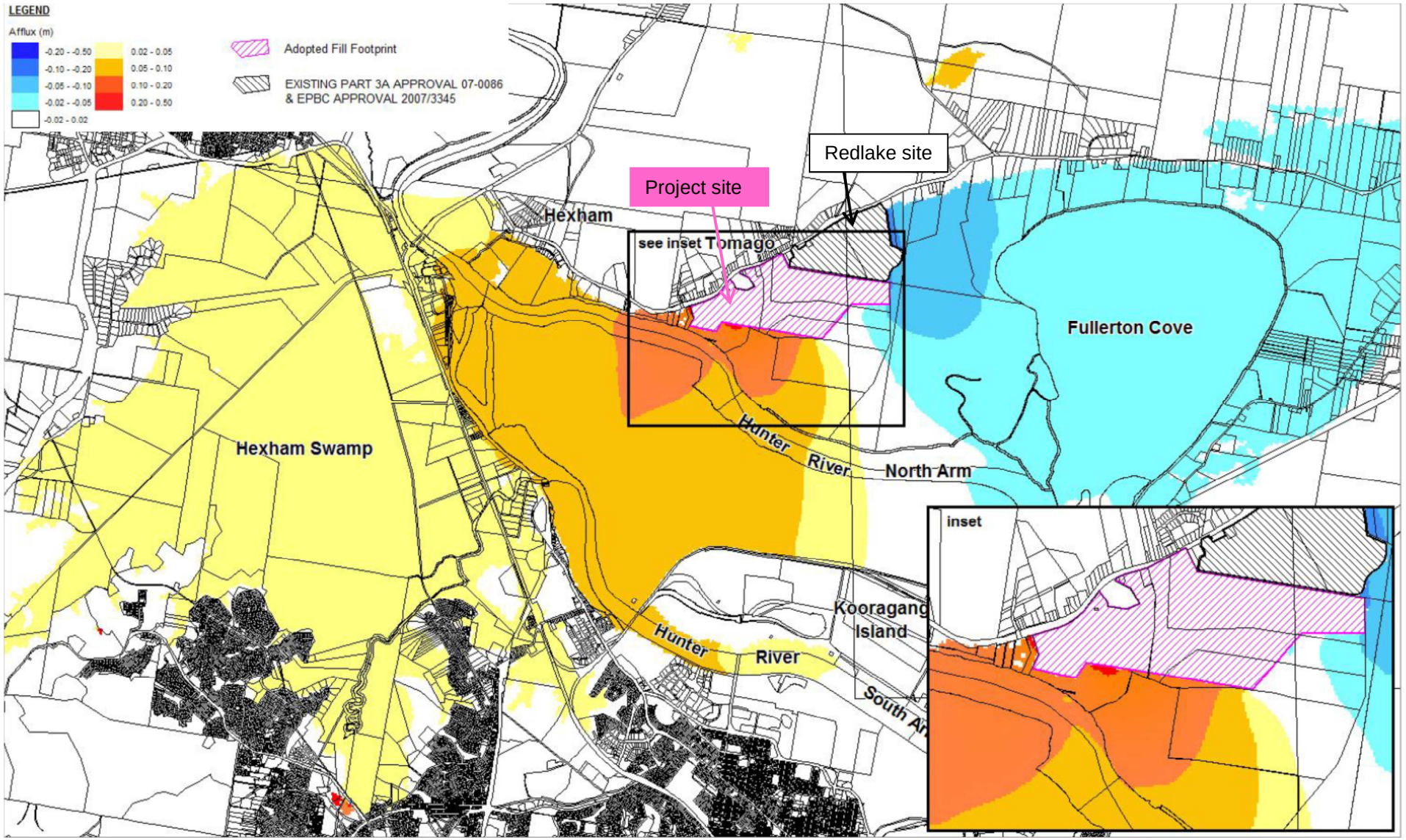

***Figure 7**: Predicted regional flood depths during 1% AEP as a result of the Project*

Regional flooding

With respect to broader flooding impacts across the region, BMT WBM predicted the increase in flood levels and flow velocities as a result of the Project for a range of flood events, including the 1%, 2% and 5% AEP.

As shown on Figure 7, BMT WBM predicted that the Project would increase flood levels by:

- between 50mm (0.05m) and 100mm (0.1m) in the 1% AEP across the northern part of Kooragang Island, Hexham Island and some industrial properties east of Maitland Road; and
- between 20mm (0.02m) and 50mm (0.05m) in the 1% AEP across the broader Hexham Swamp.

Flow velocities were predicted to increase by less than 0.1m/s during the 1% AEP. BMT WBM concluded that these minor changes in flow velocity would not provide any significant scour risk or damage to existing vegetation.

The impact on flood levels and flow velocities for the 2% and 5% AEP events showed a similar pattern to the 1% AEP with reduced magnitudes. During the 2% event, flood level increases of 27mm (0.27m) are predicted to the fringes of Hexham Swamp. During the 5% event, impacts would be limited to the PWCS land, with less than a 50mm (0.05m) flood level increase and no change to flood levels elsewhere on the floodplain.

Again, the Department requested further analysis of these regional flooding impacts to ascertain the number of properties that would be affected by flood level increases, the relative magnitude of the increases during the 1% AEP and the compatibility of these impacts with flood management policy. In particular, the Department advised NEH that the 'acceptable' flood level increase of 40mm (0.04m) adopted by NEH to guide the extent of development on the site was not consistent with the *Newcastle City-wide Floodplain Risk Management Study and Plan, 2012* (which set a cumulative level of 40mm within the catchment). This plan, which was authored by BMT WBM states:

> *"In this study the threshold of acceptable increase in water levels around the perimeter of Hexham Swamp was taken as 40mm.*
>
> *Accordingly, for the assessment at the 1% AEP Hunter River flood event, a cumulative impact of no more than a 40mm increase in flood levels was taken as the objective".*

In response, NEH commissioned BMT WBM to undertake further modelling of the regional flooding impacts, which was submitted in May 2013, see Appendix B. BMT WBM's further analysis considered two aspects:

1. assessment of cumulative development across the floodplain with respect to the acceptable 40mm increase in flood levels; and
2. identification of the extent and magnitude of property inundation caused as a result of the Project.

1. Cumulative Assessment

BMT WBM's cumulative assessment assumed development of all industrial zoned land in the Lower Hunter floodplain to a level above the 1% AEP. The predicted flood level increase as a result of cumulative development of all available industrial land parcels within the floodplain (including the Project) is 150mm (0.15m) across Hexham Swamp. For comparison, the flood level increase from cumulative development with the Project removed is 140mm (0.14m) across Hexham Swamp. Whilst the Project does not have a significant influence on flood level increases across Hexham Swamp when considered in the cumulative development scenario, it does influence flood levels across Ash Island and the Kooragang wetlands. BMT WBM concluded that the development of all industrial land parcels within the floodplain would be unacceptable from a development planning perspective.

The assessment further analysed the cumulative impacts drawing on information from studies that were carried out to inform the *Newcastle City-wide Floodplain Risk Management Study and Plan, 2012*. BMT WBM concluded that filling in the Hexham and Ironbark Creek industrial areas has the greatest influence on flood level increases. By removing industrial land in these areas from the model, BMT WBM demonstrated the extent of development that could occur within the floodplain to achieve the nominated flood level increase of 40mm for cumulative development (refer to Figure 8). When the Project is added to this development scenario, the increase across Hexham Swamp is approximately 70mm (the Project contributing 30mm), (refer to Figure 9). The Department notes that despite removal of land at Ironbark Creek and Hexham that has a greater influence on flood levels, the Project still has a considerable influence on flood levels across the region.

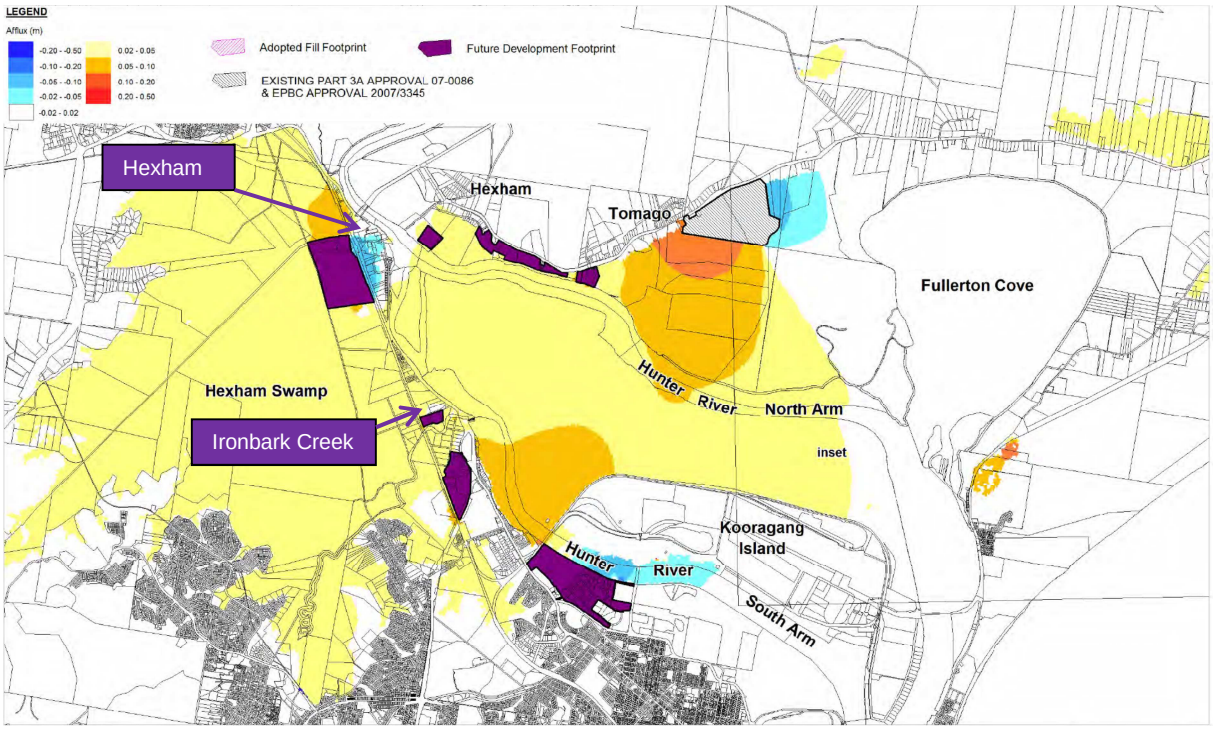

***Figure 8**: Predicted flood depths during 1% AEP – Cumulative development without the Project (Ironbark Creek and Hexham sites removed)*

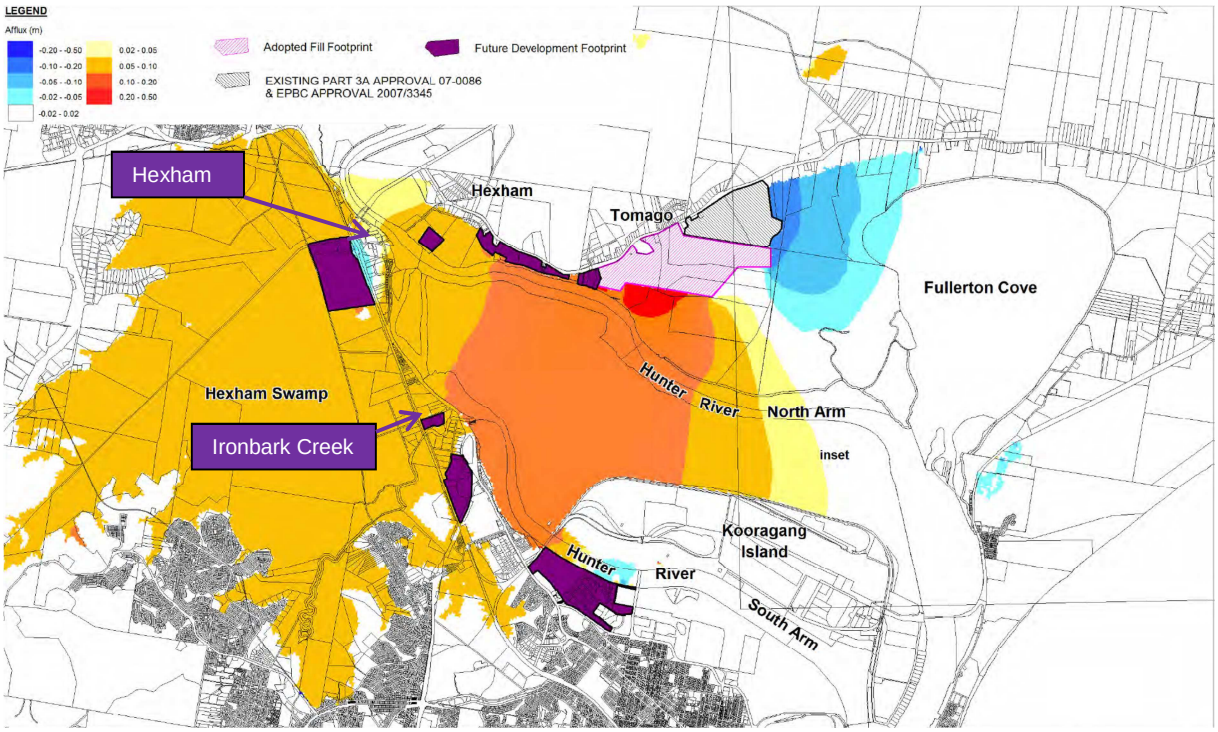

***Figure 9**: Predicted flood depths during 1% AEP – Cumulative development with the Project (Ironbark Creek and Hexham sites removed)*

2. Property Inundation

BMT WBM estimated the number of properties across the floodplain that have floor levels below the 1% AEP in order to estimate how many properties may be affected by flood level increases as a result of the Project. The estimate was based on cadastral property boundaries and the LiDAR digital elevation model of the Lower Hunter floodplain.

BMT WBM estimated that approximately **275** properties may be impacted by increased flood levels across the region as a result of the Project, comprising:

- 270 properties that may experience increased flood levels within the buildings, of these:
    - 210 are already inundated over 0.5m, therefore the incremental increase from the Project would be negligible; and
    - 60 would experience a measurable impact from the Project, as they are currently inundated by less than 0.5m, hence a 0.04-0.05m increase is more significant; and
- 5 **additional** properties would be affected by floodwaters within the building as a result of the Project alone (these were previously flood affected on the land only and not within the building).

The Proponent and BMT WBM did not identify any mitigation measures or compensation to address the identified impacts on the 275 properties.

Independent Review

The Department engaged two independent flooding specialists, Equatica[1] and WMA Water to assist in its assessment of the flooding impacts of the Project. Both specialists provided advice at various stages throughout the assessment, including comments on the EA, RTS and the additional flood impact assessment provided in May 2013. WMA Water concluded that:

- there would be no major change in the overall risk profile across the region due to the Project, however there would be a small increase, which was deemed to be acceptable;
- allowing a 40mm increase to a single development may set a precedent for other developments on the floodplain; and
- a 40mm increase would have a significant cost penalty to the estimated 65 buildings with floors inundated by less than 0.5m in the 1% AEP event. For example, if the 40mm increase means that the carpets, kitchen cabinets and electrical sockets just become inundated, this could translate to a large increase in damages in the order of several thousands of dollars.

WMA Water and Equatica gave near identical recommendations, that the most appropriate options for the development to proceed are to (in order):

1. reduce or modify the extent of filling to reduce the off-site flooding impacts; then
2. calculate the increase in average annual damages for the affected properties and provide suitable financial compensation or other mitigation measures.

Consideration and Recommendation

Localised flooding

WMA Water and Equatica commented on the proposed levee to protect the industrial properties to the west of the site. Both specialists noted that a levee is an acceptable flood mitigation measure, provided the affected landowners accept the construction of a levee on their land. The Department agrees and has recommended conditions requiring the Proponent to consult with the affected landowners to agree on the mitigation measures and implement them prior to the commencement of any construction works. NEH requested that the option to compensate the affected landowners also be included, should this be a preferable solution for all parties. The Department acknowledges that as the affected properties are already subject to inundation (up to 1m), financial compensation may be preferred by these landowners to avoid the need for physical works on their land. The Department is satisfied that the recommended conditions would ensure that the five affected landowners are adequately protected from or compensated for flooding impacts from the Project.

Regional flooding

From a review of the EA, RTS and additional flood impact assessment, the Department notes that the Project would take up the full 40mm acceptable cumulative flood level increase on its own. This could either:

- constrain any future development on the floodplain; or

[1] Equatica were engaged to advise on stormwater and flooding issues and WMA Water were later engaged to provide additional technical expertise to resolve the flooding issues.

- establish a precedent for future development, thereby resulting in up to a maximum 150mm flood level increase across Hexham Swamp.

The Department considers that the development as proposed would have impacts that are inconsistent with the *Newcastle City-wide Floodplain Risk Management Study and Plan 2012*.

The OEH also advised that it was unlikely to grant consent to the full development under Section 256 of the *Water Management Act, 2000* (WM Act). Section 256 requires consent from the Minister for the Environment for construction of a flood work on the floodplain of the Hunter River. The intent of this section is to provide the Government with a role in respect of development on floodplains, to ensure that development is not permitted if it has the potential to adversely affect other land on the floodplain, and to manage the cumulative impacts of floodplain development and filling.

The Department engaged in discussions with the Proponent, BMT WBM, OEH and WMA Water to find an outcome that would result in acceptable regional flooding impacts. As recommended by WMA Water and Equatica, the Department first sought to modify the development to reduce its impact. The Department requested that the Proponent revise the extent of proposed filling, noting that there is no requirement for industrial development to be built above the 1% AEP flood level. In addition, the Department stated that components of the development could be below the 1% AEP, such as parks and roads, which would reduce the off-site flooding impacts. However, NEH raised concerns about reducing the development footprint any further, citing a need to provide certainty to future industrial tenants that they would have adequate flood protection and to enable the development to achieve the design requirements for stormwater management. NEH also noted that it had already drawn back on the development footprint by providing the overflow wetland and backwater ponding areas in the southern part of the site, as well as a 17 ha biodiversity offset on the site (see section 5.4).

The Department accepted that NEH was unable to further modify its development to minimise flooding impacts and acknowledged that the area impacted by the Project is already subject to significant inundation. Therefore the Department's objective was to establish the level of contribution from the Project that would be appropriate. The Department consulted with OEH and reviewed the approach established for recently approved projects in the Lower Hunter floodplain, being the ARTC Hexham Relief Roads (train line duplication) and the Aurizon Train Support Facility at Hexham. OEH advised that it had worked with the Department and the proponents to limit impacts to 20mm, with the proponents required to negotiate with affected parties for impacts over and above 20mm. Both of these projects were modified to reduce the off-site flooding impacts to a 20mm increase for the 1% AEP event. Neither project approval provided scope for compensating landowners, however the impact of these projects was limited to 1 or 2 residences in each case, therefore mitigation was considered a more reasonable outcome.

To ensure a consistent and equitable consideration of the flooding impacts of development in the Lower Hunter floodplain, the Department considered it appropriate to adopt a 20mm flood level increase as the appropriate level of contribution for the Project.

The Department requested that NEH provide modelling information to demonstrate the level of fill across the site that would result in no more than a 20mm increase in regional flood levels in the 1% AEP. In November 2013, BMT WBM provided a figure (refer to Figure 10) showing the extent of filling that would result in a 20mm increase in off-site flooding. This filling extent is now referred to as Stage 1 and covers an area of approximately 55 hectares. This modelling also includes the cumulative effects of the development with the adjacent approved Redlake Industrial Estate (shown in grey hatching).

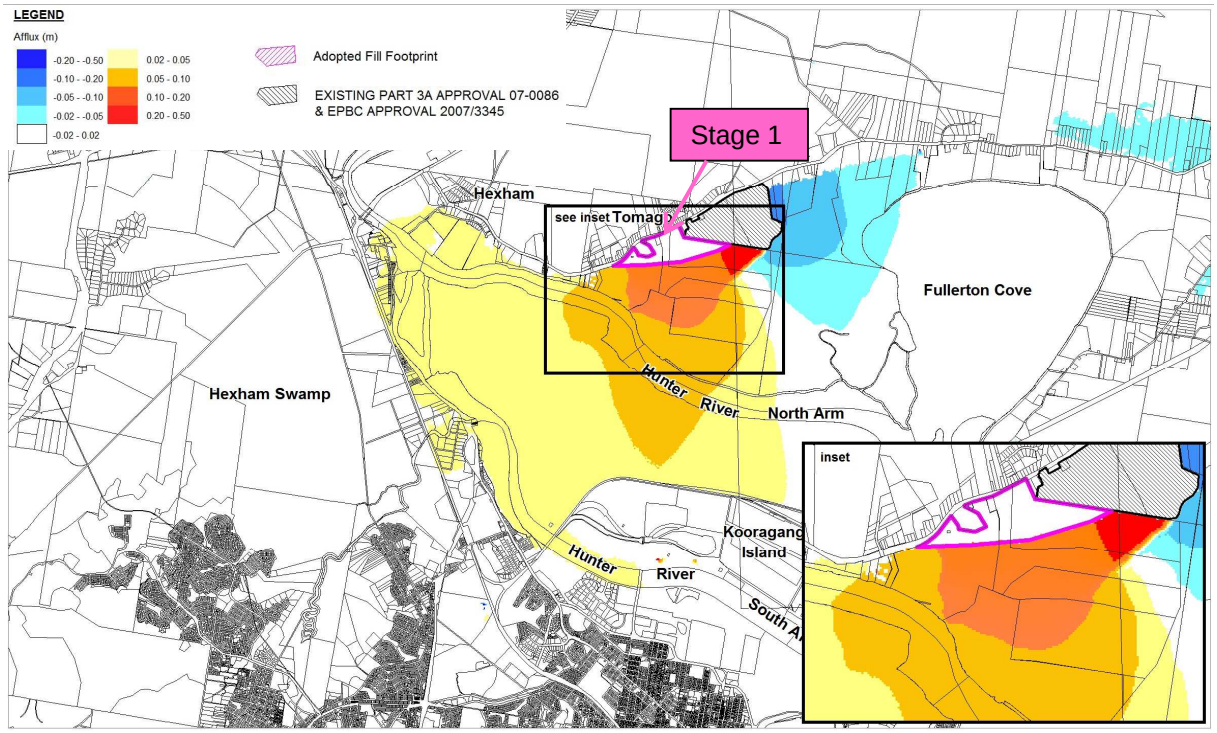

***Figure 10**: Extent of fill resulting in off-site flood level increases of 20mm during the 1% AEP (Stage 1)*

The Department agreed that Stage 1 works could proceed without requiring any further flood modelling, mitigation or compensation, consistent with the approach applied to the ARTC and Aurizon projects. In its review of the draft conditions, OEH noted that whilst the predicted 20mm increase affects a number of residential properties along the Pacific and Old Pacific Highways, the majority of the increase is likely to be attributable to the approved Redlake project. Hence OEH advised that if this is confirmed, it would be prepared to recommend that consent be granted under Section 256 of the WM Act for Stage 1.

The Department is satisfied that approval can be granted for Stage 1 and that the development of Stage 1 would be consistent with the *Newcastle City-wide Floodplain Risk Management Study and Plan 2012* and other recently approved developments on the Lower Hunter floodplain.

The Department recommends that any subsequent stages should be subject to detailed flood verification modelling and flood mitigation or financial compensation for landowners affected above a 20mm increase, consistent with the approach for the ARTC and Aurizon projects.

Initially, the Proponent maintained that the Project should be able to take up the full 40mm cumulative increase given its strategic importance as employment land, without the need to provide compensation. The Department maintained that the impacts must be mitigated or compensated for, and engaged NEH in extensive consultation with the assistance of WMA Water, to understand how compensation could be applied. WMA Water advised that the *Floodplain Risk Management Guideline (Residential Flood Damages), March 2006* provides an established method for calculating residential flood damages, which could be utilised for calculating the incremental flood damages attributable to the Project for the purposes of paying compensation. WMA Water also advised that whilst the guideline would assist in establishing the level of damages, in WMA Water's experience, it had not been used in such a way for the provision of broad scale compensation. Notwithstanding, WMA Water advised that independent experts routinely use the guideline to calculate residential flood damages and this approach has been applied to establish the level of mitigation that is to be applied to landowners affected by Pacific Highway upgrade projects.

Notwithstanding, the Department sought to find an appropriate way forward for considering the remaining stages of the Project. In response, the Proponent agreed to provide compensation in accordance with the *Floodplain Risk Management Guideline (Residential Flood Damages), March 2006*, but initially stated that this should only be applied to the most affected properties, being the 5 properties that would be inundated as a result of the Project alone.

The Department considered this approach to be unacceptable, as it would allow the flooding impacts of the Project to proceed without appropriate mitigation or compensation for many properties. In essence, approximately 270 properties would experience flood level increases (and corresponding increases in damages) as a direct result of the Project without any recourse to compensation. This approach is inconsistent with that applied to other projects on the floodplain and to development in general. The Department referenced numerous infrastructure projects, such as Pacific Highway upgrades, where significant effort has been expended to minimise, mitigate and compensate for flooding impacts. Indeed the Proponent has accepted such an approach for the biodiversity impacts of the Project, by providing a formal conservation offset for the Project's impacts (see Section 5.4). The Department considers the need to mitigate or compensate for flooding impacts to be no different from the approach taken for other aspects of the Project.

In the Department's consideration, it was important to evaluate the magnitude of impacts from the Project in the context of existing flood levels. As noted above, much of the area is already subject to significant inundation, with approximately 210 of the 275 identified properties subject to inundation greater than 0.5m in the 1% AEP event and in some cases properties are inundated up to 4m in depth. In the Department's view, and as demonstrated by the guideline for calculating residential flood damages, the incremental increase of 20mm or 40mm to these properties would be minimal as the flood damage would already be substantial, with water inside the building, above the electrical sockets, over carpets and inside kitchen cabinets. NEH advised that compensation for these properties would be in the order of $250, where the total flood damages under existing conditions would be tens of thousands of dollars. For this reason, the Department acknowledged that the additional increase from the Project for these properties, when calculated as 'residential flood damages' would be minor.

WMA Water advised that the most measurable impact would be experienced by properties that are currently only moderately affected by floodwater, by less than 0.5m or those that are currently not inundated at all. As noted above, for the Project this is estimated at 60 properties that are currently inundated by less than 0.5m and 5 properties that are flood affected on the land only and not in the building. Consistent with the method for calculating residential flood damages, the Department considers these to be the most 'at risk properties' that would have the potential to experience a measurable increase in flood damages should the increase in flood levels from the Project mean that floodwaters now inundate their carpets, kitchen cabinets and electrical sockets. Given the potentially large number of properties estimated to be impacted by flood level increases greater than 20mm, the Department acknowledged that it would not be feasible to provide flood mitigation works for this many properties. Therefore, the Department concluded that NEH should be required to compensate landowners of the most affected 'at risk properties', as these would have the greatest potential for increased damage. The actual number of properties affected may be less than predicted, as the estimation involved conservative assumptions with regard to assumed floor levels.

The Department concludes that despite the strategic importance of the industrial development proposed by NEH, the flooding impacts of the Project need to be addressed. The Department fully explored the option of minimising the development footprint and develop below the 1% AEP for industrial development but acknowledged that NEH had drawn back on the development footprint to avoid areas of 'floodway' and to provide backwater ponding areas on the site. The remaining option was to establish an equitable and fair compensation package that reflected the scale of the Project's impact relative to existing flooding, utilising an established Government tool for calculating the relative flood damages.

As such, the Department has recommended stringent conditions for managing the flood impacts which must be met if the Project is to proceed beyond Stage 1. The conditions require the Secretary to be satisfied that the flooding impacts of subsequent stages are verified, that the impacts are communicated to affected landowners and that monetary compensation is paid, prior to progression to the next stage of development. Specifically, the recommended conditions include:

- verification of the regional flood level increases of subsequent Project stages (excluding Stage 1) by a qualified expert, undertaken to the satisfaction of the Secretary. The verification shall be undertaken in consultation with OEH, Newcastle and Port Stephens Councils and shall consider the actual impacts of the completed stage/s, the predicted impacts of each subsequent stage, the cumulative impacts of other development on the floodplain and detailed floor level surveys of 'at risk properties';
- where verification establishes that the Project will directly increase flood levels to existing 'at risk properties', the Proponent shall provide monetary compensation to the affected landowners;

- monetary compensation shall be calculated by a qualified expert in accordance with the *Floodplain Risk Management Guideline (Residential Flood Damages)* developed by the NSW Department of Natural Resources, March 2006; and
- implementation of a landowner consultation plan to explain the predicted regional flood level increases of subsequent stages of the Project relative to existing flood levels and the process for calculating and paying compensation.

Where the Proponent and landowners are unable to agree, the Secretary will have a role in resolving any disputes.

In its initial review of the draft conditions, OEH considered the proposed compensation to be inadequate in scope and application and likely to be unworkable. The Department acknowledges OEH's initial position and the advice of its specialist WMA Water, that a broad scale compensation package has not previously been applied for flooding impacts. The application of these conditions will certainly require expert consideration, time and resources to ensure an equitable and fair outcome. The Department considers that this has been adequately provided for in the conditions, requiring an independent expert to calculate residential flood damages, and notes that the Secretary has a role in resolving any disputes.

The Department also notes that the flooding assessment and the advice of WMA Water and Equatica agree that the Project would not result in a major change in the overall flood risk profile across the region. The site is located within the lower reach of the Hunter River and receives adequate warning time during a flood event due to the large area of catchment upstream of the site and the existing flood warning system that is in place. Whilst the Project would marginally increase flood levels across the region during a large flood event, it would not change the existing flood risk hazard of the region.

Notwithstanding, the Department discussed the draft conditions at length with OEH and the City of Newcastle (where the majority of flooding impacts would occur), to clarify the scope of the intended compensation and discuss how it could be implemented. OEH raised questions regarding consultation with affected landowners and how future landowners (that would not be eligible for compensation) would be made aware of the increased flood levels resulting from the Project.

In response, the Department clarified that all landowners within the Newcastle and Port Stephens local government areas (LGA) that are within the mapped area of the probable maximum flood, have an annotation on their planning certificate (issued under Section 149 of the EP&A Act) that they are in 'flood prone land' and can obtain further details from Council on the extent of flooding that affects their land. In the Newcastle LGA, landowners are able to obtain a Flood Information Certificate which provides detailed information on existing flood depths during the 1% AEP for Hunter River flooding and ocean flooding. The certificate also provides the required floor level for developments, being 500mm freeboard above the 1% AEP flood level. This information is periodically updated by Councils when revised flood modelling is undertaken. The Department understands that similar information is also available to landowners in the Port Stephens LGA.

The Department has recommended additional conditions to ensure that the flood information certificates are used during consultation with landowners receiving compensation, such that they have full knowledge of the existing flood levels on their land and are aware of the incremental flood level increase resulting from the Project. The Department has also recommended that at least 12 months prior to the commencement of any works beyond Stage 1, the Proponent prepare and implement a Landowner Consultation Plan to explain the predicted regional flood level increases, the process for compensation and the dispute resolution process that is available to landowners.

The Department has also recommended a condition requiring NEH to provide all flood modelling information (including the modelling undertaken for this assessment and from the verification study required for subsequent stages) to both Councils, to enable them to incorporate this information when they update the flood information that is available to current and future landowners. The Department is satisfied that these conditions would ensure that current and future landowners are consulted and informed of the flood level increase on their land as a result of the Project.

In reviewing the draft conditions, the City of Newcastle raised some questions regarding the contribution of the Project to the 40mm acceptable cumulative flood level increase identified in the *Newcastle City-wide Floodplain Risk Management Study and Plan*. The Department acknowledges that the completion of all Project stages is predicted to take up the full 40mm cumulative increase.

The Department acknowledges the goal set by the City of Newcastle for managing cumulative flood level increases and has considered the Project in the context of this goal. Firstly, the Department notes that the flooding assessment has adopted a conservative approach in estimating that the Project will take up the full 40mm cumulative increase. Accordingly, the number of properties and the extent of flooding impacts may in fact be less than predicted. In addition, the stringent conditions recommended by the Department also include measures to verify the potential cumulative impacts as the project develops over time. Secondly, the Department recognises the significance and need for the Project in terms of promoting the development of the Tomago Industrial Site, which has been identified since 2007 as strategic employment land. It is anticipated that the Project would generate more than 3000 jobs once fully operational, which is consistent with one of the key aims and objectives of the *Lower Hunter Regional Strategy 2006-31* which relates to job generation. Finally, whilst the Department acknowledges Council's goal of limiting cumulative flood level increases to 40mm, the Department considers that the Project is of regional significance in terms of employment generation and notes that it has been designed to limit off-site flooding impacts to no more than 40mm. Notwithstanding, the Department has recommended a comprehensive compensation package to address the flooding impacts of the Project, including a substantial financial contribution to the improvement of regional flood warning systems.

Notwithstanding, following discussions with the City of Newcastle, the Department identified that NEH could make a further contribution to compensating for the flooding impacts of the Project by contributing to the specific actions identified by the City of Newcastle to minimise flood risk in the region. The *Newcastle City-wide Floodplain Risk Management Study and Plan* identifies a number of actions for minimising flood risk and specifically, the need for completing the early flood warning system for Newcastle that includes flash flooding, river and ocean flooding and effective broadcasting of information and warnings through multi and social media channels. The plan identifies this as one of the priority actions for the first 5 years and estimates the cost at $350,000 to design, update and complete the early flood warning system. A complete early warning system allows residents sufficient time to appropriately respond in a flood event, thereby minimising the overall risk to life and property.

Whilst the Project alone does not increase the overall flood risk profile of the region, its impacts (through increased flood levels) are regional, extending to the fringes of Hexham Swamp, some 8km from the site. Therefore, the Department considers it appropriate that NEH contribute to reducing flood risk across the region through the provision of $350,000 in funding to the City of Newcastle, to implement the complete flood warning system for Newcastle. OEH accepts this recommendation.

The Department is satisfied that it has explored all reasonable and feasible options to minimise the flooding impacts of the Project and has established a set of conditions that would adequately mitigate and/or compensate for the Project's residual flooding impacts. The Department acknowledges that the area impacted by the Project is already subject to significant inundation (up to 4m) and an increase of 40mm would be insignificant for many properties. The Department is also satisfied that the proposed method for compensating landowners is an established Government policy for this purpose and that the recommended conditions provide for thorough and comprehensive consultation with affected landowners. The Department also notes that incremental increases in flood levels on the floodplain from other activities may not result in any compensation, while the Department's recommended conditions would provide a level of compensation to offset the Project's potential impact. The Department is also confident that the recommended conditions would contribute to reducing the overall flood risk in the region by requiring a substantial contribution from NEH toward the provision of a complete early flood warning system for Newcastle as identified in the *Newcastle City-wide Floodplain Risk Management Study and Plan*. OEH has subsequently advised that it accepts the recommended conditions.

The Department notes that whilst the recommended conditions provide an acceptable solution for addressing the residual flooding impacts of the Project, the Proponent is still required to obtain consent from OEH under Section 256 of the WM Act. The Department has included this requirement in the recommended conditions.

5.2 Stormwater and Drainage

Existing Site Conditions

As discussed in Section 5.1, the site is low-lying and flood prone, which presents substantial challenges for managing water flows from the Project. Many submissions raised stormwater

management as a key issue for the Project, both in terms of the quality of stormwater flows discharged from the site and the management of the increased volume of stormwater flows resulting from the Project.

As raised in submissions from OEH, EPA, Council, Hunter-Central Rivers CMA and PWCS, the key issues for stormwater management relate to:

- impacts on adjoining land upstream, for example, the ability of upstream properties to freely drain such that nuisance flooding does not occur on these properties; and
- impacts downstream of the site, such as the adjoining wetlands and the Hunter River.

The site is located on low-lying, flat land with minor drainage channels that discharge water to the Hunter River via the two existing floodgates on the riverbank. Immediately upstream to the north are industrial properties, including the partially constructed Redlake Industrial Estate, which are built above the 1 in 100 year flood level and include constructed drainage.

Downstream of the site, to the east and south-east are wetlands of international and State importance. The wetlands are separated from the site by a 'north-south drain', which runs from the Redlake development north of the site to the Hunter River in the south. 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 River is located immediately to the south of the site and 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 the site shows elevated nutrients and sediments.

The management of stormwater from the Project is imperative for the protection of adjacent land from nuisance flooding and protection of the adjacent wetlands from alterations in hydrology and water quality.

Impacts of the Project

BMT WBM prepared a stormwater assessment for the Project, considering the potential impacts of the Project on water quality and quantity to inform the proposed design of the stormwater management system.

In relation to water quality, BMT WBM noted that the Project has the potential to increase pollutants in stormwater runoff, such as nutrients, sediments, hydrocarbons, heavy metals, oils and greases and gross pollutants such as debris and organic matter. BMT WBM noted that the stormwater system for the Project would be required to achieve the pollutant reductions for new developments in sensitive catchments as prescribed by Port Stephens Council's *Urban Stormwater and Rural Water Quality Management Plan 2003*.

In relation to water quantity, BMT WBM estimated that the Project's expected increase in impervious area from 0% to 80% would translate to an estimated increase of 793 megalitres/year (ML/yr) in runoff (with reductions in baseflow accounted for).

In order to minimise water quality impacts and effectively manage the increased volume of stormwater, NEH proposes to install a stormwater management system (see Figure 11) comprised of:

- gross pollutant traps, to capture large pollutants such as litter and organic debris;
- grassed swales, to filter medium sized sediments;
- bio-retention units, to filter smaller sediments and nutrients;
- four drainage channels, with low gradients and wide cross-sections (between 28-41m) to slowly direct water to the existing floodgates and to store water during larger or prolonged rainfall events;
- a 700m long perimeter berm to prevent uncontrolled stormwater flows to adjacent wetlands. The berm would be between 2m AHD in the northern part of the site, grading to 1.2m AHD in the southern part of the site. The berm would include points for controlled discharges to the adjacent wetlands; and
- an overflow area in the southern part of the site to store flows during rainfall events, when discharge to the river is limited. The overflow area includes:
    - a 10ha overflow wetland rehabilitation area;
    - landscaped areas for backwater ponding; and

- unfilled areas between the river and the filled development for further backwater ponding.

The stormwater system would be implemented in stages to reflect the staged development of the site.

Both the EPA and Council requested further information on the proposed stormwater system in order to evaluate its effectiveness in managing flows from the site. In the RTS, ADW Johnson provided further clarifications and design drawings.

After review of the EA and RTS, the EPA and Council reiterated concerns regarding the potential impacts on upstream properties and the adjacent wetlands but provided recommended conditions for managing these impacts. Council also raised concerns regarding the potential maintenance burden of the stormwater management system and provided a number of recommended conditions including specific requirements for design and maintenance of the stormwater system.

OEH and EPA noted that the Project has the potential to impact on the conservation values of the Ramsar wetlands and PWCS land through the increase in freshwater flows. Discussion of these impacts is provided in Section 5.3.

Consideration and Recommendation

The Department's flooding consultant Equatica also reviewed the stormwater and drainage aspects of the Project. After reviewing the EA, Equatica requested further information to determine whether the proposed drainage system is feasible and whether it would impact on adjacent landowners. After review of the RTS, Equatica raised the following matters for consideration:

- it was not clearly established whether upstream landowners can freely drain through the site, particularly during smaller, more frequent rainfall events;
- it needs to be demonstrated whether the bio-retention units can freely drain, to ensure the objectives of the water quality strategy can be achieved; and
- it is not clear how the Project and the adjoining wetlands interact during smaller, more frequent rainfall events.

In line with Equatica's advice, Council noted that the Project should not impede or alter stormwater flows onto adjoining properties or create nuisance flooding. Council advised that it has received complaints regarding nuisance flooding since construction of the Redlake (Westrac) facility and advised that it would seek to avoid similar issues arising from this Project through appropriate conditions.

After consideration of the EA, submissions, RTS and Equatica's advice, the Department concluded that the Project has the potential to impact on adjoining landowners and wetlands if not stringently controlled and monitored. The Department acknowledges that the proposed stormwater design has the potential to minimise impacts to an acceptable level, but further detailed design information is required to ensure this occurs, as is on-going monitoring of the system once operational. Therefore, the Department has recommended conditions requiring NEH to demonstrate in detail how the stormwater system will:

- ensure post development flows do not exceed pre-development flows for a range of storm events (large and small); and
- adequately convey flows to avoid nuisance flooding on adjacent land; how this would be verified once operational and the mitigation measures that would be implemented if monitoring demonstrates that neighbouring land is being adversely impacted.

The Department agrees that Council should be involved in the detailed design of the stormwater system, given it is a non-standard system and Council would eventually take over the obligation of maintaining the system. Therefore, the Department has recommended a condition requiring NEH to consult with Council during detailed design of the system and ensure the design meets Council, EPA and ANZECC guidelines. The Department has also included Council's recommended conditions with respect to maintenance of the system. The design of the stormwater management system is to be approved by the Secretary prior to the commencement of construction.

Council and the EPA commented on the Department's recommended conditions and did not request any changes. The Department is satisfied that the conditions would ensure that the stormwater management system is appropriately designed and maintained to ensure that there are no adverse impacts on adjacent land or the Hunter River.

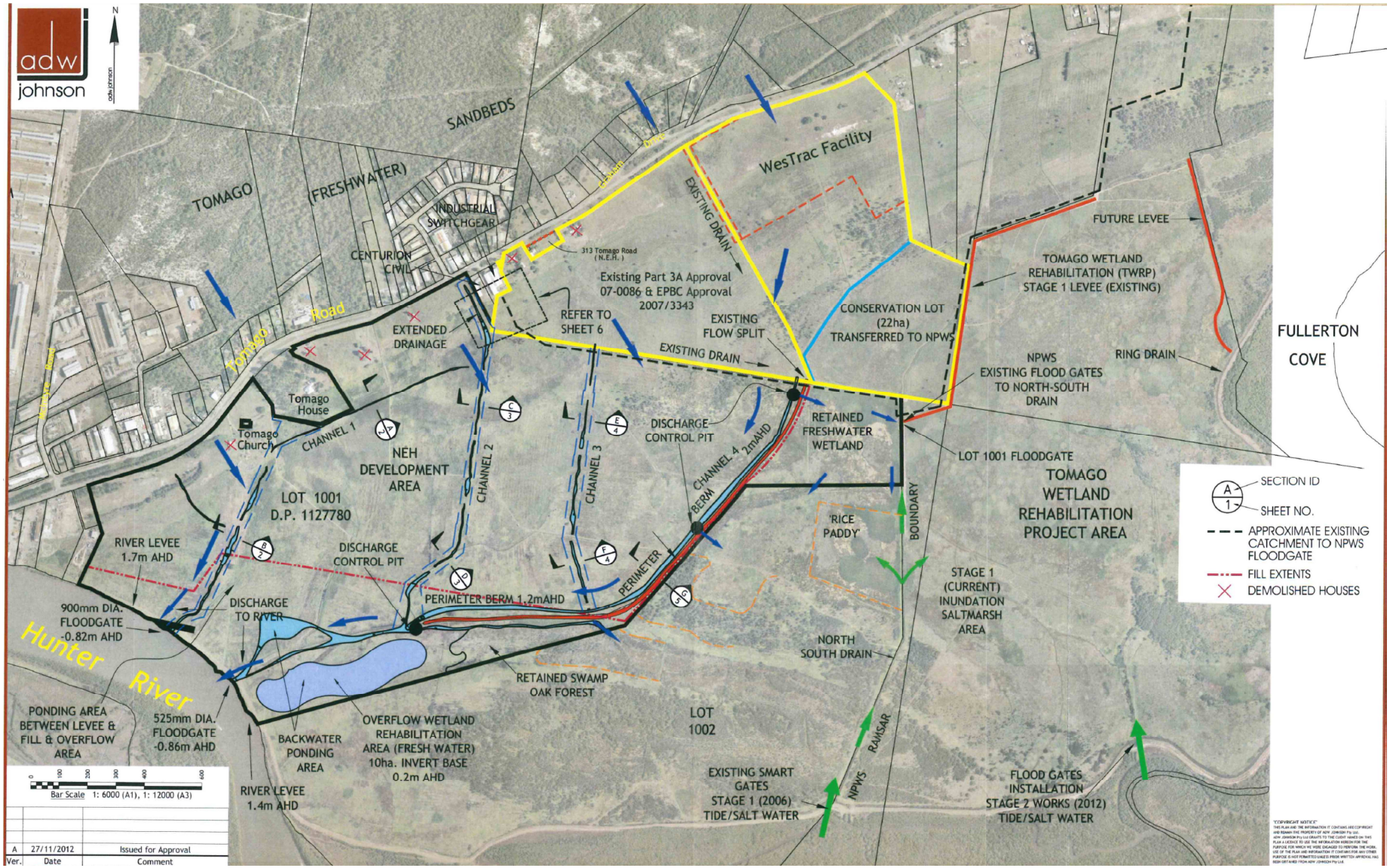

***Figure 11**: Proposed Stormwater Management System*

5.3 Wetlands

Existing Site Conditions

A series of wetlands of State and international importance are located immediately adjacent to the site, as shown on Figure 12. These include:

- wetlands of international importance (protected under the Ramsar convention) located on the eastern boundary of the site; and
- wetlands of State importance (listed SEPP 14 coastal wetlands) located to the south, east and west of the site. This includes the adjoining PWCS land (Lot 1002).

The Ramsar wetlands are contained almost wholly within the Hunter Wetlands National Park and are recognised as a significant area of conservation for migratory shorebirds, with a number of migratory birds recorded in this area listed under international treaties including the Japan-Australia and China-Australia Migratory Bird Agreements (JAMBA and CAMBA).

The SEPP 14 wetlands partly overlap with the Ramsar wetlands and the Hunter Wetlands National Park, however they also extend over a large area to the west, south and east of the site. A large part of the adjacent PWCS land to the south contains wetlands currently listed under SEPP 14.

The wetland areas surrounding the site are sensitive environments, and their ecological importance is not only demonstrated by their Ramsar and SEPP 14 listings, but also by the substantial funding provided by State and Federal governments to assist with their rehabilitation. This funding has facilitated the formation of the Kooragang Wetland Rehabilitation Project (KWRP) established in 1993, which aims to reinstate a tidal regime to the wetlands, which was lost following construction of the levee and drainage systems in the area in the 1970s. This has included installation of automated floodgates to permit tidal exchange, thereby allowing restoration of coastal saltmarsh to create habitat for migratory shorebirds. The Ramsar wetlands are separated from the site by the north-south drain. The SEPP 14 wetlands are connected to the site via the adjacent PWCS land.

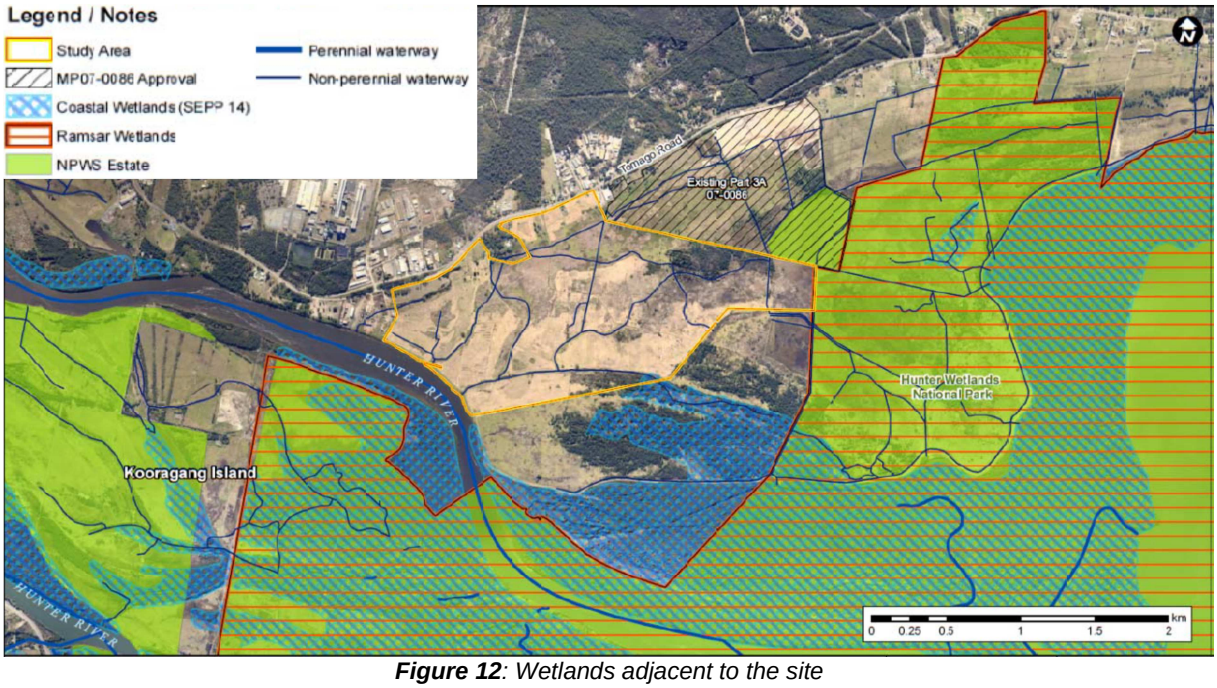

Figure 12*: Wetlands adjacent to the site*

The site itself contains two wetland systems, as shown on Figure 13, including:

- 75 ha of Freshwater Wetland Complex EEC located in the eastern and central parts of the site; and
- 20 ha of Swamp Oak Forest EEC, also listed on SEPP 14, located in the southern and north-eastern parts of the site.

NEH proposes to retain some of the wetlands as part of the biodiversity offsets for the Project (refer to Section 5.4), including:

- 12.5ha of Freshwater Wetland Complex EEC in the east, adjoining the Ramsar wetlands; and
- 3.4ha of Swamp Oak Forest EEC in the south, adjoining the SEPP 14 wetlands.

Protection of 12.5ha of Freshwater Wetland Complex EEC would provide a minimum buffer distance of 380 metres between the development and the Ramsar wetlands, see Figure 13.

Impacts of the Project

The Project has the potential to impact on the adjacent wetlands through:

- changes in local hydrology, including increased stormwater flows, flood damage to vegetation and alterations to wetting and drying patterns;
- increased freshwater flows to wetlands where tidal exchange is being promoted and potential impact on the re-establishment of coastal saltmarsh and migratory shorebird habitat;
- increased pollutants and nutrients in stormwater run-off from the site;
- sedimentation and erosion, particularly during extended earthworks;
- acid sulphate soil disturbance; and
- weed invasion.

The EA did not predict or quantify the extent of impacts that may occur to the adjacent wetlands but included a Wetland Interface Strategy which established the key objectives of having mitigated or resulting in no impacts on the adjoining wetlands.

ADW Johnson prepared the Wetland Interface Strategy, which describes the mitigation measures that would be put in place and the on-going monitoring and management to ensure they are effective. The strategy contains the following key elements:

- retain portions of the on-site wetlands to maintain a buffer between the development and the adjacent Ramsar and SEPP 14 wetlands;
- maintain existing hydrological pathways with post development flows mimicking pre-development flows;
- retain existing discharge points for surface water and groundwater flows to adjoining wetlands;
- provide adjustable outlets on each discharge point to enable NEH to:
    - control the volume of water that is released to the PWCS land;
    - provide flexibility in case monitoring results indicate a need to alter the flow of water; and
    - provide flexibility if there are modified wetland objectives for the adjacent lands.
- curb stormwater away from the wetlands toward the Hunter River via a perimeter berm and constructed drainage channels;
- manage run-off water quality through the proposed stormwater quality improvement devices; and
- provide an overflow wetland area in the southern part of the site.

Council, OEH, EPA, Fisheries and the CMA raised significant concerns regarding the potential for the Project to impact on the adjoining wetlands and the success of the KWRP. Whilst the agencies were supportive of the Wetland Interface Strategy, Council, OEH and EPA commented that it provided insufficient detail to demonstrate that stormwater flows could be managed to avoid impacts to the wetlands. PWCS also raised concerns about the potential flooding impacts on their land.

Additional drainage design information was provided in the RTS, showing the existing series of levees and floodgates in the adjacent wetlands and the proposed stormwater management system for the Project (as shown in Figure 11), including the location and height of the perimeter berm, the discharge locations through the berm and the overflow wetland and backwater ponding areas on the site.

After review of the RTS, OEH still had concerns with the drainage aspects of the Project and the potential impacts on the adjoining OEH conservation estate and Ramsar wetlands. Specifically, OEH noted that there should be clear responsibilities for the long-term and on-going monitoring of stormwater flows to the on-site Freshwater Wetland Complex as this would have the greatest effect on the adjoining Ramsar wetlands. OEH also noted that on-going consultation would be required with PWCS to ensure that the conservation objectives for the PWCS land are met, as the management regime for these wetlands is changing from freshwater to saltwater.

The EPA provided recommended conditions for ensuring that appropriate flows are maintained to the wetlands, that the Proponent undertakes routine monitoring and that results of monitoring are provided to relevant authorities.

Consideration and Recommendation

Given the complexity of the hydrology in the area, the proximity to wetlands of international and state importance and the issues raised by agencies, the Department engaged an independent expert (Equatica) to review the relevant technical information and consider the potential impacts on the adjoining wetlands.

Initially Equatica raised similar concerns to those of the agencies, that there was insufficient detail in the EA to determine whether the stormwater management system could operate as proposed. In particular, Equatica raised concerns that there could be frequent overtopping of the perimeter berm resulting in uncontrolled flows to the adjacent wetlands. On review of the RTS, Equatica noted that it was generally satisfied that this situation would occur infrequently and hence stormwater flows could be effectively managed.

Notwithstanding, Equatica concluded that there are a number of design aspects that would need to be carefully considered to achieve the objectives of the stormwater management and wetland interface strategies, and recommended that this information be required as a condition of approval.

In considering the submissions from various agencies and the independent review by Equatica, the Department concludes that the Project has the potential to impact on the adjoining wetlands if not strictly controlled and monitored. The Department notes that further detailed design information is required for the stormwater management system to ensure that the design meets the objectives of the Wetland Interface Strategy. The Department notes that OEH (NPWS) and PWCS manage the adjacent wetlands, with various other parties such as the EPA, CMA and Council having an interest in their management. The Department notes that active and on-going communication between all parties will be required to ensure the conservation objectives of the wetlands continue to be met.

Therefore, the Department has recommended a series of conditions to ensure that the wetlands are not impacted by the Project and that the relevant parties are involved through regular consultation. The Department recommends that:

- detailed design of the stormwater management system be prepared in consultation with Council and OEH (NPWS);
- the stormwater management system is approved by the Secretary prior to commencement of construction;
- the design must demonstrate that the objectives of the Wetland Interface Strategy can be met, such as post-development flows not exceeding pre-development flows;
- the stormwater system include detailed methods, plans and contingencies for the controlled release of stormwater to the adjacent wetlands; and
- the stormwater system include results of baseline monitoring, to ensure that post-development flows can be accurately measured against pre-development conditions.

The Department also recommends that NEH prepare and implement a Wetland Management and Monitoring Plan (WMMP) to ensure the integrity of the on-site and off-site wetlands is maintained. The WMMP must be prepared in consultation with OEH (NPWS) and PWCS and must detail the monitoring locations, frequency and duration for all stormwater (quantity and quality) discharged from the site. The WMMP is to also detail the trigger levels for adverse impacts and identify the range of contingency measures that would be implemented if monitoring results identify that the adjacent wetlands are being adversely impacted. The Department has recommended that the WMMP details the procedures for ensuring the maintenance of saline and/or freshwater flows to the PWCS land and can be adapted to respond to changes in conservation objectives. NEH is also required to consult with PWCS to ensure that any flooding impacts are appropriately managed to maintain the conservation objectives of the wetlands. The Department is satisfied that these recommendations address the residual issues raised by OEH and PWCS with respect to the long-term and on-going management of the wetlands.

The Proponent has also committed to the preparation of Weed and Acid Sulphate Soil Management Plans (discussed in Table 4) to mitigate other potential impacts on the wetlands. The Department has included these in the recommended conditions to ensure that they are prepared and reviewed prior to the commencement of construction.

The Department is satisfied that the commitments made by NEH, together with the recommended conditions of approval, would ensure that potential impacts on the adjacent wetlands would be minimised and appropriately managed.

5.4 Biodiversity

Existing Site Conditions

Ecobiological prepared an ecological assessment for the Project in accordance with relevant guidelines and undertook targeted flora and fauna surveys. The assessment identified that the majority of the 241 ha site contains exotic grasslands (141 ha), which were established as part of the past agricultural use of the site. The site also supports three endangered ecological communities (EEC's) listed under the *NSW Threatened Species Conservation Act 1995* (TSC Act), as shown on Figure 13, including:

- Freshwater Wetland Complex EEC (70 ha);
- Swamp Oak Forest EEC (14.8 ha) and 2.2 ha of regenerating Swamp Oak Forest EEC; and
- Swamp Sclerophyll Forest EEC (1.5 ha).

The ecological assessment found that five threatened flora species (listed on the TSC Act) were identified to have suitable habitat on site, namely, Trailing Woodruff, Noah's False Chickweed, Small Water-ribbons, Tall Knot-weed and *Zannichellia palustris.* Targeted field surveys for these species concluded they were not located on the site. Both the Department and OEH acknowledge and agree that it is unlikely that these species exist on the site.

Nine threatened fauna species (listed on the TSC Act) were identified on site (namely the Eastern Grass Owl, Little Bentwing-bat, Eastern Bentwing-bat, Southern Myotis, Eastern Freetail-bat, Greater Broad-nosed Bat, Eastern False Pipistrelle, Yellow-bellied Sheathtail Bat and Grey-headed Flying Fox), with suitable habitat also identified on site as potentially supporting an additional 23 threatened fauna species.

The Cattle Egret and White-bellied Sea-Eagle, two migratory shorebirds listed on the EPBC Act, were also recorded during field surveys of the study area.

Other threatened fauna species for which habitat is located on the site were also assessed, including the Green and Golden Bell Frog, Wallum Froglet, White-fronted Chat and Red-backed Button-quail. Five threatened waterbirds, including the Australasian Bittern and five threatened shorebirds were also assessed.

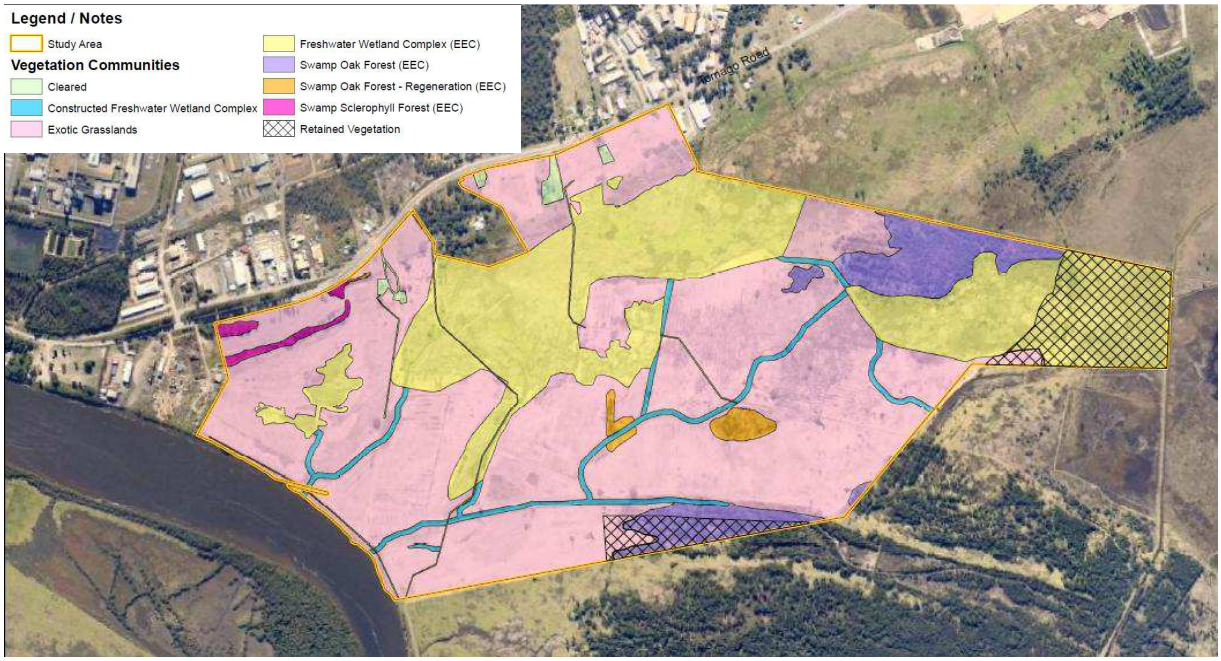

***Figure 13**: Vegetation communities on site*

Impacts of the Project

The Project would require clearance of around 214 ha of vegetation, including 73 ha of EEC's, and would comprise:

- 141 ha of exotic grasslands;
- 58.1 ha of the Freshwater Wetland Complex EEC (82% of the on-site community);
- 13.6 ha of the Swamp Oak Forest EEC, comprising 11.4 ha of EEC and 2.2 ha of regenerating EEC (80% of the on-site community); and
- 1.56 ha of the Swamp Sclerophyll Forest EEC (100% of this on-site community).

The direct impacts of clearing would also affect threatened flora and fauna species through the loss and fragmentation of habitat, indirect impacts of noise and dust and changes to hydrology (as discussed in Section 5.3).

Ecobiological carried out an assessment of significance in accordance with the TSC Act for the EEC's to be removed from the site and assessments under the TSC Act and EPBC Act for threatened flora and fauna species. The assessment concluded that the Project would not adversely impact on the viability of the EEC's or adversely impact on identified threatened flora and fauna. The assessment concluded that the habitat to be removed is marginal and isolated, and that better quality and similar vegetation communities are located in the adjacent wetlands.

Of the nine threatened fauna species known to utilise the site, OEH raised concerns over the loss of foraging habitat for the Eastern Grass Owl. Ecobiological undertook a survey of Eastern Grass Owls in the Newcastle region, identifying seven family groups within the region, including one group which utilises the Project site. The study also identified an estimated 20,624 ha of suitable habitat throughout the region. Ecobiological considered that in the local context, the removal of over 200ha of foraging habitat represents an estimated 0.01% loss of suitable habitat and whilst one group would be lost due to the clearing required for the Project, it is unlikely that the Project would reduce the long-term viability of the local population of Eastern Grass Owls. Notwithstanding, the Hunter Bird Observers Club and the CMA remained concerned over the impact on this species.

On consideration of this information, namely that the proposed vegetation removal equates to an estimated loss of only 0.01% of suitable habitat in the area, OEH confirmed that it supported the conclusion that the Project is unlikely to significantly impact on this species.

Of the 23 threatened fauna species for which the site contains suitable habitat, OEH raised concerns over the loss of and potential impact on the Australasian Bittern, which is known to occur in the adjacent wetland habitats. However, OEH noted that given the poor quality of the habitat located on the site, suitable compensatory habitat could be provided through a biodiversity offset.

Proposed Biodiversity Offsets

In the EA, the Proponent did not propose any biodiversity offsets for the identified clearing of EEC's or potential impacts on threatened flora and fauna. OEH and the Department identified early in the assessment process that a biodiversity offset package would be required for the identified impacts of the Project.

NEH initially did not agree that an offset package was required and purported that the adjacent Lot 1002 (now owned by PWCS) had been recognised as a conservation offset for the 241 ha of employment land purchased by NEH.

The Department reviewed the background to the strategic planning for the area including consultation with the former landowner Hunter Development Corporation (HDC) and confirmed that Lot 1002 was not intended to offset any clearing for NEH's Project. At the time, HDC advised that it was offering the land for sale and invited NEH to participate in the land disposal process. However, Lot 1002 was eventually purchased by PWCS.

This advice was then conveyed to NEH, which accepted the advice and sought to establish an alternative biodiversity offset package for the Project.

Firstly, NEH committed to retain key areas of wetlands on site that connect to the adjacent Ramsar and SEPP 14 wetlands, see Figure 13, including:

- 12.5 ha of Freshwater Wetland Complex EEC in the eastern part of the site;

- 3.4 ha of Swamp Oak Forest EEC in the southern part of the site; and
- rehabilitation of 1.1 ha of Swamp Oak Forest EEC in the southern part of the site.

Ecobiological then utilised OEH's Biobanking methodology to quantify the required offsets for the Project, taking into account the wetlands to be protected on site. Ecobiological determined that 2,081 ecosystem credits would be required to offset the impacts of vegetation removal (see Table 2). Once converted using the OEH's credit convertor tool, it was identified that 223.8 ha of land containing similar vegetation types would be required to offset the Project's impacts.

Table 2: *Ecosystem credits required by the Project*

Vegetation Community	***Area removed (ha)***	***Ecosystem credits***
Freshwater Wetland Complex EEC	58.1	1,466
Swamp Oak Forest EEC	11.4	525
Swamp Oak Forest EEC (regenerating)	2.2	31
Swamp Sclerophyll Forest EEC	1.5	59
Total	**73.2**	**2081 (approx. 223.8ha)**

Through on-going negotiations with the Department and OEH, the Proponent noted that there was not enough locally available land to provide a suitable offset, as it consists primarily of small and fragmented land parcels. NEH subsequently identified a 250.8 hectare parcel of land in Northern NSW with similar vegetation types for the purposes of a biodiversity offset. The offset site, referred to as Shark Creek, is located adjacent to the Pine Brush State Forest, some 30 km north-east of Grafton and 80 km south of Lismore (see Figure 14).

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 EEC's (including Freshwater Wetland Complex and Swamp Oak Forest);
- one threatened flora species *Maundia triglochinoides* (containing at least 29,500 individuals which equates to 16,608 species credits); and
- suitable habitat for the Black-necked Stork (an endangered species), which was seen during field surveys 800m to the east of the offset site.

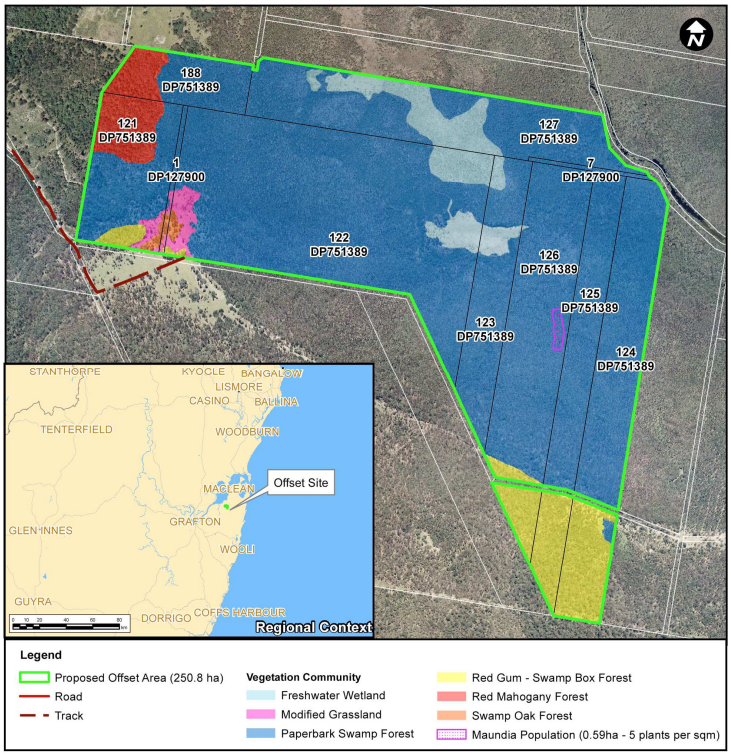

Figure 14*: Shark Creek offset – vegetation communities*

Table 3 shows that the ecosytem credits identified on the offset site equate to 1724, this falls short of the required 2081 ecosystem credits by 357.

Table 3: *Ecosystem credits identified on the offset site*

Vegetation Community Types	***Vegetation Formation***	***Area***	***Credits***
EECs			
Paperbark Swamp Forest	Forest Wetland	202.5	1357
Swamp Oak Forest	Forest Wetland	1.1	1
Freshwater Wetland	Freshwater Wetland	15.7	94
Red Gum – Swamp Box Forest	Grassy Woodlands	18.8	170
Non EECs			
Red Mahogany Forest	Wet Schlerophyll Forests (Grassy subformation)	9.6	96
Modified Grassland		3	0
Total		**250.8**	**1724**

The Department notes that although the area of the proposed offset exceeds the land area required, it does not quite meet the required ecosystem credits. Notwithstanding, the Department acknowledges that it also supports an additional threatened species population. OEH also acknowledged that the proposed offset is considered of higher conservation value due to the better vegetation and habitat condition.

NEH proposed to secure the offset via a Conservation Agreement under the *National Parks and Wildlife Act 1974* (NPW Act) which would conserve and manage the offset in perpetuity.

In addition to the proposed biodiversity offset package, the Proponent also committed to the installation of nest boxes for insectivorous bats in the retained Swamp Oak Forest in the southern part of the site or within the adjacent PWCS land. The Proponent also committed to conduct pre-clearing surveys to identify and relocate any fauna prior to clearing. Council requested that the proposed number of nest boxes be increased to compensate for the loss of hollow bearing trees. Council's request has been incorporated into the recommended conditions.

Consideration and Recommendation

The Department has considered the ecological assessment, RTS, the proposed biodiversity offset package and advice from OEH and concluded that the ecological impacts of the Project are not significant and would be appropriately offset.

The Department concluded that as the vegetation to be removed on the site is highly fragmented and well represented elsewhere in the immediate locality, the Project is unlikely to significantly impact on threatened species or ecological communities.

During its review of the draft conditions, OEH noted that the Proponent and Ecobiological had consulted extensively with OEH in the development of the biodiversity offset package. However, OEH noted that it was yet to undertake a formal assessment of the offset package in accordance with the Biobanking methodology.

The Department is satisfied that as NEH and Ecobiological have been consulting extensively with OEH in the development of the offset package, and that Ecobiological has utilised OEH's Biobanking methodology in its assessment, the offset package is likely to be a suitable and appropriate offset for the impacts of the Project. The Department acknowledges the considerable consultation undertaken and the effort by NEH and Ecobiological to evaluate the offsets required utilising OEH's Biobanking methodology and considers it appropriate to finalise the offset arrangements through the conditions of approval. OEH also recommended conditions requiring the offset package to be developed using the Biobanking methodology. As acknowledged by OEH, the proposed Shark Creek offset site contains higher quality vegetation than the Project site and also contains an additional threatened species. The Department considers that whilst the proposed offset falls marginally short of the required ecosystem credits under the Biobanking methodology, it is substantially better quality vegetation and contiguous with other native vegetation in the adjacent State Forest.

The Department has recommended conditions to ensure the final biodiversity offset package is developed in consultation with OEH and is consistent with the *Biobanking Assessment Methodology and Credit Calculator Operational Manual* and OEH's *Interim policy on assessing and offsetting biodiversity impacts of Part 3A, State Significant Development (SSD) and State Significant Infrastructure projects 2011*. Further, within 12 months of approval, the offset package is to be secured through either a conservation agreement under the NPW Act or a Biobanking Agreement under the TSC Act. The Department also recommends that the Proponent prepares and implements a detailed Biodiversity Management Plan for the offset areas, approved by the Secretary prior to commencement of any construction works.

With implementation of the recommended conditions, the Department is satisfied that impacts on biodiversity would be acceptable and appropriately offset.

5.5 Aboriginal Heritage

The Project includes large scale civil work and much of the site will be filled with imported material so that future developments are above the 1 in 100 year flood level. Any work that disturbs cultural sites has the potential to impact on Aboriginal cultural heritage. The EA included an Aboriginal Heritage Impact Assessment (AHIS), prepared by McCardle Cultural Heritage Pty Ltd (McCardle).

Existing Site Conditions

The study area is situated on an interbarrier depression, which is located between coastal dunes to the south, and ancient inland dunes to the north. Much of the study area is a low lying floodplain and would have been wetland until it was cleared and drained for agricultural use in the mid 1800's. Part of the northern site boundary is flanked by low dunes transitioning between the former wetland and elevated dunes further north. These topographical attributes lend the study area to two archaeological 'survey units' (SU) as shown in Figure 15.

SU1 Floodplain

The floodplain would have been an important area for hunting and gathering. However, cultural deposits are unlikely to be present because wetland is not suitable for occupation. An archaeological survey in 2010 claimed to identify four cultural sites on the floodplain within the study area. However, the sites were not recorded in the Aboriginal Heritage Information Management System (AHIMS) database and could not be located by McCardle's archaeologist, despite some effort to mow and search the GPS coordinates given by the 2010 survey. Both McCardle's archaeologist and the Aboriginal representative present for the search agreed that the sites would not have been cultural sites. The Department is satisfied that the floodplain is unlikely to yield any cultural deposits and that surface disturbing work on the floodplain is unlikely to impact on Aboriginal cultural heritage.

SU2 Low dunes

The AHIMS shows 70 cultural sites within 8 km of the study area, including shell middens, scar trees, artefacts, earth mounds and burial sites; all occurring on the ancient dunes overlooking the floodplain. Consistent with this pattern of occupation, McCardle's archaeologist discovered two highly disturbed shell middens on the low dunes within the study area. Middens are well represented in the region, and these two are considered to be of low significance. However, given the regional pattern of occupation, the middens are likely to indicate a Potential Archaeological Deposit (PAD) (see Figure 16).

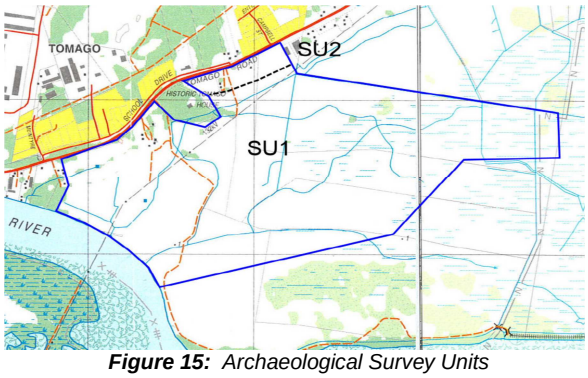

Figure 15: *Archaeological Survey Units*

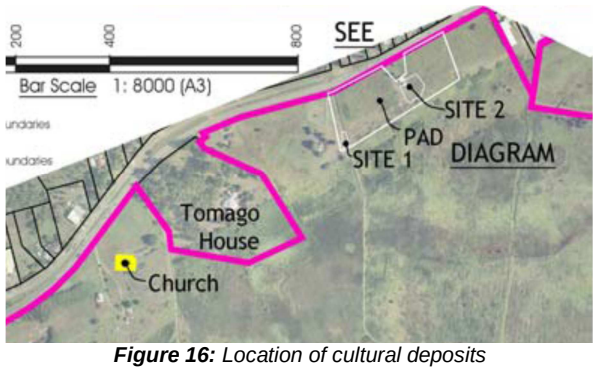

Figure 16: *Location of cultural deposits*

The AHIS does not include a sub-surface investigation of the PAD and no conclusion can be drawn about its contents or cultural significance. Even so, the low dunes are quite elevated above the floodplain and consequently, civil work in this area would be limited to the demolition of several

structures, minor drainage and small volumes of fill during Stage 1 of the Project. Should this work appear likely to disturb the PAD, the Proponent has committed to carry out a sub-surface investigation beforehand in consultation with registered Aboriginal stakeholders and the OEH. The Department is satisfied that such an investigation would lead to an appropriate assessment and treatment of any cultural deposits found in the PAD, if it is to be disturbed. Therefore, the Department has included a trigger for the investigation in the recommended approval conditions.

Aboriginal stakeholder consultation
The Aboriginal stakeholder representatives did not disclose any specific cultural/traditional knowledge of significant places within the study area. All registered Aboriginal parties were provided with a copy of the AHIS and invited to provide a written or verbal response. The Department understands that the findings and recommendations of the AHIS were generally supported.

Burial sites
There is very little research on traditional burial practices in the Port Stephens area. An Aboriginal Elder is said to have been buried on the Tomago House estate in the 1860s. An article in the Sunday edition of the Sydney Morning Herald on 19 August 1953, stated that the Elder had been buried 'just beyond' the house underneath a pine tree. There is no precise record of the burial and it has not been located by visual inspection. Nevertheless, the Department is satisfied that it is more than likely within the grounds of the house, outside the disturbance area of the Project. In the event that burial remains are uncovered, it is standard practice to stop work and contact NSW Police, OEH and appropriate Aboriginal representatives so that the cultural significance of the remains can be assessed. The Department has also included a protocol to this effect in the recommended conditions of approval.

Consideration and Recommendation
Much of the Project site is floodplain with little potential for cultural deposits. A small portion of the site adjacent to part of the northern boundary has two shell middens and appears likely to contain more significant cultural deposits below the surface. If it becomes necessary to disturb this area during Stage 1 works, the Proponent has committed to carry out detailed subsurface investigations beforehand in consultation with the OEH and Aboriginal representatives. The Department is satisfied that such an investigation would lead to the appropriate assessment and treatment of any culturally significant objects that might be disturbed in this area.

As the proposed works across the Project site are on a very large scale, the Department and the OEH consider it necessary for the Proponent to prepare an Aboriginal Cultural Heritage Management Plan. This plan would outline all of the Proponent's obligations to ongoing consultation with the registered Aboriginal parties, training of construction personnel in cultural sensitivities, and the assessment and treatment of cultural sites. The Department has included an appropriate condition in the recommendation. OEH supports the recommended conditions.

5.6 Heritage

The EA included an Historical Archaeological Assessment prepared by Austral Archaeology Pty Ltd, and a Heritage Assessment/Statement of Heritage Impact, prepared by EJE Heritage examining all potential heritage aspects of the site and surrounds.

Existing Site Conditions
The concrete and brick remnants of a World War II (WWII) anti-aircraft battery are located on the site. Unrelated to the battery, the 1840's Tomago House and chapel are surrounded by the site, but located on separate lots (see Figure 17). The proposal integrates measures to preserve the heritage values of the house, chapel and battery, although only the house and chapel are listed on the State Heritage Register.

Impacts of the Project
World War II Anti-Aircraft Battery
Remnants of the battery include the original track access from Tomago Road, four octagonal brick and concrete gun emplacements surrounding a concrete command post, with three concrete magazines at some distance. While not listed on the State Heritage Register, the battery is quite significant as it is part of a wider group of WWII anti-aircraft sites from Port Kembla to Port Stephens and out to Lithgow.

The gun emplacements and command post would be retained within a park, which would be named 'Gunner Heritage Park'. The park would remain in the Proponent's ownership as Council indicated that

it was not prepared to accept public ownership. However, the park would be publicly accessible and these items would be embellished with interpretive signage to allow public appreciation. The magazines and access track are too distant from the command post to be included in the park. Instead, their locations would be recorded before they are carefully covered over with fill. The magazines would be marked on the new ground surface with a military themed interpretive object.

Both the Department and the NSW Heritage Council are satisfied that this is an appropriate treatment of the significant, but unlisted remnants of the battery. The Department has included a number of recommended approval conditions based on the Heritage Council's requirement for a Heritage Interpretation Strategy and the appointment of Conservation Director to direct the conservation of the items to be buried.

Tomago House

Tomago House is the centrepiece of an estate created by Richard Windeyer in the 1840's. The Windeyer family were an eminent politio-legal family of the era. The house is noted for its fine verandahs and its outlook to the pastoral land of the estate (see Figure 18). The house and its chapel are in the ownership and care of the National Trust. They are listed on the State Heritage Register and also as local heritage items under the *Port Stephens Local Environment Plan 2000.* The house and chapel are on 2 separate lots, which are linked by a right of way over the Project site.

The Project includes a proposal to extend the homestead's heritage curtilage by way of application under the *Heritage Act 1977* so that the listing includes part of the adjoining lots created by the proposed subdivision. This will ensure that future development proposals on these lots will be assessed for their sensitivity to the heritage values of the homestead. The proposed subdivision layout also deliberately includes an open vista from the Hunter River to the homestead (over the length of a proposed road), which is an important visual link reflecting what would have been the main access to the estate. The National Trust requested early advanced tree plantings within the grounds of the homestead to provide additional screening, and a construction noise limit of $L_{Aeq\ 15min}$ 40 dB whenever it hosts a function at the homestead, which the Proponent has agreed to. Both the Department and the NSW Heritage Council are satisfied that the forgoing measures are sufficient to protect the significant heritage values of the homestead.

Consideration and Recommendation

The NSW Heritage Council has recommended a number of conditions that require the preparation of plans and the appointment of suitably qualified people to direct the conservation efforts for the WWII anti-aircraft battery. The Department has incorporated these requirements in the recommended conditions, requiring a Heritage Management Plan to be prepared in consultation with the Heritage Council, prior to commencement of construction. The Department is satisfied that the heritage values of the site would be adequately managed via implementation of the Heritage Management Plan. OEH has accepted the recommended conditions.

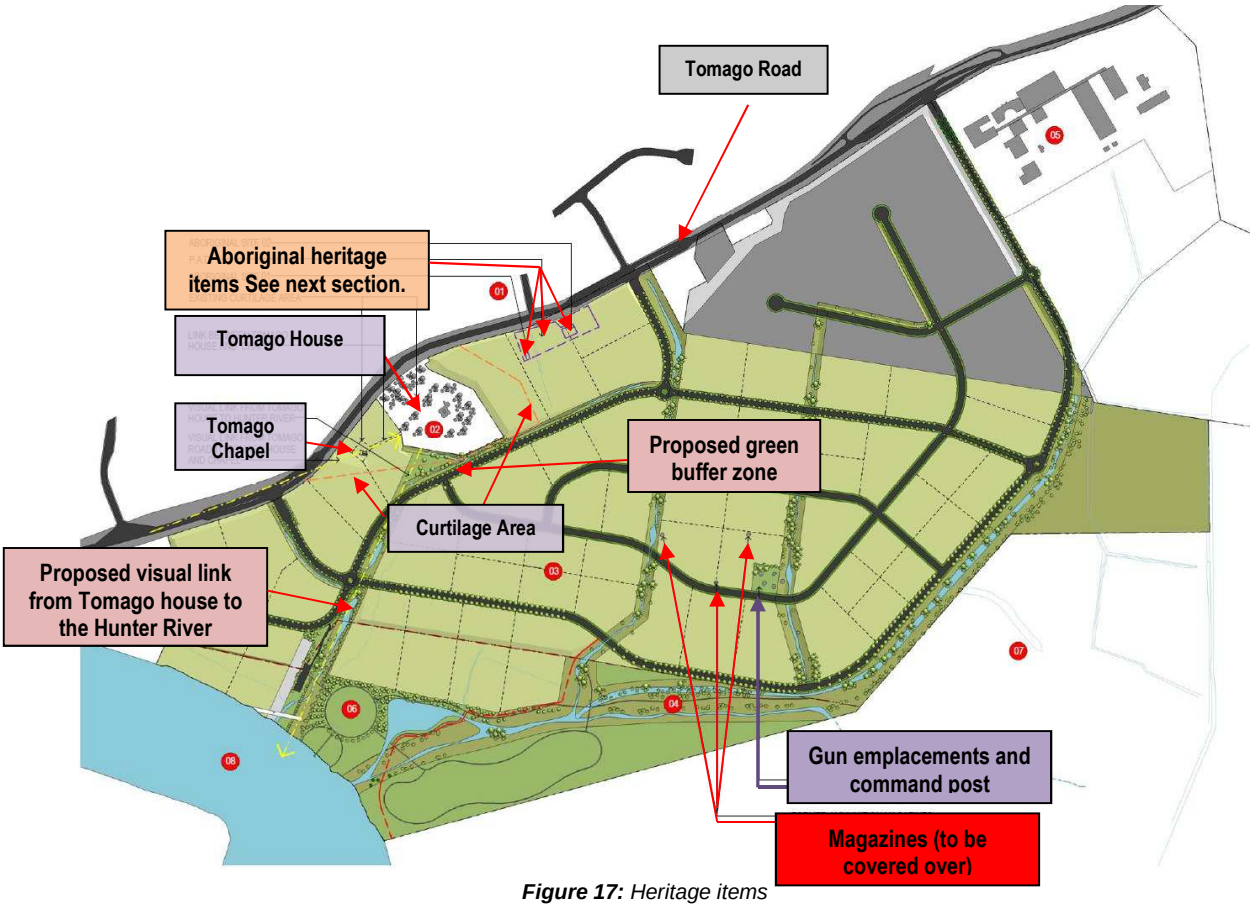

Figure 17: *Heritage items*

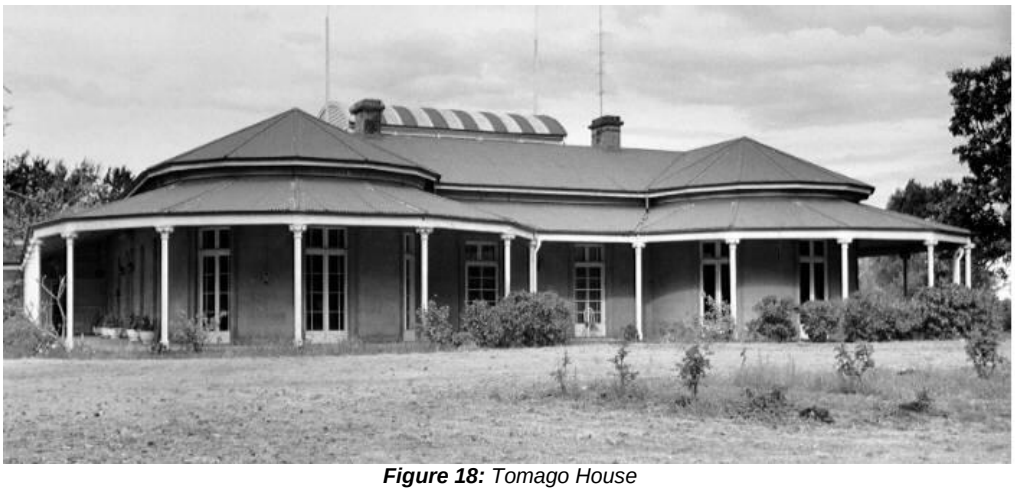

Figure 18: *Tomago House*

5.7 Assessment of Other Issues

Table 4 presents the Department's assessment of other issues including traffic, noise, air quality, contamination, acid sulphate soils, development contributions, open space and landscaping.

Table 4*: Assessment of Other Issues*

Assessment	***Recommended Conditions***
Traffic	
Traffic Volumes ▪ The site would be accessed from Tomago Road, which carries some 7,000 vehicles per day. ▪ The Traffic Impact Assessment (TIA) submitted with the EA estimated that the Project would require 248,376 truck movements over a 20 year period. ▪ As a worst-case, Stage 1 was estimated to require 105,140 truck movements over an 18 month period, being 490 trucks per day,	Recommended conditions require the Proponent to: ▪ undertake detailed traffic analysis prior to any construction works to determine the required timing for construction of the

Assessment	***Recommended Conditions***
representing a 7% increase in traffic volumes on Tomago Road. ▪ The footprint of Stage 1 was modified to address flooding impacts; however the TIA was not revised. The Department considers that the estimated vehicle numbers of 105,140 for the first stage represent the worst-case traffic volumes and are appropriate for assessment purposes. <u>Road Works</u> ▪ As the Project would increase traffic volumes on Tomago Road considerably, RMS requested that NEH pay development contributions or conduct works-in-kind, such as upgrading Tomago Road in the vicinity of the site, in accordance with the requirements of the *Draft Lower Hunter Special Infrastructure Contributions 2011* (SIC). ▪ The Department agrees with RMS and notes that the identified upgrades to Tomago Road would assist to ease congestion and service the Project. ▪ Therefore, the Department has included the requirement for development contributions as a recommended condition. <u>Intersections</u> ▪ The EA identified that two new signalised intersections would be required on Tomago Road to service the Project ('central' and 'western', see Figure 4). ▪ However, the EA indicated that the existing intersection for the Redlake Industrial Estate would be adequate to service construction traffic associated with Stage 1 of the Project. ▪ RMS did not agree that the existing intersection has sufficient capacity to service the existing traffic to the Redlake Estate as well as traffic from Stage 1. ▪ Notwithstanding, RMS recommended a condition requiring detailed traffic analysis prior to the commencement of construction; and if the analysis indicates that there is insufficient capacity, the Proponent must construct the central and western intersections, prior to the issue of a construction certificate for the relevant stage, to the satisfaction of Council and RMS. ▪ The Department has recommended conditions requiring detailed traffic analysis prior to any construction works to establish the required timing for construction of the intersections. The Department recommends that this be developed in accordance with the Staging Plan, to be approved by the Secretary. ▪ The Department also recommends that a Construction Traffic Management Plan be prepared and approved by the Secretary. <u>Internal Road Network and Parking</u> ▪ Access throughout the Project would be via a series of circular roads that integrate the Northbank Project with the adjoining Redlake Estate. ▪ Council raised concerns about the design of the internal roads, and requested that the Proponent provide public transport, bicycle and pedestrian facilities. ▪ As the road network would be transferred to Council for ownership and maintenance, the Department recommends that the internal roads, cycle, pedestrian and parking provision be designed and constructed to Council's satisfaction. ▪ The Department has also recommended conditions for public transport provision and parking adjacent to the two public parks. <u>Conclusion</u> ▪ The Department is satisfied that the traffic generation associated with this Project can be effectively managed through the identified road upgrades and intersection construction so that it would not compromise the safety or efficiency of the surrounding road network. ▪ The Department also considers that the proposal would ensure that adequate public parking, pedestrian, bicycle and public transport facilities are provided at the site.	central and western signalised intersections, with reference to the stages defined in the Staging Plan required by Condition 1 of Schedule 3; ▪ construct the central and western intersections in accordance RMS specifications; ▪ design and construct internal roads and intersections to the satisfaction of Council; ▪ prepare and implement a Construction Traffic Management Plan prior to commencement of each stage of the Project; ▪ construct pedestrian footpaths and bicycle paths prior to completion of each stage; ▪ construct bus facilities on a stage by stage basis if required by local bus companies; ▪ provide on-street parking adjacent to the proposed Riverside Park and Gunner Heritage Park to facilitate public access; and ▪ $29,000 per developable hectare to be paid to the Department as a contribution towards regional infrastructure, or carry out equivalent works-in-kind.
Noise	
▪ Construction noise from the Project has the potential to adversely impact surrounding sensitive receivers including existing residents on the northern side of Tomago Road and users of Tomago House and Chapel. ▪ Bulk earthworks and construction of infrastructure including roadways, drainage and utilities would take place during daytime hours only. ▪ Noise predictions were based on worst-case construction noise levels and were compared against applicable Noise Management Levels (NML's) derived from the *Interim Construction Noise Guideline* (ICNG). ▪ It was found that construction noise levels would comply with applicable criteria at all receiver locations when construction is taking place in the eastern portion of the site but that there could be exceedances of up to	Recommended conditions require the Proponent to: ▪ comply with construction noise criteria at existing residential receivers and at Tomago House and Chapel when functions are taking place; ▪ construct during standard daytime hours only (with extended hours on Saturday

Assessment	***Recommended Conditions***
8dB(A) when construction activities are closer to existing sensitive receivers to the west. ▪ To address these exceedances, the noise impact assessment identified several 'Construction Noise Management Areas' where construction noise would need to be managed carefully to minimise impacts to these receivers. ▪ The EPA raised concerns over the predicted exceedances and recommended that a noise bund be established along the northern side of the site. ▪ The Proponent does not agree with the EPA's recommendation, primarily because the existing road traffic noise level of 67dB(A) exceeds the predicted maximum noise from construction so existing receivers are unlikely to discern construction noise above existing levels of road traffic noise on Tomago Road. ▪ The Department generally concurs with the Proponent's position and considers that given a series of noise mitigation and management measures would be implemented, including within the designated 'Construction Noise Management Areas', the anticipated construction noise impacts could be appropriately managed. ▪ No ambient noise measurements were provided for Tomago House, therefore the default minimum construction noise criteria of 40dBA (background noise level of 30dBA plus 10dBA) has been applied for this receiver when functions are taking place. ▪ Standard construction times are proposed in accordance with the ICNG, however, at the Proponent's request, the Department considers extended construction times on Saturdays (8am to 6pm) are reasonable where works are undertaken outside of the 'Construction Noise Management Areas'. ▪ The Department considers that with the implementation of the recommended conditions, construction noise can be satisfactorily managed.	afternoons outside the Construction Noise Management Areas); ▪ prepare and implement a Construction Noise Management Plan, with a particular focus on management of construction works within the Construction Noise Management Areas; and ▪ manage construction activities to minimise adverse impacts to Tomago House and Chapel when functions are taking place, including a protocol to monitor and manage noise impacts when in use, prepared in consultation with the National Trust.
Air Quality	
▪ Airborne dust would be generated from bulk earthworks as large volumes of fill are delivered, stockpiled and moved throughout the site. ▪ Given the relatively large volume of material and the length of the construction timeframe, dust emissions need to be carefully mitigated and managed to minimise impacts to surrounding sensitive receivers. ▪ The Department and the EPA recognise that in order to ensure that this does not pose an issue for these receivers, additional non-standard dust controls would be needed, including the use of a water cart to suppress dust as well as progressive (stage by stage) land stabilisation works so that areas of the site are not left exposed for long periods of time. ▪ These, together with other standard dust control requirements have been agreed to with the Proponent and have been included as recommended conditions of approval. ▪ The other air quality issue relates to the fact that the site is wholly located within the Tomago Aluminium Company (TAC) buffer zone. This zone was established under TAC's development consent (DA 4908/90) to help ensure that the environmental impacts from the TAC (particularly sulphur dioxide and fluoride emissions) remain within the maximum permitted capacity of the local air shed. ▪ The airshed is at or nearing capacity which has the potential to become a constraint for other industries within the wider Tomago industrial area, including industries on this site and the adjacent Redlake Estate. ▪ With this in mind, the EPA and TAC recommend that future owners, occupiers and/or operators on the site should be made formally aware of the presence of the TAC buffer zone and the associated environmental constraints that it could present to potential industrial uses in the future. ▪ In response, the Proponent stated that it does not intend to allow such pollution-emitting industries on its site and noted that all future industrial development on the site will be subject to separate development assessment during which air quality will be carefully examined at that time. ▪ Whilst both of these points are valid, the Department nonetheless recommends that a condition be imposed to add some upfront certainty and clarity for potential owners, occupiers and/or operators. ▪ Overall, the Department is satisfied that the air quality impacts of the Project can be effectively managed, subject to conditions.	Recommended conditions require the Proponent to: ▪ progressively carry out land stabilisation works and fully stabilise the total land surface within each stage before moving onto the next stage; ▪ implement all reasonable and feasible dust management measures, including the use of a water cart; ▪ cover loads, not track dirt onto public roads and keep public roads clean; and ▪ ensure the requirements of the TAC buffer zone are implemented with respect to the type of industries permitted on the site.
Contamination	
▪ The EA included a Phase 2 Contamination Assessment (CA) for the Project. ▪ The CA found that the site is causing little or no off-site impacts in terms of	Recommended conditions require the Proponent to:

Assessment	***Recommended Conditions***
contamination, however minor on-site contamination from past land uses exists in 'hot spots' from total petroleum hydrocarbons (TPHs) and polycyclic aromatic hydrocarbons (PAHs), some asbestos, heavy metals in groundwater, total phosphorus, total nitrogen, NOx and fluoride in surface water near the former effluent disposal systems and WWII facilities. ▪ Council requested that a Remediation Action Plan (RAP) be prepared to facilitate remediation of the isolated contaminated 'hot spots'. ▪ The Proponent has agreed to Council's request and the Department has incorporated the requirement for a RAP in the recommended conditions. This would include requirements for timing and staging of localised remediation and a site validation plan. ▪ The EPA raised no concerns over contamination. ▪ The Department considers that subject to implementation of the RAP, the site would be suitable for the proposed future industrial uses.	▪ prepare a RAP and remediate the site prior to construction; ▪ submit a validation report prior to construction of the relevant stage confirming that the site is remediated and suitable for future industrial use; and ▪ identify and handle any asbestos in accordance with relevant legislation.
Acid Sulphate Soils	
▪ The site is located in an area with a high probability of occurrence of Acid Sulphate Soil (ASS). ▪ Excavations for the stormwater management infrastructure have the potential to disturb ASS. ▪ ADW Johnson prepared an ASS Management Plan for the Project; however the Plan was not undertaken strictly in accordance the *Acid Sulphate Soils Manual* (ASS Manual). ▪ Given the proximity of the site to SEPP 14 and Ramsar wetlands, the Department has recommended that the Proponent revise its ASS Management Plan in accordance with the ASS Manual, including management and monitoring measures to ensure that acid affected groundwater is not released into the adjacent wetlands. ▪ The Department is satisfied that these measures would ensure that ASS is appropriately managed.	Recommended conditions require the Proponent to: ▪ prepare and implement an updated ASS Management Plan in accordance with the *Acid Sulphate Soils Manual.*
Development Contributions	
<u>Local contributions</u> ▪ Council recommended that NEH pay contributions in accordance with its Section 94A Development Contributions Plan, being 1% of the capital investment value (CIV) of the Project, which equates to $3 million. ▪ Given the scale of the proposal and the expected number of truck movements over its lifetime, the Department considers that Council's request is reasonable. ▪ As the Project would be developed in stages, the Department and Council agreed that contributions could also be paid in stages. ▪ NEH did not agree and requested that contributions be paid for individual lots prior to the issue of a subdivision certificate for each lot. ▪ Council advised that this approach was unacceptable as there was no guarantee that lots would be subdivided, nor was it clear how many lots would be developed and how the CIV for each lot would be calculated. ▪ The Department agrees with Council and recommends that the contributions be paid per stage of the Project to ensure that the timing of contributions reflects the timing of the Project's impacts and demand on local services. <u>Regional contributions</u> ▪ The site is identified in the *Draft Lower Hunter Special Infrastructure Contributions 2011* (SIC). Under the draft SIC, NEH is required to pay a levy of $42,000 per developable hectare as a contribution to regional infrastructure. ▪ However, the Department has recommended a reduced levy of $29,000 per developable hectare, consistent with the adjoining Redlake project approval, unless the SIC is formalised at which time NEH would be required to pay the prescribed amount. ▪ This would equate to approximately $4.8M, based on a developable area of 167 hectares. ▪ In its submission, RMS noted that regional contributions should be applied based on similar employment land in the Lower Hunter and noted that the SIC could be applied or similar works-in-kind for upgrades to Tomago Road. ▪ The Department has included a note in the recommended conditions stating that equivalent works-in-kind may be carried out in lieu of the relevant monetary contributions, to RMS' satisfaction. ▪ The Department is satisfied that the requirements for local and regional infrastructure contributions are provided for in the recommended conditions.	Recommended conditions require the Proponent to: ▪ pay Council 1% of the CIV for each Stage of the Project up to a total of $3 million for the entire Project, as a contribution towards the provision of infrastructure and services; and ▪ $29,000 per developable hectare to be paid to the Department as a contribution towards regional infrastructure, or carry out equivalent works-in-kind.

Assessment	***Recommended Conditions***
Open Space and Landscaping	
Open Space ▪ The Project includes two public open spaces including Gunner Heritage Park, which would include the WWII anti-aircraft battery and command post and Riverside Park which would include a number of formal open spaces for public recreation and rehabilitated Swamp Oak Forest. ▪ The Proponent requested a condition foreshadowing future ownership and maintenance of the public parks by Council. ▪ Council has advised throughout the assessment process that it did not wish to take ownership or maintenance responsibility for the public parks. ▪ The Department has acknowledged Council's request and has removed the condition foreshadowing maintenance responsibilities. ▪ The Department considers that any future change in maintenance obligations can be resolved between NEH and Council. Landscaping ▪ The EA included a Landscape Master Plan showing proposed planting in the public parks and along road and drainage corridors. The plan also included proposed street tree species. ▪ Council advised that the Landscape Master Plan should be revised as the proposed street trees were inappropriate from a maintenance perspective and the proposed species were not suitable. Council also raised concerns with the proposed landscaping of drainage corridors. ▪ The National Trust also raised concerns that no provisions were made for early planting of screening trees around Tomago House. ▪ The Department has recommended that NEH revise the Landscape Master Plan in consultation with Council and the National Trust to ensure these matters are addressed prior to commencement of construction.	Recommended conditions require the Proponent to ▪ revise the Landscape Master Plan, in consultation with Council and the National Trust, prior to the commencement of construction.

6. RECOMMENDED CONDITIONS

The Department has drafted the attached recommended conditions of approval (see **Appendix A**). Table 5 summarises the recommended conditions to address the impacts of the Project.

Table 5*: Summary of Recommended Conditions*

Aspect	***Conditions***
Flooding	▪ detailed flood verification studies and provision of monetary compensation to 'at risk properties'; ▪ flood mitigation measures or compensation for immediately adjacent properties; ▪ landowner consultation plan to explain the Project's impacts and proposed compensation; ▪ $350,000 contribution to Newcastle Council to complete the early flood warning system for Newcastle; and ▪ requirement for consent from OEH under Section 256 of the Water Management Act 2000, prior to the commencement of construction.
Stormwater and wetlands	▪ setbacks from the adjacent wetlands, long-term monitoring and management of stormwater flows, and impacts on wetlands, and requirements for remedial measures if impacts are occurring; and ▪ detailed design of the stormwater drainage system to be developed in consultation with Council and OEH and approved by the Secretary.
Biodiversity	▪ a biodiversity offset package with provisions for long-term security and management.
Heritage	▪ heritage management measures, including a heritage management plan.
Roads	▪ requirements for road design and construction and provision of pedestrian, cycling and public transport facilities; ▪ $29,000 per developable hectare paid to the Department as a contribution towards regional infrastructure, or carry out equivalent works-in-kind.
Other	▪ a requirement for a detailed staging plan prior to construction; ▪ controls on the type of fill used on site; ▪ construction noise management measures and noise limits; ▪ provisions for local and regional infrastructure contributions; ▪ recognition of the requirements of the Tomago Aluminium buffer zone; ▪ a remediation action plan and validation reports; and ▪ a landscape master plan.

As discussed in Section 5, the conditions were developed after extensive consultation with NEH, OEH, EPA, Port Stephens Council, Newcastle Council, DPI and PWCS.

7. CONCLUSION

The Department has assessed the merits of the Project in accordance with the requirements of the EP&A Act.

The Department's assessment concluded that the key issues for the Project are flooding, stormwater and wetland management, biodiversity and heritage.

With regard to flooding, the Department's assessment found that whilst the development of all stages of the Project would not change the overall flood risk profile of the region, it would result in flood level increases to numerous properties across the Hexham area. The Department commissioned two independent flooding specialists to assist in its assessment and liaised extensively with OEH and NEH to establish a fair and equitable mitigation and compensation package for the most affected landowners. The process also involved negotiation with NEH to reduce the extent of filling on the site to minimise flooding impacts, which resulted in NEH avoiding the majority of the area categorised as 'floodway' and retaining approximately 70 hectares immediately adjacent to the river as 'flood mitigation'.

The Department is satisfied that it has explored all reasonable and feasible options to minimise the flooding impacts of the Project and has established a set of stringent flood management related conditions that would adequately mitigate and/or compensate for the Project's residual flooding impacts. This includes requirements for NEH to undertake detailed flood verification work, compensate the most affected landowners and undertake detailed consultation with these landowners. The Department is also satisfied that the recommended conditions would contribute to reducing the overall flood risk in the region by requiring a substantial contribution from NEH toward the provision of a complete early flood warning system for Newcastle.

In relation to stormwater and wetland management, the Department is satisfied that the stormwater system can be designed to ensure protection of the adjacent wetland habitats and that the recommended conditions require detailed and extensive monitoring of the wetlands in consultation with OEH and PWCS to ensure that the conservation objectives of the wetlands continue to be met. In terms of biodiversity, the Department is satisfied that the recommended conditions would adequately protect nearby significant wetlands and the recommended biodiversity offset conditions will adequately address potential onsite impacts.

The Department's assessment recognises the significance and need for the Project in terms of promoting the development of the Tomago Industrial Site, which is identified as a State Significant Site under *State Environmental Planning Policy (Major Development) 2005*. The Project is consistent with the objectives of the *Lower Hunter Regional Strategy 2006-31* providing for the early development of employment lands and generating jobs in the local area.

The Department is satisfied that the Project has significant economic benefits for the Lower Hunter region and that it is therefore in the public interest. Consequently, the Department recommends that the Project be approved, subject to strict conditions.

8. RECOMMENDATION

It is recommended that the Executive Director:

- **consider** the findings and recommendations of this report;
- **approve** the project application, subject to conditions, under section 75J of the *Environmental Planning and Assessment Act 1979*; and
- **sign** the attached project approval (see Appendix A).

Chris Ritchie
Industry, Key Sites & Social Projects

29.6.14

Daniel Keary
Director
Industry, Key Sites & Social Projects

Chris Wilson
Executive Director
Development Assessment Systems & Approvals

APPENDIX A PROJECT APPROVAL

APPENDIX B SUPPLEMENTARY ASSESSMENT INFORMATION

Supplementary assessment information covering regional flooding impacts, localised flooding and stormwater management:

1. *Northbank Enterprise Hub* dated 7 February 2013 prepared by ADW Johnson;
2. *Northbank Enterprise Hub (MP 10_0185)* dated 14 February 2013 prepared by ADW Johnson;
3. *Northbank Enterprise Hub Newcastle Port Corporation Access Rights to Navigational Marker* dated 5 March 2013 prepared by ADW Johnson;
4. *Northbank Enterprise Hub* dated 5 March 2013 prepared by ADW Johnson;
5. *Northbank Enterprise Hub – Regional Flooding* dated 26 March 2013 prepared by ADW Johnson;
6. *Northbank Enterprise Hub – Regional Flooding to Five (5) Adjoining Properties* dated 6 May 2013 prepared by Northbank Enterprise Hub Pty Ltd;
7. *Northbank Enterprise Hub Pty Ltd – Regional Flooding Submissions* dated 7 May 2013 prepared by Northbank Enterprise Hub Pty Ltd, incorporating *Northbank Enterprise Hub – Flood Impact Assessment* dated 7 May 2013 prepared by BMT WBM; and
8. *Northbank Enterprise Hub – Flood Impact Assessment* dated 11 November 2013 prepared by BMT WBM.

APPENDIX C RESPONSE TO SUBMISSIONS

See the Department's website at
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=4020

APPENDIX D SUBMISSIONS

See the Department's website at
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=4020

APPENDIX E ENVIRONMENTAL ASSESSMENT

See the Department's website at
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=4020

APPENDIX F CONSIDERATION OF ENVIRONMENTAL PLANNING INSTRUMENTS

Section 75I(2) of the EP&A Act requires that reference be made to the provisions of any environmental planning instrument that would (but for Part 3A of the Act) substantially govern the carrying out of the Project. Consideration of the Project in the context of the objectives and provisions of the relevant environmental planning instruments is provided below.

State Environmental Planning Policy (Major Development)

The site is a State Significant Site listed under Schedule 3 of the SEPP (Major Development). The site is zoned IN General Industrial. The objectives of which are to:

(a) to provide for a wide range of industrial, warehouse and related land uses,
(b) to provide suitable areas for those industries that need to be separated from other land uses,
(c) to encourage employment opportunities,
(d) to minimise any adverse effect of industry on other land uses and the environment,
(e) to enable other land uses that provide facilities or services to meet the day to day needs of workers in the area.

The Department has considered the Project against the objectives of the IN General Industrial zone and is satisfied that it is consistent. The Project is for an industrial subdivision only, however, it would facilitate future development which would generate further employment opportunities as well as a wide range of industrial land uses.

State Environmental Planning Policy No 14—Coastal Wetland

The aim of *State Environmental Planning Policy No 14—Coastal Wetland* (SEPP 14) is to ensure that coastal wetlands are preserved and protected for environmental and economic reasons. The policy applies to coastal local government areas outside the Sydney metropolitan area.

The Project would be located in the Tomago Industrial site and under Clause 4 of the SEPP, this policy does not apply to land within the Tomago Industrial site. Nonetheless, given the proximity and significance of the adjacent Ramsar and SEPP 14 listed wetlands, the Department has considered the provisions of SEPP 14 in its assessment. The Department is satisfied that the recommended conditions of approval would ensure that the Project would have minimal impact on the nearby SEPP 14 wetlands (see Section 5).

State Environmental Planning Policy No. 44 – Koala Habitat Protection

State Environmental Planning Policy No. 44 – Koala Habitat Protection (SEPP 44) applies to Port Stephens LGA. Under clause 9 of the SEPP, the consent authority is not to grant consent unless it is satisfied that any "potential koala habitat" is not "core koala habitat" as defined under the SEPP.

A Koala Plan of Management (known as the Port Stephens Council Comprehensive Koala Plan of Management or CKPoM) has been prepared for the Port Stephens LGA in accordance with SEPP 44. The CKPoM identifies preferred, supplementary and marginal habitat for koalas in the Port Stephens LGA. While the CKPoM indicates that preferred koala habitat is present on the Project site, a survey of the site indicates that there is only one feed tree located on site and the small amount of habitat present is sparse and does not represent core Koala habitat. In addition, no evidence of the presence of koalas was found during the ecological surveys.

As such, the Project would have minimal impact on koala populations or koala habitat. The Department is satisfied with the consideration of SEPP 44 in the EA for the Project.

State Environmental Planning Policy No. 55 – Remediation of Land

State Environmental Planning Policy No. 55 – Remediation of Land applies to the site. SEPP 55 aims to ensure that potential contamination issues are considered in the determination of a development application. Clause 7 of SEPP 55 states that:

7(1) A consent authority must not consent to the carrying out of any development on land unless:
(a) it has considered whether the land is contaminated, and
(b) if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and

(c) if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose.

The Department has considered SEPP 55 in its assessment of the Project and has included recommended conditions requiring remediation of the site and validation that it is suitable for industrial use.

State Environmental Planning Policy No.71 – Coastal Protection

State Environmental Planning Policy No. 71 – Coastal Protection applies to the site as it is within the coastal zone. In broad terms SEPP 71 aims to ensure that the natural, cultural, recreational and economic assets of the NSW coast are protected and appropriately managed.

The relevant matters for consideration in clause 8 of the SEPP 71 include:

- the aims of the SEPP 71;
- the suitability of development given its type, location and design and its relationship with the surrounding area;
- the scenic qualities of the New South Wales coast, and means to protect and improve these qualities;
- measures to conserve animals and plants, and their habitats;
- measures to protect the cultural places, values, customs, beliefs and traditional knowledge of Aboriginals;
- likely impacts of development on the water quality of coastal waterbodies; and
- the conservation and preservation of items of heritage, archaeological or historic significance.

The Department is satisfied that the Project is broadly consistent with the aims and other matters for consideration in SEPP 71. The Department considers that the site is suitable for the intended use, noting its industrial zoning and the project would not be incompatible with surrounding land uses. It would have a negligible impact on scenic qualities and water quality protection measures would ensure that adequate protection is provided for animals, plants and their habitats, including the Hunter River, and the adjacent wetlands. The recommended conditions would also require NEH to collect and preserve any Aboriginal heritage items identified during construction and would ensure the protection of the identified former WWII anti-aircraft gun emplacements and the underground command post.

State Environmental Planning Policy (Infrastructure) 2007

The SEPP (Infrastructure) aims to facilitate the effective delivery of infrastructure across the State by improving regulatory certainty and efficiency, identifying matters to be considered in the assessment of development adjacent to particular types of infrastructure development, and providing for consultation with relevant public authorities about certain development during the assessment process.

The Project constitutes traffic generating development under Schedule 3 of the SEPP. The Project was referred to the RMS for comment in accordance with the Infrastructure SEPP. A summary of the RMS's submission is provided in Section 4. The Project is considered to be consistent with the aims and objectives of the Infrastructure SEPP given that consultation and consideration of the issues raised by RMS has been undertaken (see Section 5).

Hunter Regional Environmental Plan 1998

The *Hunter Regional Environmental Plan 1998* (Hunter REP) aims to conserve the environmental heritage of the Hunter Region.

Part 7 sets out the heads of consideration that an approval authority must consider when determining an application. These objectives require an authority not to grant approval unless it has made an assessment of the significance of the any identified heritage item and potential impacts on heritage are within acceptable levels. The site contains or lies adjacent to a number of heritage items. The Department has considered the Project against these objectives within Section 5 of this report, and is satisfied that the Project satisfies the requirements of the Hunter REP subject to the recommended conditions of approval.